

# CAIDA YEAR BOOK 1969.64 




The towers of Canada's Parliament Buildings rise serene in the blue and gold of an October day.

# CHADA YEAR BOOK 1963.64 

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

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## PREFACE

The 1963-64 edition of the Canada Year Book continues a series of annual publications giving official statistical and other information on almost every measurable phase of Canada's development. As the economy of the country has expanded, the Dominion Bureau of Statistics has endeavoured to present the story of this development, summarizing a great mass of detailed statistical information concisely within the covers of one volume and supplementing it with data from other Departments of the Federal Government and from the provinces. The 1963-64 edition is so designated because it will be released in the early months of 1964; the cut-off date for each chapter was advanced by about three months from that of the previous edition.

Special feature articles are presented in each edition of the Year Book. Those in the current issue include: "Changes in Canadian Agriculture as Reflected by the Census of 1961", pp. 409-415; "Secondary Manufacturing in Canada", pp. 637-643; "Recent Developments in Public Technical and Vocational Education in Canada", pp. 737-743; "Canadian Merchandise Exports and Imports in 1962-63", pp. 907-911; and "Life Insurance", pp. 1071-1077. In addition, certain standard material is treated in somewhat more detail in this edition, such as the sections on "Main Physical and Economic Features of the Provinces and Territories" and "Provincial Wildlife Conservation Measures".

All chapters include the latest data available at the time of printing. The Population Chapter contains summary population statistics from 1961 Census and the Agriculture Chapter summary agricultural census figures. After the printing of Chapter II on Constitution and Government, changes were made in the administrative functions of several Federal Government Departments and in ministerial responsibility (pp. 104-122). Such changes, up to Nov. 15, 1963, have been included in the Organization Chart inserted facing p. 104. Certain other revisions to the information in this Chapter are given in the Appendix, which also contains a list of the members of the House of Commons as elected at the Twenty-Sixth General Election, Apr. 8, 1963; this was not available in time to be included in Chapter II. Enclosed in the pocket on the inside cover of the volume is a recently completed 140 -mile-to-the-inch political map and a 100 -mile-to-the-inch map showing the distribution of the population of Canada as at the date of the latest Census, June 1, 1961.

The present volume was produced in the Canada Year Book, Handbook and Library 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 L. Tessier of the Drafting Unit and the Surveys and Mapping Branch of the Department of Mines and Technical Surveys.

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.


Dominion Statistician
Dominion Bureau of Statistics, Ottawa, Nov. 15, 1963.

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## 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 U.S. fluid ounce and one Imperial gallon equals 1.2 U.S. gallons.

1 Imperial pint $=20$ fluid ounces
1 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 $=2,000 \mathrm{lb}$.
1 long ton $=2,240 \mathrm{lb}$.
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, cherries, peaches, |  |
| Barley and buckwheat. | 48 | grapes and apricots............... | 50 |
| Rye, flaxseed and corn. | 56 | Strawberries and |  |
| Mixed grains.. | 50 | raspberries........... (per qt.) | 1.25 |
| All others............. | 60 |  |  |

## 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.

## Miscellaneous

Maritime Provinces = Prince Edward Island, Nova Scotia and New Brunswick
Atlantic Provinces = Newfoundland, Prince Edward Island, Nova Scotia and New Brunswick
Btu. $=$ British thermal unit (coal)
Central Canada $=$ Quebec and Ontario
Prairie Provinces=Manitoba, Saskatchewan and Alberta
Mcf. = thousand cubic feet (gas)
n.e.s. $=$ not elsewhere specified
n.o.p. $=$ not otherwise provided for
psi. (atomic research) =per square inch
D.B.H. (forestry) = diameter at breast height.

## SYMBOLS

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.
${ }^{\mathrm{p}}$ preliminary figures.
${ }^{r}$ revised figures.


## GHAPTER I.-PHYSIOGRAPHY AND RELATED SGIENGES

## CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on the facing page.

## PART I.-GEOGRAPHY AND GEOLOGY*

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 $52^{\circ} 37^{\prime} \mathrm{W}$, to Mount St. Elias, Yukon Territory, at $141^{\circ} \mathrm{W}$, a distance of $88^{\circ} 23^{\prime}$. 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 $83^{\circ} 07^{\prime} \mathrm{N}$. Canada is thus a western and a northern country, a fact of increasing strategic significance.

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 arc of land between Vancouver in southern British Columbia and Whitehorse in Yukon Territory provides the shortest crossings of the North Pacific 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.

[^0]
1.-Approximate Land and Freshwater Areas, by Province or Territory

Note.-A classification of land areas as agricultural, forested, etc., is given at p. 31.

| Province or Territory | Land | Freshwater | Total | Percentage $\stackrel{\text { of }}{\text { Total Area }}$ |
| :---: | :---: | :---: | :---: | :---: |
|  | sq. miles | sq. miles | sq. miles |  |
| Newfoundland.............. | 143,045 | 13, 140 | 156,185 | 4.1 |
| Island of Newioundiand. | 41,164 | 2,195 <br> 10,945 | 48, 4695 | 1.1 |
| Prince Edward ${ }^{\text {Labadior }}$ | $\begin{array}{r}101,881 \\ 2,184 \\ \hline\end{array}$ | 10,946 | 112,896 2,184 | 3.0 0.1 |
| Nova Scotia..... | 20,402 | 1,023 | 21,425 | 0.6 |
| New Brunswick. | 27, 835 | 519 | 28,354 | 0.7 |
| Quebec. | 523,860 | 71,000 | 594,860 | 15.4 |
| Ontario. | 344,092 | 68,490 | ${ }^{412,582}$ | 10.7 |
| Manitoba..... | ${ }_{2}^{211,775}$ | 39,225 31518 | ${ }_{251}^{251,000}$ | 6.5 |
| Alberta...... | 248,800 | 6,485 | 255, 285 | 6.6 |
| British Columbia | 359, 279 | 6,976 | 366,255 | 9.5 |
| Yukon Territory. | 205,346 | 1,730 | 207,076 | 5.4 |
| Northwest Territories | 1,253,438 | 51,465 | 1,304,903 | 33.9 |
| Franklin. | 541,753 | 7,500 | 549,253 | 14.9 |
| Keewatin. | 218,460 | 9,700 | 2988, 160 |  |
| Mackenzie | 493,285 | 34,265 | 627, 490 | 18.7 |
| Canada. | 3,560,238 | 291,571 | 3,851,809 | 100.0 |

In size，Canada is the largest country in the Western Hemisphere and the second largest country in the world．Its area of $3,851,809 \mathrm{sq}$ ．miles may be compared with that of the Union of Soviet Socialist Republics，8，649，512 sq．miles，＊the United States of Amer－ ica（including Alaska and Hawaii）， $3,615,214$ sq．miles，＊and Brazil， $3,287,204$ sq．miles．＊ 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 scope for settlement，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 forested land 19 p．c．of the total．The population of Canada，estimated at $18,570,000$ on June 1，1962，may be compared with $183,742,000 \dagger$ for the United States（including Alaska and Hawaii）（1961）and with $73,088,000 \dagger$ for Brazil（1961）．

The milages in Table $\mathbf{2}$ 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 milage given is for the major means of transport used between the points concerned；air milages are given for most transcontinental distances．

[^1]
## 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 milage given is for the type of travel most generally used－road（H），rail（R），air（A）or water（w）；air milages are given for most transcontinental distances．Water routes are given in nautical miles．

| From | To | Halifax | Montreal | Quebec | Ottawa | Toronto | Winnipeg | $\underset{\text { ton }}{\text { Edmon- }}$ | Van－ couver |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | miles | miles | miles | miles | miles | miles | miles | miles |
| St．Joh |  | w 531 | w 1，043 | w 904 | － | w 1，336 | － | － | A 3，955 |
| Charlo |  | H 165 |  | － |  | － |  |  | －${ }^{-1232}$ |
| Hreder |  |  | $\begin{array}{ll}\text { H } & 860 \\ \text { H } & 531\end{array}$ | $\begin{array}{ll}\text { H } & 759 \\ \mathbf{H} & 366\end{array}$ |  | H 1，210 |  |  | A 3，232 |
| Freder |  | $\begin{array}{ll}\text { H } & 329 \\ \text { H }\end{array}$ | $\begin{array}{ll}\text { H } & 531 \\ \text { H } & 624\end{array}$ | $\begin{array}{ll}\mathbf{H} & 366 \\ \mathbf{H} & 459\end{array}$ | H 748 | н ${ }^{-974}$ |  |  |  |
| Chibou |  |  |  | R 608 | H | － |  |  |  |
| Montre |  | R 840 | － | H 165 | H 124 | H 350 | A 1,419 | A 2，225 | A 2,668 |
| Quebec |  |  | $\begin{array}{ll} \mathbf{H} & 165 \\ \boldsymbol{\sigma}_{\mathbf{R}} & 357 \end{array}$ | R－ 357 | H 289 | H 515 | A 1,436 |  | A 2，814 |
| Scheff |  | － | $\{+$ | ＋ | － | － | － | － | － |
| Sept |  | － | $\begin{array}{cc}\text { w } \\ \mathbf{w} & 430 \\ \text { w }\end{array}$ | $\begin{array}{ll}\text { w } & 291 \\ \mathbf{w} & 291\end{array}$ |  | － |  |  |  |
| Fort W |  | － | w 1，055 | w 1，194 | R 878 | w 762 | R $\quad 419$ | R 1,219 | R 1，892 |
| Hamil |  |  | H 394 | H $\quad 559$ | H 303 | H 44 |  |  | － |
| Ottawa |  |  | H 124 | H 289 | － | H $\quad 259$ | A 1,325 | A 2，131 | A 2，574 |
| Sudbur |  |  |  |  | H $\quad 313$ | H 234 | R 945 |  |  |
| Toront |  | w $1,188^{1}$ | H ${ }^{350}$ | H $\sim^{515}$ | H $\quad 259$ | － | A 957 | A 1,748 | A 2，360 |
| Lynn |  | 二 | 二 | － | － |  |  | － |  |
| Winnip |  | － | － | － |  | A 957 | R－ | R 800 | R $\quad 1,473$ |
| Regina |  | － | R 1，764 | － | R 1，653 | R 1,587 | R $\quad 356$ | R 512 | R 1,117 |
| Saskat |  | － | ， 1 | － | － |  | R 470 | R $\quad 330$ | R $\mathbf{1} 1,095$ |
| Uraniu |  | － | － |  | 二 |  |  | A $\quad 456$ | A 992 |
| Calgar |  |  |  |  |  | R 2，063 | R $\quad 832$ | R 194 | R 641 |
| Edmon |  | － | R 2，159 | － | R 2，041 | R 2，007 | R $\quad 800$ | － 371 | R $\quad 765$ |
| Fort S |  | 二 |  | － | － | － | － | A 371 | $\begin{array}{ll}\text { R } & 728 \\ \mathbf{w} & 420\end{array}$ |
| Prince |  |  |  |  |  |  |  | R 956 | Ww |
| Vancour |  | A 3，232 | A 2,668 | R 3，042 | R 2，770 | A 2,360 | A 1,403 | R 765 |  |
| Victor |  | A 3，279 | － | － |  | － | － | － | w 81 |
| Dawso |  | － | － | － | － | － | A 1，058 | A 316 | A 615 |
| Frobis |  |  |  |  |  |  |  | H 1,287 | A 1,056 |
| Inuvik |  |  | A ${ }_{\text {A }} \mathbf{1 , 5 4 3}$ | － |  |  | A 2，140 | A 1,318 | A $\quad 1,965$ A 1,854 |
| Yellow |  |  |  | － | － | － | A 1， 398 | A 656 | A 1，192 |

${ }^{1}$ Via Strait of Canso．

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.

## Section 1.-Physical Geography

## Subsection 1.-Main Physical and Economic Features of the Provinces and Territories

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 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 the following paragraphs. However, 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. It should also perhaps be noted that physical features and natural resources influence economic development only up to a point. In a pioneer area and as long as that area is dependent upon primary resources this is the case but as growth continues and industry develops and diversifies, as the problems of transportation and communication are mitigated and public services become increasingly important, the dependence shifts to demand and markets and large agglomerations of population become magnets drawing unto themselves with less and less relation to the geography of their location. This has become particularly true of the heavily populated areas of southwestern Ontario and southeastern Quebec and to a lesser extent of other urban centres across the land.

Newfoundland.-Newfoundland, Canada's most easterly province, has a total area of 156,185 sq. miles. The larger part of this area, 112,826 sq. miles, known as the Coast of Labrador, is on the mainland and is separated from the Island of Newfoundland at the narrowest point by the Strait of Belle Isle. Labrador is a roughly triangular area bordering the north Atlantic Coast from the Strait of Belle Isle to Ungava Bay, its rounded apex extending inland about 450 miles. The surface of this remote region is mostly a barren mosaic of rocks, swamps and lakes; its rugged coastline has promontories rising up to 3,000 feet directly from the sea and the extreme northern area is dominated by the Torngat Mountains, summits of which rise to over 5,000 feet. Although it lies in the same latitude as Britain, Labrador has an extremely rigorous climate and is usually snow-covered for more than half the year. Many of its river valleys are well forested, the accessible timber stand being estimated at $6,755,000,000$ cu. feet, its rivers, particularly the Hamilton, have numerous falls suitable for the development of hydro power, and its coastal waters abound in fish which, until recently, were its most valuable resource. However, the great mineral potential of its Precambrian rocks is beginning to be exploited and iron ore is now Labrador's greatest source of wealth. The high-grade hematite deposits on the LabradorQuebec boundary near the headwaters of the Hamilton River account for almost half the Canadian shipments of iron ore and the nearby Wabush Lake area, now under development, will greatly increase this production. To serve the latter, the first use of Labrador's hydro-power potential has been made by the installation of a $120,000-\mathrm{hp}$. plant on the Unknown River. Labrador in 1961 had a population of only 13,500, about half of whom were located in the area of Goose Bay, a Royal Canadian Air Force station. Close to 800 were in the new townsite of Labrador City at Wabush Lake and the remainder were scattered along the coast, supporting themselves by fishing and hunting. Indians and Eskimos numbered about 1,200.

The Island of Newfoundland, an area of 43,359 sq. miles, is also triangular in shape, each side being about 320 miles long. Its northwestern point is only a few miles from the mainland of Labrador and the distance from its southwestern tip across Cabot Strait to Cape Breton Island is 70 miles. The topography of the Island is quite rugged but there are no areas of great relief except the Long Range which parallels the western coast and rises to heights of over 2,600 feet. The main physiographic features are determined by a series of very old, worn-down foldridges with axes trending northeast to southwest. As in Labrador, much of the surface is barren and rocky and has innumerable ponds and swamps, the drainage having been deranged in the last glaciation. The climate of
 the Island is marine in character, although the moderating influence of the sea is affected by the cold waters of the Labrador current which sweep along the east and west coasts. Summers are cool and winters relatively mild.

The economy of this portion of the province is also based on forest, fish and mineral resources. Agriculture at present is of only local importance, but it is now considered that Newfoundland's millions of acres of bogland are a potential avenue of expansion for the agricultural industry; with special treatment, these peat lands are capable of producing high yields of most vegetables. The river valleys of the interior and the west coast are thickly forested and support a thriving pulp and paper industry. The deeply indented coastline provides many harbours for hundreds of fishing craft. Modern trawlers and draggers operating out of ports along the southern coast fish the prolific cod banks in all seasons of the year but the summer inshore trap fishery from small boats is equally important. The Island also has extensive mineral deposits, of which iron ore is the most valuable. The huge Wabana deposits of medium-grade ore on Bell Island in Conception Bay account for about 12 p.c. of the Canadian output; substantial quantities of lead-zinccopper ore are mined at Buchans in the interior; and the major part of Canada's production of fluorspar comes from the Burin Peninsula.

The Island in 1961 had a population of 444,319 , close to 40 p.c. of whom resided on the Avalon Peninsula and on the eastern shores of Placentia and Trinity Bays which separate the peninsula from the Island and around Bonavista Bay immediately to the north. The capital city of St. John's, situated on the east coast of the peninsula, had, with its environs, a population of 90,838 and the other important urban areas were Corner Brook on the west coast and Grand Falls in the north, both pulp and paper centres. The remainder of the people live in small groups along the coasts and depend mostly on the sea for their livelihood and for contact with other communities and the outside world.

Nova Scotia.-Nova Scotia may be described as a peninsula, 381 miles in length and from 50 to 105 miles in width-an area of 21,425 sq. miles almost surrounded by the waters of the Bay of Fundy, the Atlantic Ocean, the Gulf of St. Lawrence and Northumberland Strait. Midway along its western boundary it is connected with the Province of New Brunswick by the Isthmus of Chignecto, a neck of land about 15 miles across. The northeastern portion of the province, an area of $3,975 \mathrm{sq}$. miles known as Cape Breton Island, is separated from the mainland by the narrow Strait of Canso, now traversed by a permanent causeway. The Island is itself almost bisected from northeast to southwest by the salt water Bras d'Or Lakes, and consists mainly of a wooded upland rising in the north to a height of 1,747 feet, the highest point in the province. Most of the mainland is of low relief. Ridges not exceeding an altitude of 1,000 feet run through the centre of the province and there is an upland surface known as the Cobequid Mountains running east and west to the north of the Bay of Fundy, this upland being about 900 feet high, from eight to 12 miles wide and 85 miles long; a few low rounded remnants rise to 1,000 or 1,100 feet. Although the climate of Nova Scotia is continental rather than marine, the temperatures both summer and winter are more moderate than in interior continental areas in the same latitude and the seasons somewhat later. Winters are particularly stormy on the Atlantic Coast and fog is prevalent throughout the year. The Atlantic side of the province is generally rocky and deeply indented with bays and inlets providing many excellent harbours. Trawlers and draggers operating from these harbours supply cod and other groundfish to the processing plants in their home ports and smaller vessels fishing the inshore waters, both on the Atlantic Coast and in the Bay of Fundy, harvest large quantities of pelagic and estuarial species. Lobster has become the most valuable of Nova Scotia's sea products; most of the catch is marketed alive or as chilled or frozen lobster meat, and the remainder is canned. There are 42 plants in the province producing frozen fish products.

The slopes of the Bay of Fundy and Northumberland Strait, protected from Atlantic storms, are the main agricultural areas of the province. The climate is suitable for dairy, poultry and mixed farming and, in some sections, fruit growing; strawberries and blueberries are the principal small fruits produced. The Annapolis Valley, along the coast of the Bay of Fundy, is internationally known for its apple orchards and some 44,000 acres of fertile tidal marshland have been added to this area by protection from saltwater flooding. Elsewhere in the province agriculture is patchy and often a part-time occupation.

Mineral resources include coal, gypsum and salt. Nova Scotia is a leading producer of good bituminous coal suitable for the production of coke and excellent for domestic use, although recently the demand for coal has been declining and the coal-producing areas, particularly Springhill and Stellarton, have been hard hit economically. The large steel mills of Glace Bay were established there to make use of the coal available in that area and the iron ore easily transportable by water across the Cabot Strait from the Wabana mines of Newfoundland. Large gypsum deposits in the central area provide over 82 p.c. of Canada's output of this mineral and the construction of the Canso Causeway created an ice-free harbour at Point Tupper and thus facilitated the exploitation of other large gypsum deposits at Denys Station on Cape Breton Island. Quantities of rock salt are mined on the northwest mainland. The forested area of the province is proportionately very large and most of it is regarded as productive. The output of the 500 sawmills of all sizes is most

important, and the province has two pulp mills and two paper mills in operation. On these resources are based the leading manufacturing industries of Nova Scotia, although recently secondary industries are becoming more diversified.

Just over half of the people of Nova Scotia, who number 737,000, are classed by the census as urban dwellers. However, since 40 p.c. of the total live in the two large urban areas of Halifax-Dartmouth and Sydney-Glace Bay, the province has the appearance of being mainly rural, with about 46 p.c. of the population living in small towns and villages or on farms. Halifax, a metropolitan area of 183,946 people, is situated on one of the best land-locked harbours in the world.

New Brunswick.-New Brunswick is nearly rectangular in shape and has an area of 28,354 sq. miles. The Bay of Chaleur cutting about 100 miles inland on the north, the Gulf of St. Lawrence and Northumberland Strait on the east, the Bay of Fundy on the south and Passamaquoddy Bay on the southwest give the province a very extensive seacoast. It adjoins the United States on the west and the Province of Quebec on the north and northwest.

The surface of New Brunswick is mostly undulating. The great Northwestern Plateau, 1,000 to 1,500 feet above sea level, is deeply dissected by valleys tributary to the St. John River which flows generally southward across the whole province to the Bay of Fundy and to the Restigouche River which flows eastward, emptying into the Bay of Chaleur. The Central Highlands consist of a dissected plateau about 2,000 feet above sea level, surmounted by numerous monadnocks, the highest of which is Mount Carleton ( 2,690 feet). Many river valleys have deeply trenched the plateau to a depth of 1,000 or more feet below the summit level. In the south an upland area of widely separated fold ridges provides lesser relief. The valley of the St. John River is the major lowland area. The climate of this province, although typically continental rather than marine, also reflects the moderating influence of the sea. As in Nova Scotia, the seasons are somewhat delayed and temperatures in the interior are more extreme than on the coasts.

The interior of New Brunswick is very heavily forested. In fact, 86 p.c. of the total land area is classed as productive forest land and three quarters of the merchantable wood is made up of coniferous species. It is mainly upon these great stands of timber and the existence of the many fast-flowing rivers providing easy transportation for the logs to the mills or to tide-water that the economy of the province has been built. Four pulp mills, three pulp and paper mills and one paper-converting mill are in operation and their output, together with that of the 300 sawmills, makes up more than a third of the manufacturing production of the province. The rivers provide moderate-sized power sites advantageously situated to meet local requirements and many of these have been developed. The St. John River Valley and the northwestern part of the province are the agricultural areas, the former specializing in potato and livestock production and the latter containing fairly large mixed-produce farms. In the northeast and along the coastal fringe, part-time agriculture is often combined with fishing and/or lumbering for a livelihood. Fishing, too, is well developed, inshore fisheries being of greater importance than offshore. Lobster from Northumberland Strait is the major money-maker, followed by herring from the Bay of Fundy and then cod. The mineral resources of the province are not extensive. They include moderate amounts of coal, natural gas and petroleum. Shipments of ore and concentrates containing copper, lead and zinc have recently been made from base-metal mines in the northern area.

In 1961, 597,936 people lived in New Brunswick, 10 p.c. of them on farms, 43 p.c. in small centres of fewer than 1,000 persons, and the remainder in urban centres. The metropolitan area of Saint John, which is situated at the mouth of the St. John River and is the principal port and industrial centre of the province, had 95,563 residents. Most of the population of the province is located fairly close to the coastal areas, along the St. John River Valley which is near the western boundary, and in the lower-lying eastern portion. The interior is very sparsely inhabited.

Prince Edward Island.-This, the smallest province of Canada, is a separate land mass cradled in the Gulf of St. Lawrence, 10 to 20 miles off the mainland east of New Brunswick and north of Nova Scotia. The waters separating it from these provinces are known as the Northumberland Strait. The Island has an area of $2,184 \mathrm{sq}$. miles, varies greatly in width from about four to 40 miles and is 140 miles long. It has no pronounced upland but attains an altitude of about 450 feet above sea level. The coast is greatly indented and has many bays and inlets running far inland in every direction. In fact, the Island is almost trisected by the indention of Tracadie Bay on the north which almost meets the wide East River flowing into Hillsborough Bay on the south, and by the deep indention of Malpeque Bay on the north curving within two or three miles of Bedeque Bay on the south. Because of the influence of the sea, the climate is quite moderate although occasional extreme lows may be experienced in winter. The Island enjoys a frost-free period of about five months.

The moderate climate combined with fertile soil is very favourable to the pursuit of agriculture, which is the principal occupation of the people. Almost 70 p.c. of the land area is cultivated, the farms producing mixed grain crops and specializing in potato-growing; dairying and stock-raising are also important, and the recent establishment of large freezing plants has encouraged the growing of small fruits and vegetables and provided a new export for the Island. Prince Edward Island fishermen secure their share of lobster from the prolific waters of Northumberland Strait and this catch accounts for something like 70 p.c. of the value of the primary fishery production of the province. Groundfish and oysters, the latter mainly from Malpeque Bay, are next in importance. The major manufacturing industries on the Island are based on these agricultural and fisheries resources. There are perhaps 800 sq. miles of productive forested land, the products from which are used locally. Mineral production consists solely of sand, gravel and stone for structural purposes and there is very little hydro power available.

Prince Edward Island had, in 1961, a population of 104,629 , of whom 70,720 were classed as rural residents. Charlottetown, with 18,318 persons, is the only city; seven towns and 17 villages account for the other urban dwellers.

Quebec.-Quebec is the largest province in Canada, its area of 594,860 sq. miles being approximately 15 p.c. of the total area of the country. It includes all that vast region lying north and west of the St. Lawrence River and Gulf as far as the shores of Hudson Strait and Bay and a line running due south of the tip of James Bay for a distance of 300 miles; it is bounded on the southwest by the Ottawa River and on the northeast by the Coast of Labrador. South of the St. Lawrence is a strip of land approximately 30 to 100 miles in width, known as the Eastern Townships and the Gaspe Peninsula, the former adjoining United States territory and the latter the Province of New Brunswick. Fromits southernmost point on the United States boundary to its northernmost point on Hudson Strait the distance is about 1,200 miles.

Because of its geographical position, large area and
 complex physiographic relations, Quebec has a wide variety of climates. In the lower St. Lawrence Valley the frost-free season is fairly long, extending from early May to late September. Summers are warm with hot humid spells and the average temperature in winter is $15^{\circ} \mathrm{F}$. Moving northward and westward, winter temperatures become more extreme and the summers generally cooler while in the far north the highlands are bitterly cold in winter and practically summerless.

Physiographically, Quebec has three regions. The Canadian Shield occupies the greater part of the area north of the St. Lawrence. These plateau-like highlands, made up of a great mass of very ancient and mainly very hard rocks, present a rough, broken surface strewn with lakes and varying in height from 1,000 to 3,000 feet above sea level, with a few higher peaks. The height of land is in the north-centre of the province and over its broken southern rim tumble the many great rivers tributary to the St. Lawrence. The Appalachian Mountains extend through the area of Quebec south of the St. Lawrence, reaching their greatest width in the Eastern Townships and their greatest heights in the Gaspe Peninsula where the Shickshock Mountains have many summits over 3,500 feet; Mount Jacques Cartier, the highest mountain in Quebec, rises to 4,160 feet. The smallest region of the province is the St. Lawrence Lowlands, a triangular area bounded by the edge of the Canadian Shield on the northwest, the Great Champlain Fault bordering the Appalachian Highlands to the east and the Adirondack Mountains in the United States to the south. This is a low, flat region covered by deep clay deposited when the area was invaded by the Champlain Sea after the melting of Pleistocene ice. It is this fertile agricultural area that provided the basis of the economy of the province. It is here that
the mainly rural people for generations gained their livelihood from the land and it is here that industry became established and prospered, making Quebec the second largest industrial province of Canada. In 1961, of the $5,259,211$ people residing in Quebec, 75 p.c. lived in the St. Lawrence Lowlands and the Eastern Townships; 3,906,404 persons were classed as urban dwellers. Although now far out-ranked by manufacturing as an employer of labour, agriculture is still a fundamental way of life and the production of animal feed crops, potatoes, market garden produce, fluid milk, cheese, hogs, tobacco and maple products is important to the large consumer market.

The great Canadian Shield area, which was long considered an inaccessible wasteland, has become the keystone of industry in Quebec. Its vast forest resources were the first to be utilized and the province is now Canada's major producer of pulp and paper; its paper output amounts to about 45 p.c. of the country's total and the value of its sawmill products is higher than that of any other province except British Columbia. The many rivers rushing down to the St. Lawrence from the edge of the Shield and the St. Lawrence River itself have made Quebec the richest province in terms of water power resources, having more than 30 p.c. of the total recorded for Canada, and its present installation of hydro power represents close to half of the Canadian total. The availability of large quantities of cheap hydro power has encouraged the development of large industrial plants in the Quebec hinterland, notable among them being the huge aluminum smelting and refining plants at Arvida on the Saguenay River and at Baie Comeau at the mouth of the Manicouagan River. The Shield's mineral potential is well known. Quebec has long been a major producer of copper, gold and zinc from the Noranda-Val d'Or area south and east of James Bay and more recently of copper and gold from the Chibougamau area farther east. Copper mineralization has also been discovered in other areas of central Quebec and a number of development programs-have been started. Rapid progress has been made in the development of the huge deposits of hematite and other iron ores on the Quebec-Labrador boundary which are now being transported by rail to the ports of Sept Iles and Port Cartier at the rate of $10,000,000$ tons annually. At Allard Lake about 150 miles east of Sept Iles and fairly close to the coast, large deposits of ilmenite, an ore of titanium and iron, are being mined. Of current interest is a large asbestos orebody recently discovered in the Ungava district, near Deception Bay off Hudson Strait, which is now undergoing detailed engineering and feasibility studies. The Appalachian Highlands also contain minerals which are a valuable source of wealth. Twelve mines in the Eastern Townships account for 90 p.c. of Canada's large output of asbestos, and copper is mined at Murdochville in the Gaspe Peninsula and is in evidence in the Sherbrooke area of the Eastern Townships.

Quebec has experienced great industrial expansion in the past decade and a half, much of it based directly on its own resources, although there are many highly developed industries the raw materials for which are not indigenous to the province, such as the textile and clothing industries, the petrochemical industries and the aluminum smelting industry; Quebec's manufacturing output represents about 30 p.c. of the total for Canada. Montreal, the province's largest city, is also the largest city in Canada and one of the great industrial, commercial and financial centres of the Continent-the metropolitan area had a population of $2,109,509$ in 1961. Quebec, the capital of the province, had 171,979 residents and Sherbrooke, the third largest city, 66,554 residents.

Ontario.-Ontario has an area of 412,582 sq. miles and lies between Quebec on the east and Manitoba on the west. Although usually regarded as an inland province, its southern boundary has a freshwater shoreline of 2,362 miles on the Great Lakes and its northern limits have a saltwater shoreline of 680 miles on Hudson and James Bays.

Geologically, Ontario belongs to two major regions-the rough Canadian Shield in the north and the gentler lowlands of the Great Lakes-St. Lawrence region. Northward from the Great Lakes and westward to the Manitoba boundary are approximately 300,000 sq. miles of typically Canadian Shield terrain-a rugged, rocky plateau, mostly 1,500 feet above sea level, strewn with lakes and muskeg-a difficult surface over which ground
transportation routes have been constructed only with the greatest effort. Although railways have crossed this area for more than half a century, it is only with the recent completion of the TransCanada Highway that it has been possible to cross it by motor vehicle. The highest point in Ontario is 2,120 feet, on the promontory on the northeastern corner of Lake Superior. From the height of land, which lies in a wide crescent north of Lake Superior, extending westward to the Lake of the Woods and eastward to Kirkland Lake, the slope descends very gently to James and Hudson Bays where a large marginal strip (the Hudson Bay Lowlands) is less than 500 feet above sea level. This northern area bears the brunt of severe winter cold waves moving eastward from the prairies or southward from the Arctic
 across Hudson Bay with little or no modification, and thus experiences very cold winters. Although summers are warm they are short. In the districts immediately along the north shores of the Great Lakes and west of the Lakes there are frost-free periods in excess of 100 days but elsewhere seasons free from frost range from 40 to 100 days.

The lowlands region, which extends over the whole of the southern peninsula between Lakes Ontario, Erie and Huron, and eastward to the Ottawa River adjoining the lowlands of Quebec, is about one sixth the size of northern Ontario. Common to this region are such glacial features as rock plains, morainic hills, till plains, clay plains, drumlins and sand plains. The southwestern tip of the province extends farther south than any other part of Canada. This fact, combined with the ameliorating influence of the lower Great Lakes, gives peninsular Ontario a much milder climate than that of the northern districts. Since it lies in one of the major storm tracks of the Continent, wide variations occur in day-to-day weather, especially in winter, but conditions of severe cold or excessive warmth are not prolonged.

This lowlands area of Ontario is the most densely populated and highly industrialized area of Canada. The population of the province numbered $6,236,092$ in 1961, approximately 35 p.c. of the total population of the country, and of that number 5,347,205 lived in the peninsular area. Favourable climatic conditions, fertile soil, ease of travel over relatively unobstructed terrain as well as over the natural transportation routes of the St. Lawrence River and the Great Lakes influenced the populating of this area. Agriculture became well established and continues to be of major importance to the economy of the province. In fact, with the exception of the great wheat-growing areas of the west, it is by far the most highly productive agricultural area in the country. Its produce is very diversified and many specialized areas have developed-fruit in the Niagara district,
tobacco in the counties adjacent to Lake Erie, commercial vegetables north of Toronto and cattle in the Georgian Bay area. However, important as agriculture may still be, the early colonial settlements along the waterways and in the interior of this area have grown rapidly and have become highly industrialized. It may be said that the industries of southern Ontario produce almost every type of product required by the consuming public and the area is now one of the great industrial agglomerations in the world. The focal point of this industrial area is the city of Toronto which is the second largest city in Canada and a major manufacturing, financial, commercial and distribution centre. In 1961, it had, with its environs, a population of $1,824,481$ and the nearby metropolitan area of Hamilton, whose basic industry is steel, had a population of 395,189 .

Although the northern regions of Ontario are thinly inhabited and support only 14 p.c. of the population, their contribution to the industrial output of the province is large. The Ontario portion of the Canadian Shield has long been a producer of many base metals and accounts for close to 40 p.c. of the total mineral output of Canada. About 85 p.c. of Canada's tremendous output of nickel and about half the copper come from the Sudbury area, close to 60 p.c. of the production of gold comes from the Kirkland Lake-Porcupine area and from the Red Lake, Pickle Crow and Little Long Lake areas farther west and about a quarter of the iron ore from the Steep Rock Lake area west of Lake Superior and the Michipicoten area on the northeastern shore of the Lake. Most of the uranium production now comes from the Blind River area north of Lake Huron and Bancroft east of Georgian Bay. The Lowlands area of the province produces quantities of industrial minerals such as salt, asbestos and nepheline syenite and has some natural gas and petroleum output. Production of structural materials such as cement, sand and gravel and stone, which is dependent on construction activity, has been exceptionally high in recent years.

Ontario has about 262,000 sq. miles of forested land which supports a thriving pulp and paper industry. The province produces close to 30 p.c. of the paper output of the country; lumber and other sawmill products are of lesser importance. Ontario follows Quebec and British Columbia in magnitude of water power resources and is second to Quebec in installed hydro-electric capacity. The largest power development, having a capacity of $2,521,000 \mathrm{hp}$., is located on the Niagara River. Recently, the development of water power sites in the province has progressed at a formidable rate and most of those remaining undeveloped are located in areas relatively distant from power markets, so that the province is now increasing its emphasis on thermal power development.

Manitoba.-Manitoba is the most central of Canada's provinces and is the most easterly of what are known as the three Prairie Provinces although by far the largest part of its 251,000 sq. miles is within the Canadian Shield. The province is thus divided into two distinctly topographic forms, the demarcation line beginning close to the southeast boundary and running diagonally northwest through Lake Winnipeg to the Saskatchewan border, at a point a little beyond the 55th parallel of latitude. The larger northern area, with the exception of the lowland south of Hudson Bay, is typically Shield with heavily glaciated topography and deranged drainage, its major rivers, the Churchill and the Nelson, flowing into Hudson Bay. The southwestern portion is the first and lowest of three broad step-like formations across the northern portion of the great central plains of the Continent. It has an elevation of from 600 to 700 feet and is floored by deep fertile clay soils left by glacial lakes that once covered the area. It is separated from the Saskatchewan Plain, the second plain formation, along its western boundary by the Manitoba Escarpment, a narrow belt of hilly terrain with elevations of from 1,600 to 2,727 feet. The highest points are Duck, Porcupine and Riding Mountains with elevations of 2,727, 2700, and 2,000 feet, respectively.

Manitoba, in common with the other Prairie Provinces, has a continental climate. Summers are normally warm and winters long and intensely cold. Consequently, there is a wide range between the temperatures of the warmest and the coldest months, running at about $70^{\circ}$ in southern Manitoba. The growing season in the agricultural area to the southwest extends from late May to mid-September, with a frost-free period of about 100 days. In the Duck and Riding Mountains the frost-free period is under 100 days and in

the extreme north from 60 to 90 days. Manitoba is the most favoured of the Prairie Provinces in amount of rainfall, which averages 22 inches a year in the inter-lake section and comes during the crop season when it can be best utilized.

Manitoba's economy has been built on its agricultural resources. Nearly 80 p.c. of its population lives in the arable area south of Lake Winnipeg and Lake Manitoba and within 100 miles of the southern boundary of the province; 36 p.c. are classed as rural dwellers. Wheat and other grain crops are of major importance but mixed farming operations with emphasis on livestock are more prevalent here than in the other Prairie Provinces. The lowland area also has some mineral deposits and yields moderate amounts of crude petroleum, salt, peat moss and gypsum, but it is the great northern area with its Precambrian rocks that contains most of the mineral wealth of the province. Noteworthy is the production from the large copper-zinc deposits at Flin Flon on the ManitobaSaskatchewan border, from the nickel-copper deposits at Lynn Lake 150 miles farther north, and from the new nickel development at Thompson in the central north, which came into production in mid-1961.

Manitoba has the greatest water power potential of the three Prairie Provinces. The heavily populated southern region is well supplied from hydro installations on the Winnipeg River and the northern resources are being developed gradually as demand for power increases in the mining areas. The northern areas also are well forested but much of the productive forest land is remote so that the forest industries, though important, are not highly developed. There are three moderate-sized pulp and paper mills in the province and several paper-converting establishments. In addition, Manitoba has valuable fisheries resources. The profusion of lakes and streams, particularly Lake Winnipeg, produces many varieties of commercial fish which are in demand on the United States market.

Winnipeg, Manitoba's capital and largest city, is the fourth largest in Canada, having, with its environs, a population of 475,989 in 1961 . In the mid- 1800 's this city, situated at the confluence of the Red and Assiniboine Rivers, was the hub of traffic which converged on it from the east and fanned out westward. Its industries developed around its agricultural resources and its importance as a railway and distribution centre and today,
although it has a wide diversity of manufacturing products, the food processing industries remain in first place and railway rolling-stock and other metal-using establishments rank high among its industries. Outside the metropolitan area of Winnipeg the province has only two cities, with populations of 12,000 and 28,000 , both of which are in the southern area. In the north, Churchill, at the end of rail on Hudson Bay, is a deepsea port from which some wheat is shipped across the Atlantic; Fort Churchill, close by, is perhaps most noted as a military station and a base for Arctic research and has a larger but transient population.

Saskatchewan.-Saskatchewan has an area of 251,700 sq. miles, approximately the same as that of Manitoba. The demarcation line between the lowlands to the south and the Canadian Shield, which crosses into Saskatchewan about the 55th parallel, continues northwest across the province although it becomes less sharply defined. Thus the southern two thirds is prairie lowland. The second step of the prairie formation stretches westward from the Manitoba Escarpment at an average altitude of 2,000 feet, its surface, covered with deep fertile soil, being exceptionally flat in some areas but elsewhere hummocky with innumerable sloughs. Another great scarp occurs about 200 miles to the west, a continuation of the Missouri Coteau which is well-marked south of the border, and west of this extends the highest of the prairie steps with an altitude of from 3,000 to 4,300 feet; in the south the Cypress Hills rise above this level. Cutting across the centre of the lowland area are the great arms of the Saskatchewan River which flow from the Rocky Mountains to Lake Winnipeg.

This prairie lowland is the great grain-producing region of Canada. Throughout most of it the growing season ranges from 80 to 100 days and the average amount of sunshine is particularly high. On the other hand, precipitation amounts to less than 20 inches a year and the area is subject to violent storms, sometimes constituting hazards to the farmer. Saskatchewan nevertheless produces about two thirds of the wheat grown in the country as well as very substantial quantities of oats and other grains. Mixed farming, with emphasis on livestock, is more prevalent in the more northerly settled areas.

Approximately half the net value of production of the province is contributed by agriculture and upon agriculture are based the main manufacturing industries. However, the most important industry in point of value is petroleum refining. The southern plains of this province produce about a quarter of Canada's crude petroleum, moderate amounts of natural gas and large quantities of coal, salt and sodium sulphate, but the greatest mineral wealth in this area will come from what is believed to be the world's largest highgrade deposit of potash which occurs at depths of from 2,800 to 3,500 feet under a large part of southern Saskatchewan. The first shipments from this deposit, which was under development for several years, were made in 1959; shipments then ceased because of production problems but resumed on a continuing basis in 1962. Metal production includes substantial quantities of copper and zinc from the Flin Flon mines straddling the Manitoba-Saskatchewan boundary in the north, which also yield moderate amounts of gold, silver, cadmium, selenium and tellurium. But in recent years the most important of the province's metals in value is the uranium taken from the large vein-type deposits on the north shore of Lake Athabasca, close to the Northwest Territories boundary.

The forests of Saskatchewan are mainly in the northern half of the province and, while they cover an area of $118,000 \mathrm{sq}$. miles, only $41,000 \mathrm{sq}$. miles are considered productive. Lumber output therefore is light and one mill contributes to Canada's production of pulp and paper. Existing hydro-electric plants are also located in the northern areas and their output is used almost exclusively for mining purposes. The major part of the province's power requirements is supplied by thermal-electric plants fuelled with coal, oil and natural gas.

Saskatchewan had a population of 925,181 in 1961 of whom 57 p.c. were rural dwellers. The urban centres, of which Regina and Saskatoon are the largest, are well dispersed over the prairie lands and serve mainly as distributing centres for their surrounding areas. Regina, the capital, in 1961 had a population of 112,141 and Saskatoon 95,526.

Alberta.-Most of Alberta's 255,285 sq. miles lie in the interior plains region. The southern part is dry, treeless prairie changing toward the north into a zone of poplar interspersed with open prairie and giving way to mixed forests.

The boundary of the province follows the 49th parallel as does that of Saskatchewan and Manitoba, but only for a distance of about 180 miles before it strikes northwestward following the ridge of the Rocky Mountains to a point close to the 55th parallel and then turns directly north. From the Saskatchewan border in the southern area the plain rises gradually from about 2,500 feet above sea level to nearly 4,000 feet as it merges into the foothills of the Rocky Mountains. This foothill area is part of the Western Cordilleran Region. The Alberta Rockies have numerous peaks of from 10,000 to 12,294 feet, all of them close to or on the British Columbia boundary.

The southern half of the province is subject in winter to cold dry air masses of continental polar air, moderated from time to time by the Chinook winds. Summers are warm with abundant sunshine but rainfall is meagre, particularly in the southwest, and is extremely variable with periodic droughts. In areas where precipitation is more precarious, large irrigation projects have been developed, taking their water supply from the rivers rising in the mountains to the west. There are altogether over half a million acres of irrigated land in Alberta.

Thus, while the prairie wheat-growing belt extends into central Alberta and this province is the second largest producer of wheat in Canada, its agricultural output is quite diversified. Cattle-raising is more important here than elsewhere on the prairies and is highly developed in the Rocky Mountain foothills, in the Cypress Hills area of the southeast and in the northern prairie region. Feed crops, vegetables and root crops are grown in the irrigated areas. It is noteworthy that permanent agricultural settlement reaches its farthest northern point in Canada in the Peace River Valley of northwestern Alberta. Although the frost-free period in this area is only about 80 days, crops are able to mature because of the long hours of daylight during the growing season.

The prairies of Canada are underlain by fuel-bearing rocks but it is in Alberta that they have become particularly productive. Coal has long been mined in many areas but while these resources continue to be productive, they are becoming less important with the development of the huge oil and gas resources of the central interior. The production from these oil and gas fields has changed the economy of this province in the past 15 years and contributed immeasurably to its activity and growth. Agriculture-based products still rank high among its manufactures but the recent emphasis has been on manufactures connected with the oil and gas industries. Industrial chemicals have made striking gains as have structural materials, the latter in consequence of the tremendous construction that has taken place in the province and elsewhere. Alberta's forests also contribute to its manufacturing output. The province has $52,569,000,000 \mathrm{cu}$. feet of accessible standing timber, almost equal to that of Quebec. The foothills of the Rockies are particularly heavily forested but lumbering is not as yet highly developed. Water power resources exist in the northern areas but are somewhat remote and present demand for electric power is supplied mainly by thermal plants.

The population of Alberta, which numbered $1,331,944$ in 1961, is concentrated in the central southern portion. The metropolitan areas of Edmonton and Calgary, both situated in the oil and gas producing areas, had populations of 337,568 and 279,062 , respectively, and thus contained between them 73 p.c. of the urban population of the province. About 37 p.c. of the total population is classed as rural.

British Columbia.-British Columbia, Canada's third largest and most westerly province, has an area of 366,255 sq. miles. It consists almost completely of a portion of the great Cordilleran system of mountains that border the Pacific Coast of South, Central and North America. Only in the northeastern corner does the interior plain region intrude. This mountainous area is made up of three parallel ranges resulting in a set of parallel linear valleys, and each range has distinctive traits.

The Rocky Mountains form the eastern frontier of the Cordillera. They present a continuous range of high wall-like ridges, cut up by glaciation into sharp peaks, knifelike edges and deep hollows, a range averaging 50 miles in width in the south and 25 miles in the north. Some of the highest peaks and most beautiful scenery on the Continent are to be found in the Canadian Rockies-dazzlingly white crests topping iron-grey or yellowred reaches of bare rock, huge screes below them with salients of dark-green forest pushing up between, narrow forested benches and deep gorges or blue-green lakes at the bottom. Many of the peaks rise to 10,000 feet or more, the highest in British Columbia being Mount Robson with an elevation of 12,972 feet. The Rockies are traversed by few passes, the most noted being Yellowhead (3,700 feet), Kicking Horse ( 5,388 feet) and Crowsnest ( 4,459 feet).

The central section is marked off from the eastern for most of its length by a sharp topographical break known as the Rocky Mountain Trench which contains the headwaters of the Kootenay, Columbia, Fraser, Peace and Liard Rivers and is one of the most remarkable of its kind. It is about 2,500 feet above sea level and averages from two to 10 miles in width for a distance of over 1,000 miles. Westward the character of the land changes considerably. On the whole, relief is lower and broader and the effects of glaciation are not as spectacular. This section consists of several ranges. Between the Cassiar Mountains in the far north and the Skeena Mountains lies the small Stikine plateau and south of the Skeena-Hazelton Ranges there opens out a wide plateau-like upland which sinks in the central part of the province to the lowlands of the Upper Fraser basin. Southward the upland is squeezed out between the Columbia and Cascade Mountains. The Columbias are a series of rather blocky massive ranges-the Cariboo, Purcell, Selkirk and Monashee Mountains-with deep troughs between in which lie the Kootenay and Arrow Lakes.

The western section consists of a triple structure made up of the Coast Range, the Inner Passage and an outer island arc. The Coast Range begins in the St. Elias Mountains of Yukon Territory. Here the loftiest peaks on the Continent, with elevations of from 18,000 to 20,000 feet, thrust up out of glistening icefields. The highest peak in British Columbia is Mount Waddington, 13,260 feet. Southward, the steep slopes of the coastal mountains are clothed with dense green forests contrasting with the steely blue of the deep fiords that pierce the shoreline. The waterways adjacent to the coast--the Georgia, Queen Charlotte and Hecate Straits-comprise the Inner Passage. This is one of the finest natural waterways in the world and provides a relatively sheltered and safe sea route from Vancouver to Alaska. The outer island arc is made up of outlying ridges that have become partially submerged under the sea, forming hilly or mountainous islands of which the Vancouver and the Queen Charlotte group are the most important, Vancouver Island has an area of 12,408 sq. miles, its surface rising steeply from a rocky coastline to heights of 7,200 feet. The Queen Charlotte mountains are lower, with individual ranges separated by deep, narrow valleys.

The climate of British Columbia is as varied as its topography, ranging from nearMediterranean in the southwestern corner to tundra on the mountain tops. As a result of the prevailing westerly winds and the warm waters of the Pacific, the main climatic characteristics of the coastal area are mild winters, warm but not hot summers and a small range of temperature. The longest average frost-free season in Canada occurs in these areas. Inland, continentality of weather increases toward the east, with much greater ranges of temperatures and much less rainfall. In fact, in some of the plateau areas of the interior almost arid conditions occur. In the northern half of the province, the whole area is characterized by long cold winters and short cool ${ }^{2}$ summers with only moderate precipitation.

British Columbia's economy is based primarily on its great forest resources. The mild climate and heavy rainfall of the coastal area encourage luxuriant growth, giving this province by far the greatest amount of accessible standing timber in Canada-estimated at over $320,000,000,000 \mathrm{cu}$. feet. Thus it holds the dominant position among the provinces in the production of wood products; indeed, four of its five leading manufacturing industries
are based on forest resour-ces-sawmills, pulp and paper mills, veneer and plywood mills and sash and door and planing mills.

The mineral resources of the province are quite diversified. The south-central area has long been famous for its large base-metal mines from which comes the country's major output of zinc and lead as well as quantities of gold, silver, antimony, cadmium, bismuth, tin, indium and tungsten. Base-metal mines also exist in the northwest and iron mines on the east coast of Vancouver Island and across the Strait on the mainland. Gypsum and barite are mined in the southcentral interior, asbestos in the northern interior and coal in several areas along the
 eastern boundary. The most recent mineral development in the province has taken place in the Peace River district close to the Alberta boundary from which area natural gas and oil are now being shipped by pipeline to Vancouver refineries. Petroleum refining has become the province's third largest industry, using mainly crude from Alberta's wells.

The prolific waters of the Pacific provide British Columbia's fishermen with large and valuable harvests. The salmon fishery is the most important, although catches of herring are heavy. Halibut, third in importance, is taken mainly farther north. Since three quarters of the annual catch of salmon is canned and herring reaches the market in the form of oil and meal, fish processing is a major industry. Most of the halibut is sent frozen to the United States market.

British Columbia ranks third among the provinces in value of manufacturing production. Its hydro-power potential is the second greatest in Canada and its installed capacity is exceeded only by those of Ontario and Quebec. This availability of power is being instrumental in diversifying the industries of the province and in promoting the establishment of such power-using industries as the large aluminum smelting facilities at Kitimat on the northeast coast and the great smelters at Trail on the southern border.

Less than 2 p.c. of the land area of British Columbia is classed as occupied agricultural land and this occurs in the southern part of Vancouver Island and in the river valleys and plateau areas of the south-central mainland. Thus, although agriculture is not of major significance to the province as a whole, it is of considerable importance in these areas. The Okanagan Valley is world famous for its fruit and the interior plateaus, especially the Cariboo region, for beef cattle. The other farming areas produce mixed crops but specialize in small fruits, vegetables and horticultural products. It is in this arable portion that the greater part of British Columbia's population exists. Of its $1,629,082$ residents in 1961, $1,113,414$ lived in 0.5 p.c. of the total area, in the southwest corner, and 85 p.c. lived across the south, within about a hundred miles of the United States boundary. Vancouver with its environs had a population of 790,165 ; it is the third largest city in Canada and is a rapidly growing industrial complex. Victoria, the capital of the province, located on the southern tip of Vancouver Island, had a population of 154,152.

Yukon Territory.-North and slightly west of British Columbia lies Yukon Territory, a 207,076-sq. mile triangular area of plateaus and mountain ranges, cut off from the Pacific by the Coast and St. Elias Mountains, bounded on the northeast by the Northwest Territories and on the west by the United States State of Alaska, its only seacoast extending for a hundred miles along the Arctic Ocean west of the Mackenzie River delta. Between the Coast Range on the west and the Mackenzie Mountains Range on the east lies a plateau of rough, irregularly rolling upland having an average elevation of 4,000 feet but with higher areas. Cutting through mountains and plateaus are numerous river valleys. The highest points are in the southwestern corner where many peaks of the St. Elias Mountains reach heights of over 10,000 feet. Mount Logan, the highest in Canada, has an elevation of 19,850 feet.

The whole region is north of latitude $60^{\circ}$ and part is beyond the Arctic Circle. In winter, even in the south, the days are short with no effective sunshine but in summer long hours of daylight promote rapid growth where suitable soil is available. Although the area is subject to wide variations in temperature, winters are remarkably mild and periods of intense cold are of short duration.

The major production of this area comes from its mines in the west-central regiongold in the Dawson area and silver, lead, zinc and cadmium in the Mayo district. Nickel and copper are known to exist at Kluane Lake and in the Pelly Mountains, and large iron ore deposits recently discovered in the Snake River area not far from the potentially oil-and-gas-rich Peel Plateau make the Yukon a potentially rich territory. The construction of the Alaska Highway across the southern part of the Territory and its later northward extension now provides a transport route through the central region linked with British Columbia and Alberta distribution centres.

The Yukon is fairly well forested in the valleys of the mountainous areas but cutting is for local use only. There are extensive water power resources on the Yukon River and several small installations are of particular importance in the development of the mining areas.

The population of the Yukon numbered 14,628 in 1961, 5,031 of them living in Whitehorse, the main urban centre, 881 in Dawson and 342 in Mayo.

Northwest Territories.-The Northwest Territories comprise all Canadian territory north of the 60th parallel of latitude with the exception of Yukon Territory and the northwestern tip of Quebec, an area of $1,304,903 \mathrm{sq}$. miles. Politically, the Territories are divided into three Districts-the Mackenzie District, which includes all the mainland from the Mackenzie River valley on the west to a north-south line following the boundary line between Saskatchewan and Manitoba; the Keewatin District, including the remainder of the mainland and the islands at the mouth of Hudson Bay; and the District of Franklin, including all the Arctic Islands north of the mainland. This vast area, which is more than one third of the total area of Canada, is one of contrast and extremes in topographical characteristics, flora and fauna, and climate. East of the mountain fringe along the Yukon Territory boundary, the mainland portion consists of plains, high in the west and sloping gently to Hudson Bay on the east and to the Arctic Archipelago on the northeast. In the Archipelago, a high mountain range lies in a general north-south direction across Baffin, Devon and Ellesmere Islands with peaks rising above 9,000 feet.

The Interior Plains of the central Continent extend northeastward through the Northwest Territories to the Arctic Ocean and beyond throughout the western islands of the Archipelago with scattered remnants eastward. Across the whole of the low-lying mainland area flows the great Mackenzie River, draining Great Slave Lake and emptying into the Arctic Ocean, a distance of 2,635 miles. The northern limit of tree growth follows a line running from the mouth of the Mackenzie River diagonally southeast to Hudson Bay in northern Manitoba so that the whole northeastern portion of the mainland is treeless tundra studded with countless lakes, swamps and muskeg and having no major drainage system.


Only the southern part of the Mackenzie District lies outside the permafrost area and in this region the summers have about three months with temperatures over $50^{\circ} \mathrm{F}$.; throughout the Mackenzie basin the frost-free period varies from 50 to 100 days. Soil and climatic conditions in some areas are suitable to agricultural pursuits but very light precipitation places a check on such operations. Recently, a Federal Government soil survey being conducted to establish the agricultural possibilities of the northern areas has located a large amount of arable land along a 200 -mile stretch of the Liard River which has added almost a million acres to the total arable land of Canada. This land is best suited for livestock farming with some feed production, although garden crops may also be grown.

On the mainland north of the treeline, freezing temperatures may occur during any month of the year and the winters are long and bitterly cold. On the other hand, the climates of the Archipelago are moderated by the sea so that the extremes are not as severe as they would be in a continental area of the same latitude. Temperatures are generally below zero for six months or more but occasional mild periods occur during the winter, particularly in the western Arctic. Summers are short and cool throughout. The Arctic Archipelago is one of the driest regions in the world and snowfall is light. Much of the ground is swept bare all winter but deep drifts are formed in ravines and in the lee of obstacles.

Although this large area is considered to have great mineral potential, the only production at present includes uranium, radium and gold from the east coast of Great Bear Lake, gold from the Yellowknife area north of Great Slave Lake and a small amount of
oil from the Norman Wells area on the Mackenzie River. In the western Arctic islands active exploration for oil and gas is taking place and recently a large deposit of exceptionally high-grade iron ore has been located on northern Baffin Island.

The fur and fisheries resources of the area are the mainstay of the native populations and are exploited commercially to some extent. Great Slave Lake yields a fair amount of whitefish and lake trout which is sent south in fresh form and about 5 p.c. of the fur pelts taken in Canada come from the Northwest Territories.

In 1961 only 22,998 people lived in this vast area, over 14,000 of them in the Mackenzie River district. Yellowknife on the north shore of Great Slave Lake and Hay River on the south shore had populations of 3,245 and 1,338 , respectively. These are the only centres linked by road with Alberta points to the south. In the Eastern Arctic, the best known centre and focal point for operations in the area is Frobisher Bay. Of the total population, 7,977 were Eskimos, most of them scattered along the mainland coast and the west coast of Baffin Island.

## Subsection 2.-Inland 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 from which tributary rivers tumble over the edge of the Shield. 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, though the largest in area, is the least important economically. Only the Nelson and Churchill Rivers have power potential within economical 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, it is possible for steamboats to navigate 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.-Lengths of Principal Rivers and Their Tributaries


## 3.-Lengths of Principal Rivers and Their Tributaries-concluded

| Drainage Basin and River | Length | Drainage Basin and River | Length |
| :---: | :---: | :---: | :---: |
|  | miles |  | miles |
| Flowing into the Pacific Ocean-concluded |  | Flowing into the Arctic Ocean |  |
| Yukon (mouth to head of Nisutlin)-concluded |  | Mackenzie (to head of Finlay). | 2,635 |
| Yukon (Int. Boundary to head of Nisutlin)- |  | Peace (to head of Finlay). | 1,195 |
|  |  | Finlay............ | 250 |
| Macmillan | 200 | Smoky Little Smoky | 245 |
| White.... | 185 | Parsnip....... | 185 |
| Columbia (total) | 1,150 | Athabasca. | 765 |
| Columbia (in Canada) | 459 | Pembina. | 210 |
| Kootenay (total). | 407 | Liard. | 755 |
| Kootenay (in Canada) | 276 | South Nahanni | 350 |
| Fraser................................ | 850 | Petitot. | 295 |
| Thompson (to head of North Thompson).... | 304 | Fort Nelson | 260 |
| North Thompson........................ | 210 | Hay.......... | 530 |
| Nechako................................. | 287 | Peel (to head of Ogilvie). | 425 |
| Stuart (to head of Driftwood).............. | 258 | Arctic Red | 310 |
| Chilcotin. | 146 | Slave.. | 258 |
| West Road (Blackwater). | 141 | Twitya.... | 200 |
| Skeena.............. Bulkley $^{\text {co..................... }}$ | 360 | Back..... | 605 |
| Stikine........................................... | 335 | Coppermine. | 525 |
| Alsek. | 250 | Anderson. | 430 |
| Nass. | 236 | 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.

## 4.-Elevations, Areas and Depths of the Great Lakes

| Lake | Elevation Above Sea Level | Length | Breadth | $\underset{\text { Depth }}{\text { Maximum }}$ | Total Area | Area on Canadian Side of Boundary |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | ft. | miles | miles | ft. | sq. miles | sq. miles |
| Superior........... | 602.23 | 383 | 160 | 1,302 | 32,483 | 11,524 |
| Michigan (U.S.A.). | 580.77 | 321 | 118 | 923 | 22,400 | - |
| Huron.. | 580.77 | 247 | 101 | 750 | 23,860 | 15,353 |
| St. Clair.. | 575.30 | 26 | 24 | 23 | 432 | 270 |
| Erie.. | 572.40 | 241 | 57 | 210 | 9,889 | 4,912 |
| Ontario.. | 245.88 | 193 | 53 | 774 | 7,313 | 3,849 |

There are no tides in the Great Lakes although there is considerable variation in water levels caused by strong winds.

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 sq. miles, accurately mapped, south and east of Lake Winnipeg, there are 3,000 lakes. In an area of 5,294 sq. miles, accurately mapped, southwest of Reindeer Lake in Saskatchewan, there are 7,500 lakes.

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

Nors.-Areas given are for mean water levels. For those reservoirs and lakes for which two elevations are given, HW means high water and LW low water.

| Province and Lake | Elevation | Area | Province and Lake | Elevation | Area |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | ft. | sq. miles |  | ft. | sq. miles |
| Newfoundland- |  |  | Ontario-concluded |  |  |
| Deer. | 12 | 24 | Mille Lacs, Lac des. | 1,496 | 103 |
| Gander | 86 | 49 | Minnitaki.. | 1,177 | 72 |
| Grand | 270 | 205 | Nipigon. | 852 | 1,870 |
| Melville. | sea level | 1,133 | Nipissing. . . . . . . . . . . . . . . . . . . | 644 | 1,350 |
| Michikamau | 1,650 | 566 | Ontario (total, 7,313) part....... | HW ${ }^{245}$ | 3,849 |
| Red Indian. | 500 700 | 70 15 | Rainy (total, 360) part (reser-\{ voir). | $\begin{array}{ll}\text { HW } & 1,108 \\ \text { LW } & 103\end{array}$ | 291 |
|  |  |  | Red... | 1,157 | 71 |
|  |  |  | St. Clair (total, 432) part. | 574 | 270 |
| Bras d'Or... | tidal | 360 | St. Francis, River St. Lawrence (total, 88) part. | 154 | 25 |
|  |  |  | St. Joseph............................ | 1,218 | 187 |
| New Brunswick- |  |  | Sandy... | 906 | 270 |
| Grand. | tidal | 65 | Seul (reservoir) | 1,170 | 539 |
|  |  |  | Simcoe | 718 | 283 |
| Quebec- |  |  | Stout (Berens River)... | 1,039 | 50 |
| Abitibi (total, 369) part. | 868 | 56 | Sturgeon (English River) ....... | 1,342 | 11100 |
| Albanel................. | HW ${ }^{1,289}$ | 172 | Superior (total, 32,483) part. . . . Timagami.................. | 602 965 | 11,524 91 |
| Baskatong (reservoir).......... | HW 732 <br> 677  | 109 | Timiskaming (total, 121) part. . | $\begin{array}{ll}\text { HW } & 589 \\ \text { LW } & 575\end{array}$ | 55 |
| Bienville. | 1,400 | 392 | Trout (English River)......... | LW $\begin{array}{r}575 \\ 1,294 \\ \\ \hline\end{array}$ |  |
| Burnt (Brâle).................... | HW $\begin{aligned} & 1,590 \\ & 1,185\end{aligned}$ | 56 | Trout (English River)... | 1,294 770 | ${ }_{264}$ |
| Cabonga (reservoir)............ | $\begin{array}{ll}\text { HW } & 1,185 \\ \text { LW } & 169\end{array}$ | 66 | Woods, Lake of the (total, 1,695 ) | 1,060 |  |
| Champlain (total, 360) part. |  | 18 | part (reservoir).................. | 1,060 | 953 |
| Chibougamau.... | 1,253 | 88 | Manitoba- |  |  |
| Clearwater. | 790 790 | 535 260 | Athapapuskow. | 956 | 104 |
| Evans.... | 760 | 180 | Atikameg. | 855 | 112 |
| Goéland | 810 | 125 | Beaverhill. | 651 | 70 |
| Indian House | 890 | 125 | Cedar | 830 | 517 |
| Kaniapiskau. | 1,850 | 210 | Cormorant | 840 | 174 |
| Kempt. | 1,372 | 75 | Cross | 679 853 | 274 |
| Kipawa. | 884 | 125 | Dauphin | 8 | 20 |
| Lower Seal | 860 | 130 | Etawney. | 815 | 64 28 |
| Manicouag | 645 | 110 | Gods... | 585 | 319 |
| Manouane | 1,340 | 110 | Goose. | 922 | 53 |
| Mattagam | 765 | 88 | Granville. | 850 | 181 |
| Minto.. | 450 | 485 | Island.................. | 744 | 550 |
| Mistassini | 1,220 | 840 | Kamuchawie (total, 57) part.... | 1,156 | 31 |
| Nichikun | 1,737 | 150 | Kipahigan (total, 60) part.. | 966 | 29 |
| Olga.. | 785 | 50 | Kiskitto..... | 697 710 | 65 99 |
| Payne | HW 1330 | 230 | Kississing. . | 920 | 99 138 |
| Pipmuacan (reservoir) | $\begin{array}{ll}\text { HW } & 1,305 \\ \text { LW } & 1,275\end{array}$ | 90 | Manitoba.... | 812 | 1,817 |
| Pletipi. | LW 1,660 | 138 | Molson. |  | 154 |
| Quinze, d | HW 867 | 55 | Moose............... | 838 872 | 525 8 |
| St. Francis, River St. Lawrence |  |  | Northern Indian................ | 760 | 150 |
| (total, 88) part............... | 154 | 63 | Nueltin (total, 850) part | 920 | 270 |
| St. John. .......................... | 321 | 414 | Oxford. | 612 | 155 |
| St. Louis. | 69 | 57 | Paint.................... | 615 | 54 |
| St. Pierre (Peter) | 11 | 142 | Pelican (west of Lake Winnipeg- |  |  |
| Simard | 859 | 73 |  | 837 712 | 80 257 |
| Timiskaming (total, 121) pa | HW 5889 | 66 | Playgreen..................... | 712 | 257 |
| Two Mountains. | LW $\quad 575$ | 63 | nipegosis)................... | 862 | 100 |
| Waswanipi... | 830 | 75 | Reed .................... | 911 | 78 |
|  |  |  | Reindeer (total, 2,467) part. | 1,150 | 371 |
| Ontario- |  |  | St. Martin. | 798 | 125 |
| Abitibi (total, 369) part. | 868 | 313 | Sipiwesk | 598 | 201 |
| Dog | 1,380 | 61 | Sisipuk (total, 103) par | 919 | 71 |
| Eagle | 1,192 | 140 | Southern Indian. | 835 | 1,060 |
| Erie (total, 9,889) part. . . . . . . . . | 572 | 4,912 | Stevenson. |  | 75 |
| Huron, including Georgian Bay (total, 23,860) part. | 580 |  | Swan... | 849 845 | 118 |
| Kesagami........... |  | 15,90 | Todatara (total, 241 ) |  | 156 |
| La Croix (total, 55) p | 1,186 | 25 | Walker. | 679 | 62 |
| Long | 1,025 | 75 | Waterhen | 829 | 90 |
| Manitou, Kenora. | 1,215 | 60 | Wekusko. | 840 | 64 |

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 |
| Manitoba-concluded |  |  | British Columbia-concluded |  |  |
| Winnipeg. | 713 | 9,465 | Babine. | 2,332 | 194 |
| Winnipegosis. | 833 | 2,103 | Chilko. | 3,860 | 75 |
| Woods, Lake of the (total, 1,695) |  |  | Eutsuk. | 2,817 | 96 |
| part (reservoir)................ | 1,060 | 69 | François. | 2,345 | 91 |
|  |  |  | Harrison. | 35 | 87 |
| Saskatchewan- |  |  | Kootenay | 1,745 | 168 |
| Amisk.... . . . . . . . . . . . . . . . . . | 964 | 168 | Kotcho. | 1,970 | 31 |
| Athabasca (total, 3,120) part.... | 699 | 2,180 | Lower Arrow | 1,370 | 59 |
| Besnard........................... | 1,278 | 72 | Okanagan... | 1,123 | 136 |
| Black Birch. . . . . . . . . . . . . . . . . | 1,517 | 54 | Ootsa..... | 2,666 | 50 |
| Candle. | 1,621 | 56 | Quesnel | 2,380 | 100 |
| Canoe | 1,415 | 78 | Shuswap. | 1,135 | 120 |
| Churchill. . . . . . . . . . . . . . . . . . . | 1,382 | 213 | Stuart. | 2,230 | 139 |
| Cold (total, 138) part. . . . . . . . . . | 1,756 | 46 | Tagish (total, 130) part | 2,152 | 78 |
| Cree. | 1,570 | 446 | Takla. | 2,260 | 102 |
| Cumberland | 871 | 98 | Teslin (total, 142) part. | 2,239 | 58 |
| Deschambault | 1,072 | 209 | Upper Arrow . . . . . . . . . | 1,401 | 88 |
|  | 1,506 | 248 |  |  |  |
| Ile à la Crosse.................. | 1,380 | 166 | Yukon Territory- |  |  |
| Kamuchawie (total, 57) part.... | 1,156 | 26 | Aishihik.......... | 3,001 | 107 |
| Kipahigan (total, 60) part....... | 1.966 | 31 | Atlin (total, 299) part | 2,192 | 1 |
| La Plonge.......................... | 1,476 | 90 | Kluane. . | 2,525 | 184 |
| La Ronge. . . . . . . . . . . . . . . . . . . . | 1,198 | 552 | Kusawa. | 2,200 | 56 |
| Last Mountain. . . . . . . . . . . . . . . | 1,606 | 89 | Laberge. . . . . . . . . . | 2,100 | 87 |
| Methy Lake (Loche, La)........ | 1,460 | 76 | Tagish (total, 130) part | 2,152 | 52 |
| Montreal....................... | 1,608 | 162 | Teslin (total, 142) part. | 2,239 | 84 |
| Namew (total, 80) part.......... | 1.872 | 72 |  |  |  |
| Nemeiben. | 1,259 | 63 | Northwest Territories- |  |  |
| Peter Pond. . . . . . . . . . . . . . . . | 1,382 | 302 | Aberdeen. | 135 | 475 |
| Primrose (total, 188) part. . . . . . | 1,964 | 180 | Artillery. | 1,190 | 153 |
| Quill............................ | 1,703 | 236 | Aylmer. | 1,230 | 340 |
| Reindeer (total, 2,467) part...... | 1,150 | 2,096 | Baker... | 30 | 975 |
| Riou. . . . . . . . . . . . . . . . . . . . . |  | 75 | Clinton-Colden | 1,230 | 253 |
| Sisipuk (total, 103) part......... | -919 | 32 | Dubawnt | 700 | 1,600 |
| Smoothstone..................... | 1,573 | 110 | Faber. . | 753 | 163 |
| Snake......... . . . . . . . . . . . . . . . | 1,260 | 159 | Franklin | .. | 175 |
| Tazin..... | 1,130 | 156 | Garry... |  | 980 345 |
| Wollaston. | 1,300 | 796 | Gras, de. Great Bea | 1,300 390 | 345 12,275 |
| Alberta- |  |  | Great Slave | 512 | 10,980 |
| Athabasca (total, 3,120) part.... | 699 | 940 | Hardisty | 699 | 107 |
| Beaverhill. . . . . . . . . . . . . . . . . . . | 2,202 | 80 | Hottah. | 640 | 377 |
| Buffalo. | 2,566 | 56 | Kaminuriak | 320 | 360 |
| Calling. . . . . . . . . . . . . . . . . . . . . . | 1,949 | 55 | La Martre. | 870 | 685 |
| Claire............................. | 695 | 545 | Macdougal. |  | 265 |
| Cold (total, 138) part. . . . . . . . . | 1,756 | 92 | MacKay. . | 1,415 | 250 |
| La Biche.... | 1,784 | 94 | Maguse. |  | 540 |
| Lesser Slave. | 1,892 | 461 | Marian. | 513 | 90 |
| Mamawi. | 695 | 64 | Nueltin (total, 850) part | 920 | 580 |
| Peerless. . . . . . . . . . . . . . . . . . . | 2,269 | 75 | Nutarawit............ |  | 350 |
| Primrose (total, 188) part. ...... | 1,964 | 8 | Pelly... | 365 | 331 |
| Sullivan (variable)............... | 2,651 | 62 | Point. | 1,200 | 295 |
| Utikuma. | 2,115 | 85 | Rae | 748 | 74 |
| British Columbia- |  |  | Schultz.... | 125 | 110 160 |
| Adams. . . . . . . . . . . . . . . . . . . . . | 1,334 | 52 | Todatara (total, 241) part. |  | 85 |
| Atlin (total, 299) part. . . . . . . . . . | 2,192 | 298 | Yathkyed.................. | 480 | 860 |

## Subsection 3.-Coastal Waters*

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

## 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.

[^2]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 rivers, ice and wind, and wave action against cliffs and shore banks washes away enormous masses that are deposited over the surrounding sea floor. The topography of the continental sea floor is therefore constantly changing and navigation charts 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 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, an 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 troughs 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 vicinity of the Queen Elizabeth Islands is currently the subject of extensive study. Since 1959 a party
based at the joint 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 islands 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 region between, and offshore from, Meighen Island and Borden Island has received the first detailed study; the work is being extended to the southwest toward Mould Bay on Prince Patrick Island. The investigations should ultimately 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 northern 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 behaviour of 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 lying only four miles and one mile, respectively, from the edge of the declivity. These 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 4.-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 Strait-Lancaster 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 Principal Islands, by Region

| Region and Island | Area | Region and Island | Area |
| :---: | :---: | :---: | :---: |
|  | sq. miles |  | sq. miles |
| Arctic Archipelago- |  | Hudson Bay and Strait-concluded |  |
| Northern Region (Queen Elizabeth |  | Mansel......................... | 1,285 |
| Islands)- |  | Akimiski (James Bay)... | 1,137 |
| Ellesmere.. | 82,119 | Belcher (total for group). | 1,118 |
| Devon.. | 20,861 | Nottingham.......... | 543 |
| Melville.i.... | 16,369 15.779 | Resolution. | 387 312 |
| Bathurst. | 7,609 | Big....... | 310 |
| Prince Patrick | 6,081 | Akpatok (Ungava Bay) | 296 |
| Ellef Ringnes. | 5,139 | Charlton (James Bay). | 119 |
| Cornwallis. | 2,670 | Edgell. | 106 |
| Amund Ringnes. | 2,515 | Killinek. | 104 |
| Mackenzie King. | 1,922 |  |  |
| Borden. | 1,344 | Pacific Coast- |  |
| Cornwall. | 1,292 | Vancouver. | 12,408 |
| Eglinton........ | 551 448 | Queen Charlotte. | 3,705 |
| Lougheed....... | 413 | Graham. | 2,491 |
| Brock.... | 396 | Moresby. | 991 |
| Cameron. | 396 | Louise. | 108 |
| Byam Martin. | 376 | Lyell. | 68 |
| Meighen. | 293 | Princess Royal......... | -68 |
| Graham.... | 258 | Pitt............ | 537 |
| Emerald... | 251 | Banks. | 490 |
| Coburg. | 141 | King..... | 324 |
| Little Cornwallis. | 139 | Porcher. | 199 |
| Baillie Hamilton. | 114 | Nootka.... | 198 |
| Southern Region- |  | Gilford. | 151 |
| Baffin........... | 183,810 | Hawkesbury. | 143 |
| Victoria. | 81,930 | Hunter. | 136 |
| Banks. | 23,230 | Calvert. | 118 |
| Prince of Wales | 12,830 | Texada.. | 117 |
| Somerset. | 9.370 | Swindle. | 109 |
| King William. | 4,955 | Quadra.. | 103 |
| Bylot...... | 4,200 | McCauley | 102 |
| Prince Charles | 3,639 | Gil. | 94 |
| Stefansson. | 2,890 | Roderick. | 88 |
| Air Force. | 596 | Gribbell. | 86 |
| Wales. | 439 |  |  |
| Rowley.. | 436 | Atlantic Coast- |  |
| Vansittart | 386 | Newfoundland- |  |
| Russell. | 349 | Labrador Coast- |  |
| White... | ${ }_{301}$ | South Aulatsivik.. | 167 |
| Bray. | 281 | Okak (total for two | 113 |
| Foley. | 261 | Tunungayualok... | 72 |
| Koch. . | 183 | North Aulatsivik. |  |
| Matty........ | 173 | Island- |  |
| Royal Geographical Society (the larger of two). | 173 | Newfoundland. | 42,734 |
| Jenny Lind.............. | 170 | Now World. | ${ }_{73}^{95}$ |
| Crown Prince Frederic | 170 | New World. | 73 |
| Prescott... | 167 | Gulf of St. Lawrence- |  |
| Loks Land. | 164 | Cape Breton.. | 3,970 |
| Melbourne. <br> Tennent. | 149 | Anticosti..... | 3,043 |
| Gateshead. | 118 86 | Prince Edward . ........... | 2,184 |
|  |  | Magdalen (total for group). <br> Shippegan | 88 59 |
| Hudson Bay and Strait- |  |  |  |
| Southampton.................... | 15,700 | Bay of Fundy- |  |
| Coats............................... | 2,206 | Grand Manan................. | 55 |

## Subsection 5.-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 line of demarcation between political subdivisions. Although their bases technically form part of both areas, they are listed only under one to avoid duplication.

| Province and Height | Elevation | Province and Height | Elevation |
| :---: | :---: | :---: | :---: |
|  | ft. |  | ft. |
| Newfoundland |  | Quebec-concluded |  |
| Long Range- |  | Shield- |  |
| Lewis Hills. | 2,672 | Mount Tremblant. | 3,150 |
| Gros Morne. | 2,644 | Mount Ste. Anne... | 2,625 |
| Mount St. Gregory........................ | 2,251 | Mount Sir Wilfrid. | 2,569 |
| Gros Pâté............................... | 2,152 | Monteregian Hills- | 2,565 |
| Blue Mountain............................. | 2,128 | St. Hilaire Mountain.. | 1,350 |
| Table Mountain......................... | 1,900-1,950 | Yamaska Mountain... | 1,350 |
| Blue Hills of Coteau- |  | Rougemont......... | 1,200 |
| Peter Snout.................................. | 1,600-1,650 | Mount Johnson. | 750 |
| Central Highlands- <br> Main Topsail. | 1,822 | Mount Royal. . | 750 |
| Mizzen Topsail. | 1,761 |  |  |
| Torngats- |  | Ontario |  |
| Cirque Mountain......................... | 5,160 |  |  |
| Mount Cladonia.......................... | 4,725 | Tip Top Hill........... | 2,120 |
| Mount Eliot. | 4,550 | Mount Batchawana.... | 2,100 |
| Mount Tetragona. | 4,500 | Niagara Escarpment- |  |
| Quartzite Mountain. . | 3,930 | Osler Bluff........ | 1,700 1,400 |
| Blow Me Down Mountain. | 3,880 | Caledon Mountain. | 1,400 |
| KaumjetsBishops Mitre. | 4,060 | High Hill... | 1,150 |
| Finger Hill. .............................. | 3,390 | Mount Nemo | 1,000 |
| Nova Scotia |  | Manitoba |  |
| (Spot height-Cape Breton)................ | 1,747 | Duck Mountain. | 2,727 |
| Ingonish Mountain........................ | 1,392 | Porcupine Mountain. | 2,700 |
| Nutby Mountain (Cobequid). | 1,204 | Riding Mountain. | 2,000 |
| Dalhousie Mountain (Cobequid). | 1,115 |  |  |
| North Mountain ( 4 miles NE of West Bay Road) | 875 | Saskatchewan |  |
| Sporting Mountain......................... | 675 | Cypress Hills ${ }^{1}$. | 4,546 |
|  |  | Wood Mountain (West Summit) | 3,371 |
| New Brunswick |  | Wood Mountain (East Summit). | 3,347 |
| New Brunswick |  | Vermilion Hills.. | 2,500 |
| Mount Carleton............................ | 2,690 |  |  |
| Green Mountain. | 1,596 | Alberta |  |
| Moose Mountain. | 1,490 |  |  |
|  |  | Rockies- <br> *Mount Columbis |  |
| Quebec |  | The Twins ( N Peak). | 12,085 |
| Appalachians- |  | Mount Forbes. | 11,902 |
| Mount Jacques Cartier (Shickshocks).... | 4,160 | Mount Alberta | 11,874 |
| Mount Richardson. | 3,885 | *Mount Assiniboine. | $11,870^{2}$ |
| Barn Mountain. | 3,775 | The Twins (S Peak) | 11,675 |
| Mount Logan.............................. | 3,700 | Mount Temple...... | 11,636 |
| Megantic Mountain. | 3,625 | Mount Kitchener | 11,500 |
| Mount Albert. . | 3,550 | *Mount Lyell...... | 11,495 ${ }^{2}$ |
| Bayfield Mountain. | 3,470 | *Mount Hungabee.. | 11,4572 |
| Mattawa Mountain. | 3,370 | Mount Athabasca. | 11,452 |
| Roundtop (Sutton Mountains)............ | 3,175 | *Mount King Edward. | $11,400{ }^{2}$ |
| Hereford Mountain. | 2,760 | Stutfield.. | 11,400 |
| Orford Mountain. | 2,750 | Mount Brazeau. | 11,386 |
| Pinnacle Mountain. | 2,150 | *Mount Victoria. | 11,3652 |
| Brome Mountain. | 1,800 | *The Snow Dome. | 11,340 ${ }^{2}$ |
| Shefford Mountain....................... | 1,725 | *Mount Joffre. | 11,316 ${ }^{2}$ |

[^3]
## 7.-Principal Heights in each Province and Territory-concluded



[^4]
## Section 2.-Geology

North America comprises six main natural regions: the Canadian Shield, a vast area of ancient rocks that is mainly in Canada; the Interior Plains and Lowlands, the largest of which extends throughout the mid-Continent from the Gulf of Mexico to the Arctic Ocean; the Appalachian Region, mainly in the United States but also forming an important part of Eastern Canada; the Cordilleran Region, extending along the entire west coast of the Continent; the Atlantic Coastal Plain along the eastern seaboard of the United States; and the Innuitian Region, a mountainous belt in the Arctic Archipelago. Canada includes parts of four of these regions and all of the Innuitian Region, but none of the Atlantic Coastal Plain.

These natural regions are physiographic as well as geological because the ages, kinds and structures of the underlying rocks determine the natures of the land surfaces and the type and extent of the resources upon which man relies for his livelihood and utilizes for his economic advancement. This aspect is discussed in Subsection 1 of Section 1 dealing with the main physical and economic features of the provinces and territories. Brief sketches of the individual geological regions together with an outline of geological processes are given in the 1961 Year Book at pp. 5-14; this article is summarized in the 1962 edition at pp. 1-5. Further information is supplied by Geology, and Economic Minerals of Canada ( $\$ 2$, including Map 1045A) and Prospecting in Canada; the latter also contains chapters on the principles of geology and on minerals and rocks. The Geological Map of Canada (1045A, 50 cents) and Canada, Principal Mining Areas (900A) are also recommended. Map 900A is revised annually; one copy is sent free to residents of Canada and additional copies are 25 cents each. These publications may be ordered from the Director, Geological Survey of Canada,* together with lists of reports and maps on specific topics and areas, for each province. Other publications are available from provincial mines departments.

## PART II.-LAND RESOURCES AND PUBLIC LANDS

## Section 1.-Land Resources

Information currently available regarding Canada's vast land resources is shown in Table 1, where the land area is classified as occupied agricultural, forested and 'other' land, the latter including urban land, road allowances, grass and brush land and all waste land such as open muskeg, swamp and rock. Soil surveys now under way by the Department of Agriculture will make it possible in the future to estimate the amount of arable land Canada possesses and, as provincial inventories are completed, more information will be available regarding land now non-forested but not productive in an agricultural sense. The Department of Forestry 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.c. is classed as occupied farm land. A great part of the $1,603,821$ sq. miles of 'other' land is located in the Yukon and Northwest Territories which together have a land area of $1,458,784$ sq. miles. The occupied farm land in these Territories is practically nil and the forested area is estimated at 275,800 sq. miles.

[^5]
## 1.-Land Area classified as Occupied Agricultural or Forested, by Province

Nors.-Figures for occupied agricultural land were obtained from the 1961 Census; areas of forested land were compiled by the Department of Forestry from estimates supplied by the Forestry Service in each province.

| Description | New-foundland | Prince Edward Island | Nova Scotia | New <br> Bruns- <br> wick | Quebec | Ontario . | Manitoba | Saskatchewan | Alberta | British Columbia | Yukon and N.W.T. | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | sq. miles | sq. miles | sq. miles | sq. miles | sq. miles | sq. miles | sq. miles | sq. miles | sq. miles | sq. miles | sq. miles | sq. miles |
| Occupled Agricultural Land- Improved-Crops and summerfallow.. | 21 | 615 | 518 | 763 | 8,218 | 12,868 | 17,061 | 64,223 | 36,038 | 1,360 | 1 |  |
| Pasture..................... | 6 | 263 | 199 | 312 | 3,614 | 5,149 | 1,125 | 2,179 | 2,610 | 1,554 | 1 | 16,012 |
| Other...................... | 5 | 28 | 60 | 72 | 456 | 785 | 508 | 970 | 865 | 121 |  | 3,870 |
| Unimproved-Forest (woodland) ${ }^{2} . .$. . | 31 | 463 | 2,130 | 1,923 | .. 7,033 | 5,090 | 2,329 | 3,430 | 3,341 | 1,177 | 2 | 26,949 |
| Other.................... | 22 | 131 | 578 | 367 | $\cdots$ | 5,137 | 7,368 | 29,848 | 30,941 | 3,829 | 9 | 81,094 |
| Totals, Occupied Agricultural Land | 85 | 1,500 | 3,485 | 3,437 | 22,185 | 29,029 | 28,391 | 100,650 | 73,795 | 7,041 | 13 | 269,611 |
|  |  | - |  | " * . .- |  | $\cdots$ |  | . | $\cdots$ |  |  |  |
| Forested Land- |  |  |  |  |  |  |  |  |  |  |  |  |
| Softwood- Merchantable............ | 24,430 | 78 | 7,270 | 6,283 | 119,669 | 44,768 | 14,658 | 10,117 | 13,589 | 80,330 | 35,200 | 356,392 |
| Young growth. | 5,842 | 395 | 789 | 2,884 | 47,980 | 36,958 | 20,417 | 2,735 | 14,775 | 87,786 | 10,000 | 230,561 |
| Mixedwood-Merchantable. | 403 | 133 | 5,458 | 7,277 | 23,932 | 25,002 | 5,456 | 9,011 | 12,430 | , | 19,800 | 108,902 |
| Young growth. | 269 | 145 | 458 | 2,039 | 18,144 | 34,324 | -6,581 | 5,045 | 10,936 | - | 3,500 | 81,441 |
| Hardwood- Merchantable............ | 9 | 13 | 659 | 1,934 | 3,097 | 6,006 | 3,208 | 9,205 | 4,983 | 3,945 | 4,700 | 37,759 |
| Young growth........... | 244 | 11 | 45 | 953 | 5,953 | 17,494 | 4,852 | 1,773 | 13,244 | - 7,953 | 2,500 | 55,022 |
| Unclassified ${ }^{\text {3 }}$ | 2,680 | 37 | 427 | 2,464 | 1,497 | 1,189 | 3,011 | 3,122 | 49,426 | (28,397 | - | 92,250 |
| Totals, Productive Forested Land... | 33,877 | 812 | 15,106 | 23,834 | 220,272 | 165,741 | 58,183 | 41,008 | 119,383 | :208,411 | 75,700 | 962,327 |
| Non-productive Forested Land ${ }^{\text {c }}$. . . . | 53,915 | 122 | 1,283 | 492 | 157,860 | 96,006 | 64,637 | 76,730 | 41,056 | - 59,227 | 200,100 | 751,428 |
| Totals, Forested Land. | 87,792 | 934 | 16,389 | 24,326 | 378,132 | 261,747 | 122,820 | 117,738 | 160,439 | 267,638 | 275,800 | 1,713,755 |
| Net Productive Land ${ }^{5}$. | 33,931 | 1,849 | 16,461 | 25,348 | 235,484 | 189,680 | 84,245 | 138,228 | 189,837 | ' 214,275 | 75,711 | 1,204,989 |
| Other Land ${ }^{6}$. | 55,199 | 213 | 2,658 | 1,995 | 130,576 | 58,406 | 62,893 | 5,224 | 17,907 | 85,777 | 1,182,973 | 1,603,821 |
| Totals, Land Area ${ }^{7} . . . . . . . . . . . . . . . . . . .$. | 143,045 | 2,184 | 20,402 | 27,835 | 523,860 | 344,092 | 211,775 | 220,182 | 248,800 | 359,279 | 1,458,784 | 3,560,238 |

## Section 2.-Federal and Provincial Public Lands

In Table 2 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.
2.-Total Area classified by Tenure (circa) 1962

| Item | Nfld. | P.E.I. | N.S. | N.B. | Que. | Ont. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | sq. miles | sq. miles | sq. miles | sq. miles | sq. miles | sq. miles |
| 1. Privately owned land or land in process of alienation from the Crown. | 6,792 | 2,058 | 16,162 | 15,466 | 43,500 | 46,397 |
| 2. Federal lands other than leased lands, Na tional Parks, Indian reserves and forest experiment stations.. | 157 | 87 | 168 | 618 | 3751 | 1,132 |
| 3. National Parks............................... | 153 | 7 | 367 | 79 | 2 | 12 |
| 4. Indian reserves. | - | 4 | 40 | 60 | 291 | 2,431 |
| 5. Federal forest experiment stations. | - | - | - | 35 | 7 | 41 |
| 6. Provincial lands other than Provincial Parks and provincial forest reserves. | 148,882 | 26 | 4,687 | 10,691 | 476, 396 | 337,583 |
| 7. Provincial Parks.. | 84 | 2 | 1 | , 1 | 67,486 | 5,460 |
| 8. Provincial forest reserves. | 117 | 2 | - | 1,404 | 6,805 | 19,526 |
| Totals. | 156,185 | 2,184 | 21,425 | 28,354 | 594,860 | 412,582 |
|  | Man. | Sask. | Alta. | B.C. | $\begin{gathered} \text { Yukon } \\ \text { and } \\ \text { N.W.T. } \end{gathered}$ | Canada |
|  | sq. miles | sq. miles | sq. miles | sq. miles | sq. miles | sq. miles |
| 1. Privately owned land or land in process of alienation from the Crown. | 46,273 | 104,773 | 95,445 | 19,605 | 80 | 396,551 |
| 2. Federal lands other than leased lands, National Parks, Indian reserves and forest experiment stations. $\qquad$ | 1,219 | 5,035 | 2,941 | 934 | 1,508,264 ${ }^{\text {s }}$ | 1,520,930 |
| 3. National Parks.. | 1,148 | 1,496 | 20,717 ${ }^{4}$ | 1,671 | 3,625 ${ }^{5}$ | 29,275 |
| 4. Indian reserves. | 819 | 1,886 | 2,440 | 1,278 | 10 | 9,259 |
| 5. Federal forest experiment stations. | 0 | - | 23 | - | - | 106 |
| 6. Provincial lands other than Provincial Parks and provincial forest reserves. | 196,174 | 16,764 | 122,163 | 292,511 | - | 1,605,877 |
| 7. Provincial Parks. | 1,638 | 2,255 | 2,289 | 9,964 | - | 89,178 |
| 8. Provincial forest reserves. | 3,729 | 119, 491 | 9,267 | 40,292 | - | 200,633 |
| Totals. | 251,000 | 251,700 | 255,285 | 366,255 | 1,511,979 | 3,851,809 |

${ }^{1}$ 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 a. miles set aside by Order in Council as native game preserves in which only Indian and $\mathrm{F}^{3}$ Includes 952,849 but which are not regarded as National Parks.

4 Includes that part of Wood Buffalo Park in Alberta ( 13,675 sq. miles); this park, although established under the National Parks Act, is administered by the Northern Administration Branch, Department of Northern Affairs and National Resources.
${ }^{5}$ That part of Wood Buffalo Park in N.W.T.
${ }^{6} \mathrm{~A}$ forest experiment area of 25 sq . miles is included in National Parks figure.

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 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 2). 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 80 sq. miles of a total area of $1,511,979$ 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 Northern Administration Branch of the Department of Northern Affairs and National Resources.

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, Saskatchewan 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 126 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 XXVI, under "Lands".)

## Subsection 1.-National Parks

The National Parks of Canada are areas selected for their natural or historic importance which are to be preserved for all time for the "benefit, education and enjoyment of the people of Canada". Through the wisdom of farsighted legislators more than 75 years ago, Canada has today a system of National Parks that compares favourably with that of any other country. Initially, an area of 10 sq . miles around mineral hot springs on Sulphur Mountain in Alberta was reserved "from sale, or settlement or squatting" for the benefit of the nation. Two years later-in 1887-the Rocky Mountain Park Act established the first National Park (now Banff) and, since then, other areas across the country have been so preserved. These protected areas, which now cover more than 29,000 sq. miles, are administered by the National Parks Branch of the Department of Northern Affairs and Natịonal Resources. They are classified as: National Parks-natural wilderness areas set apart for preservation beqause of the national importance of their flora, fauna and geological features; and National Historic Parks and Sites-sites selected as of national significance in the, colourful history of the nation.

Fine specimens of plains and wood bison, prong-horned antelope and whooping crane survive today because of the protection afforded them within National Parks. Although hunting is prohibited, angling is permitted in all the parks under regulation as to seasons, bag limits and licences. Nature trails have been set out in most parks and the interpretation of the natural features of each park is made available to the visitor through Park

Naturalists. Park Wardens, supervised by Park Superintendents, are responsible for the various districts of each park and maintain constant vigilance for the safety of their areas and of visitors. Various types of accommodation are available ranging from primitive campgrounds to luxury hotels. The camping facilities are provided by the Park Service but private accommodations are operated by lessees of such establishments.

National Historic Parks, declared of importance in the history of Canada upon advice of the Historic Sites and Monuments Board of Canada, include military, fur-trade and Mounted Police forts, houses of historic interest, and examples of outstanding earlyCanadian architecture. Some of the buildings and their surroundings have been partially restored and others have been preserved as they were found; many contain museums. In addition, more than 570 sites have been marked by official tablets commemorating historic events in the life of the nation.

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

| Park | Location | Year Established | Area | Characteristics |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  | sq. miles |  |
| National Parks |  |  |  |  |
| Terra Nova............ | On Bonavista Bay, Newfoundland, 205 miles north of St. John's. | 1957 | 153.0 | Maritime area now under development; rocky headlands, wooded areas with abundant wildlife, off-shore and freshwater fishing. Serviced campground and cabin accommodation. |
| Prince Edward Island.. | North shore of Prince Edward Island. | 1937 | 7.0 | Strip 25 miles long on shores of the Gulf of St. Lawrence. Recreational area, fine bathing beaches. Accessible by highway. Hotel and cabin accommodation. Serviced campgrounds. |
| Cape Breton Highlands. | Northern part of Cape Breton Island, N.S. | 1936 | 367.0 | Rugged Atlantic coastline with mountainous background. Fine seascapes. Recreational opportunities. Hotel and cabin accommodation. Serviced campgrounds. |
| Fundy................ | On Bay of Fundy between Moncton and Saint John in New Brunswick. | 1948 | 79.5 | Delightful recreational area. Forested region, wildlife sanctuary, rugged terrain. Cabin accommodation. Serviced campgrounds. |
| Georgian Bay Islands.. | In Georgian Bay, north of Midland, Ont. | 1929 | 5.4 | Recreational and camping area. Unique pillars on Flowerpot Island. Accessible by boat from nearby mainland points. Serviced and unserviced campgrounds on Beausoleil Island. |
| Point Pelee............. | On Lake Erie in southwestern Ontario. | 1918 | 6.0 | Wildlife sanctuary. Remarkable beaches, southern flora. Resting place for migratory birds. Accessible by highway. Serviced campground. |
| St. Lawrence Islands... | In St. Lawrence River between Brockville and Kingston, Ont. | 1914 | $\underset{\text { (acres) }}{260.0}$ | Mainland area and 14 islands among the Thousand Islands. Recreational and camping area. Accessible by highway; by boat from nearby mainland points. |
| Riding Mountain....... | Southwestern Manitoba, west of Lake Winnipeg. | 1929 | 1,148.0 | Wildlife sanctuary on summit of escarpment. Fine lakes. Accessible by highway. Hotel and cabin accommodation. Serviced and unserviced campgrounds. |
| Prince Albert........... | Central Saskatchewan, north of Prince Albert. | 1927 | 1,496.0 | Forested region dotted with lakes and interlaced with streams. Summer recreational area. Accessible by highway. Hotel and cabin accommodation. Serviced and unserviced campgrounds. |

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

| Park | Location | Year Established | Area | Characteristics |
| :---: | :---: | :---: | :---: | :---: |
| National Parksconcluded |  |  | sq. miles |  |
| Banff.................. | Western Alberta, on east slope of Rockies. | 1885 | 2,564.0 | Magnificent scenic area; noted resorts, Banff and Lake Louise. Mineral hot springs: summer and winter sports. Accessible by rail and highway. Hotel and cabin accommodation. Serviced and unserviced campgrounds. |
| Elk Island............. | Central Alberta, near Edmonton. | 1913 | 75.0 | Fenced preserve containing large herd of buffalo; also deer, elk and moose. Popular recreational area. Accessible by highway. Cabin accommodation and serviced campground. |
| Jasper.................. | Western Alberta, on east slope of Rockies. | 1907 | 4,200.0 | Mountainous area and noted wildlife sanctuary. Majestic peaks, icefields, beautiful lakes and famous resort, Jasper. Mineral hot springs, summer and winter sports. Accessible by rail and highway. Hotel and cabin accommodation. Serviced and unserviced campgrounds. |
| Waterton Lakes........ | Southern Alberta, adjoining Glacier Park in Montana, U.S.A. | 1895 | 203.0 | Canadian section, Waterton-Glacier International Peace Park. Mountainous area with spectacular peaks and beautiful lakes. Accessible by highway. Hotel and cabin accommodation. Serviced and unserviced campgrounds. |
| Glacier................. | Southeastern British Columbia, on summit of the Selkirk Range. | 1886 | 521.0 | Superb alpine region, towering peaks, glaciers and forests. Climbing, skiing, camping. Visitor accommodation in development stage. |
| 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 cabin accommodation. Serviced and unserviced campgrounds. |
| Mount Revelstoke...... | Southeastern British Columbia, on west slope of Selkirks. | 1914 | 100.0 | Rolling mountain-top plateau. Colourful alpine meadows. Accessible by secondary highway. Summer accommodation in Park. Championship ski runs and ski jump. Unserviced campgrounds. |
| Yoho.................. | Eastern British Columbia, on west slope of Rockies. | 1886 | 507.0 | Lofty peaks, magnificent waterfalls, colourful lakes. Yoho and Kicking Horse Valleys. Accessible by rail and highway. Hotel and cabin accommodation. Serviced and unserviced campgrounds. |
| Wood Buffalo'......... | Partly in Alberta and partly in Northwest Territories, between Athabasca and Slave Rivers. | 1922 | 17,300.0 | Immense region of forests and open plains. Home of largest remaining herds of plains bison and wood bison on the Continent. Other wildlife abundant. |
| National Historic Parks |  |  | acres |  |
| Signal Hill............. | St. John's, Nfld............ | 1958 | 243.4 | Location of military installations and site of operations and battles in 1762. Cabot Tower. |
| Fort Amherst.......... | Prince Edward Island, near Rocky Point. | 1959 | 222.0 | Remaining earthworks of British fort built after 1758. |

[^6]
## 3.-Location, Year Established, Area and Characteristics of National Parks and National Historic Parks-concluded

| Park | Location | Year <br> Estab- <br> lished | Area | Characteristics |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  | acres |  |
| National Historic Parks-concluded |  |  |  |  |
| Fort Anne.. | Nova Scotia, at Annapolis Royal. | 1917 | 31.0 | Site of French fort first built about 1635, finally captured and occupied by British in 1710. Museum and well-preserved earthworks. |
| Fortress of Louisbourg. | Cape Breton Island, N.S., 25 miles from Sydney. | 1941 | 13,000.0 | Ruins of walled city erected by the French, 1713-58. Interesting excavations. Museum. |
| Halifax Citadel......... | Halifax, N.S............. | 1956 | 36.9 | Defence post constructed in 1820's and in 1850's. Museums. |
| Port Royal............. | Port Royal, N.S., 8 miles from Annapolis Royal. | 1941 | 20.5 | Restoration of "Habitation"-first fort built in 1605 by Champlain and DeMonts. |
| Alexander Graham Bell | Baddeck, N.S............ | 1955 | 14.0 | Museum contains mechanical and documentary records of research by the inventor. |
| Grand Pre............. | Grand Pré, N.S.......... | 1957 | 14.0 | Commemorates the story of the Acadians and the New England Planters. Museum. |
| Fort Beausejour........ | New Brunswick, near Sackville. | 1926 | 81.3 | Site of French fort erected in mid-1700's. Museum. |
| Fort Chambly......... | Chambly, Que............ | 1941 | 2.5 | Original French fort built on Richelieu River in 1665 was burned. Present fort built by English in 1709-11. Museum. |
| Fort Lennox............ | Île aux Noix, Que., near St. Paul. | 1941 | 210.0 | Original fort, ille aux Noix, built by French in 1759. Fort Lennox built by English in 1820's. |
| Sir Wilfrid Laurier's Birthplace. | St. Lin, Que.............. | 1941 | 1.0 | Original house containing furniture of the period. |
| Fort Malden........... | Amherstburg, Ont......... | 1941 | 8.0 | Site of defence post built 1797-99. Museums. |
| Fort Wellington........ | Prescott, Ont.............. | 1941 | 8.5 | Defence post built 1812-13. Museum. |
| Woodside............. | Kitchener, Ont............ | 1954 | 12.0 | Boyhood home of the Rt. Hon. William Lyon Mackenzie King, former Prime Minister of Canada. |
| Fort Prince of Wales... | Northern Manitoba, near Churchill. | 1941 | 50.0 | Ruins of fort built 1733-71 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. |
| Batoche Rectory....... | Saskatchewan, near Duck Lake. | 1954 | 1.3 | Scene of Northwest Rebellion, 1885. Ancient rectory and adjoining Middleton's trenches. Museum. |
| Fort Battleford........ | Saskatchewan, 4 miles south of North Battleford. | 1951 | 36.7 | North West Mounted Police post built in 1876. Museum. |
| Fort Langley........... | Fort Langley, B.C........ | 1958 | 9.0 | Partially restored fort. First permanent British settlement in British Columbia. Museum. |
| Fort Rodd Hill........ | Esquimalt, B.C........... | 1962 | 44.4 | Extensive 19th century stone and concrete coastal fortifications. |

Evidence of the increasing attraction of Canada's National Parks and National Historic Parks is the growing numbers of visitors as shown in Table 4.

## 4.-Visitors to National Parks and National Historic Parks, Years Ended Mar. 31, 1960-63

| Park | 1960 | 1961 | 1962 | 1963 |
| :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. |
| National Parks |  |  |  |  |
| Terra Nova.......... |  | 20,0001 | 29,710 | 29,915 |
| Prince Edward Island. | 224,781 | 412,463 | 775,583 | 1,009,021 |
| Cape Breton Highlands. | 193,684 | 323,392 | 371,686 | 451,911 |
| Fundy........ | 199,777 | 227, 262 | 280,006 | 302,340 |
| Georgian Bay Islands. | 17,630 | 19,657 | 14,230 | 19,126 |
| Point Pelee............ | 745,528 | 545,545 | 485,637 | 667, 554 |
| St. Lawrence Islands. | 53,745 | 61,522 | 86,150 | 75, 239 |
| Riding Mountain.. | ${ }^{659,995}$ | 629,140 | 642,931 | 654,251 |
| Prince Albert..... | 126, 818 | 137,801 | 140,650 | 137,484 |
| Banff. | 980,069 | 1,078,008 | 1,069,623 | 1,374,576 |
| Elk Island | 196,862 | 198,277 | 183,263 | 176,040 |
| Jasper..... | 324,857 | 356,538 | 346,493 | 392,987 |
| Waterton Lakes | 340,220 | 349,496 | 420,865 | 444,752 |
| Glacier. | 347 | 287 | 10,213 | 345, 961 |
| Kootenay....... | 440,031 | 467,555 | 470,562 | 541,485 |
| Mount Revelstoke. | 16,089 | 38,634 | 64,901 | 428,572 |
| Yoho | 70,001 | 65,071 | 99,160 | 375,189 |
| Wood Buffal | .. | .. | .. | .. |
| Totals, National Parks. | 4,600,434 | 4,930,648 | 5,491,663 | 7,426,403 |
| National Historic Parks |  |  |  |  |
| Signal Hill. | 7,130 ${ }^{2}$ | 112,054 | 137,600 |  |
| Fort Amherst. |  |  | 1,452 | 1,764 |
| Fort Anne. ........... | 31,159 | 57,140 | 69,646 | 83, 103 |
| Fortress of Louisbourg | 21,625 190,383 | 23,915 204,677 | 30,036 229,677 | 32,347 243,609 |
| Port Royal. | 198,071 | 19,842 | 20,922 | - 31,579 |
| Alexander Graham Bel | 47,122 | 59,784 | 73,682 | 79,659 |
| Grand Pré. | 38,981 | 34,361 | 47,392 | 47,871 |
| Fort Beausejour. | 21,369 | 31,719 | 43,543 | 51,454 |
| Fort Chambly. | 67,438 | 68,738 | 62,533 | 71,053 |
| Fort Lennox...... $;$. $\ldots$. $\ldots$. | 9,865 | 30,725 | 32,890 | 24,959 |
| Sir Wilirid Laurier's Birthplace | 5,993 | 7,634 | 7,668 | 8,186 |
| Fort Malden.... | 32,132 | 41,558 | 37,334 | 42,254 |
| Fort Wellington | 28,732 | 35,449 | 38,685 | 46,666 |
| Woodside........... | 4,972 | 5,170 | 7,797 | 10,738 |
| Fort Prince of Wales | 647 33,229 | 1,251 | 50.414 | 59,362 |
| Batoche Rectory. | 33,229 | 4, $\mathbf{5}, 896$ | 50,234 15,641 | 59,544 15,350 |
| Fort Battleford. | 15,499 | 28,992 | 27,511 | 30,895 |
| Fort Langley. | 45,870 | 91,627 | 104,961 | 98,560 |
| Fort Rodd Hill. | , | 1,627 | , | 42,533 |
| Totals, National Historic Parks. . | 631,153 | 904,212 | 1,039,618 | 1,262,040 |
| Grand Totals. | 5,231,587 | 5,834,860 | 6,531,281 | 8,688,443 |

${ }^{1}$ Estimated. $\quad 2$ Registrations only.

## 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 84 sq. miles of provincial parkland in Newfoundland. Fifteen rest parks and camping parks and three regional parks are located along the TransCanada Highway, the rest and camping parks containing about 100 acres each and the regional parks averaging about 8 sq. miles in size. Subject to topographical and other conditions favourable to each location, rest parks are spaced 50 miles apart and camping parks are separated by distances of 100 miles. Two larger areas, 42 sq. miles on the west coast known as Serpentine Park and 16 sq. miles in central Newfoundland known as Pitts Pond Park, are undeveloped.

Prince Edward Island.-Eighteen areas totalling 250 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 under development 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 of land under development on the Trout River, is an attractive combination of land, trees and water and is also of historic interest as one of the oldest shipbuilding centres in the province. Several small parks have been developed or are under development. The parks are maintained by the Department of Industry and Natural Resources.

Nova Scotia.-The Department of Lands and Forests of Nova Scotia operates 13 small parks scattered throughout the province, some of which are equipped for camping and picnicking and others for picnicking only. The Department also operates the Provincial Wildlife Park at Shubenacadie, a 30 -acre tract of land maintained in its natural state, as far as is consistent with the need for providing food and protection for the animals and birds that are its main attraction.

A master plan has been prepared of theoretically desirable park locations in the province, taking into consideration the need for roadside facilities, regional picnic parks and camping grounds. Geographic location, population density, volume of traffic and aesthetic features are being evaluated for each site. Roadside table sites, formerly administered by the Department of Highways, are being incorporated into this provincial scheme and will be operated according to provincial park standards. Many of the existing sites will be retained and improved, some will be retained on a temporary basis only and unsuitable sites will be discontinued. The provincial parks program will require about five years of development work for completion.

New Brunswick.-The Department of Lands and Mines operates picnic, campground and beach site parks throughout the province, ranging in size from one to 135 acres. There are 54 of these small parks, most of them adjacent to or accessible from main trunk roads. All sites contain such basic facilities as tables, some form of toilet facility and a potable water supply but in the larger camping grounds and trailer parks the facilities are much more elaborate.

Because of the increasing demands for recreational facilities, the Department is carrying out a program of improvement and expansion of established sites and adding new parks in previously undeveloped areas. There is no entrance fee charged for the use of the smaller parks but at ten of the larger sites a daily camping fee of 50 cents or $\$ 1$ is required.

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

Quebec.-The Province of Quebec has established six provincial parks and 16 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 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, 1,223 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 Deux Montagnes Park, near Oka, 1.5 sq. miles.

Fish and Game Reserves together occupy 41,166 sq. miles.* The Chibougamau Reserve, the Mistassini Reserve and the Assinica Reserve, all northwest of Lake St. John, have areas of $3,400,5,200$ and 3,850 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, 1,000 sq. miles. Adjoining Gaspesian Park in the Gaspe Peninsula, the ChicChocs, Matane and Joffre Reserves have, respectively, 325, 450 and 40 sq. miles. Also in Gaspe Peninsula are the Port Daniel, Rivière St. Jean and Rivière Petite Cascapédia Reserves for salmon and trout fishing, occupying 20, 13 and 300 sq. miles, respectively. Horton Reserve in Rimouski County has an area of 310 sq. miles.

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 Deux Montagnes 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, and Deux Montagnes Park are easily reached in summer by highway from Montreal and are very popular for tent or trailer camping and for swimming and picnicking. Mont Orford has an 18-hole golf course and, in winter, is the rendezvous of Canadian 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, Joffre, Kipawa and James Bay; in the latter only moose are protected.

Ontario.-The provincial parks system in Ontario has been greatly expanded in recent years. There are 81 parks now available for public use and one new park is in process of development. Thirty other areas are reserved for future development. The total area in the Ontario Provincial Parks system is about 5,460 sq. miles.

The four largest provincial parks-Algonquin, Quetico, Lake Superior and Sibleytogether have an area of about 5,200 sq. miles. Algonquin, 180 miles north of Toronto and 105 miles west of Ottawa, has several campgrounds which are accessible by car from Highway 60 and its numerous waterways may be traversed and enjoyed by canoe. There are several commercial children's camps in the Park but the present administration policy is to provide development facilities, such as campgrounds, on the Park fringes and to retain the interior in a natural condition. The interiors of Quetico and Lake Superior Parks are also retained as wilderness areas with only fringe development. Quetico Park is accessible by road 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. There are small charges for entry of automobiles into provincial parks and for overnight camping.

Under the Wilderness Areas Act, which came into effect in 1959, 36 areas have been established. These tracts of land, widely distributed across the province, vary in size,

[^7]character and significance but all are regarded as important for their historical, scientific, aesthetic or cultural values. The largest is a $225-\mathrm{sq}$. mile area of treeless tundra in the northeastern tip of the province, jutting out at the base of Hudson Bay where it meets James Bay. All the other areas are small and none exceeds 640 acres. Perhaps the most widely known is the Sleeping Giant, a geological formation resembling a recumbent man, in Thunder Bay at the Lakehead.

The parklands of Ontario are administered by the Parks Branch of the Department of Lands and Forests, Parliament Buildings, Toronto, from which detailed information in booklet form is available.

Manitoba.-In Manitoba, four large areas of virgin forest totalling 1,638 sq. miles have been set aside as provincial parks. In addition, numerous recreational areas, camp and picnic grounds, and roadside stopping places have been established. These park areas are administered by the Parks Division of the Forest Service.

Saskatchewan.-Saskatchewan has 14 provincial parks with a total area of 2,255 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 camping and picnic facilities. The other parks have trailer sites and camping, picnicking, 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 plentiful and brook and other trout have been stocked in streams and lakes. 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, deer, bear and beaver are common, 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-LaRonge, Nipawin and Meadow Lake-offer wilderness-style canoe routes and 'fly-in' commercially operated fishing and hunting camps. Many roadside picnic grounds are located throughout the province and several excellent Trans-Canada Highway campsites are being developed or are in use.

Sites of historic interest are marked throughout the province and include the Touchwood Hills Hudson's Bay Post, where picnic facilities are available.

Alberta.-In Alberta, 42 provincial parks have been established, with a total area of approximately 140 sq . miles and, of these, 38 are under development. Cypress Hills Provincial Park with an area of 77 sq. miles is the largest and is situated in the southeast portion of the province. Other parks under development 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, 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, Taber, Thunder Lake, The Vermilion, Wabamun Lake, Williamson, Willow Creek, Winagami Lake, Woolford and Writing-on-Stone. These parks are generally provided with picnic, 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 $1,500,000$ tourists and vacationists in 1962.

In addition to the recreational parks, 16 sites have been established to mark and preserve locations of historic interest. They include: Athabasca Landing, Buckingham

House, 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, Standoff, Stephansson and Twelve Foot Davis.

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. These 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 200 provincial parks in British Columbia with a total area of 9,964 sq. miles. These parks are classified as A, B and C. Class A parks are reserved solely for recreational purposes; some are highly developed and others are wilderness areas. Class B parks are set aside primarily for recreation, but regulations permit other natural resource use where this is not in conflict with recreation. Class C parks are administered in detail by a Parks Board of local citizens, under the over-all jurisdiction of the Minister of the Department of Recreation and Conservation. British Columbia parks are in many stages of development and dedicated to a variety of recreational uses. There are immense wilderness areas such as Tweedsmuir Park and Wells Gray Park. Outstanding scenic and mountain reserves include 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 to become the first Provincial Historic Park. Five marine parks with mooring facilities and campsites have been developed on the islands of the Straits of Georgia for the benefit of water-borne recreationalists. The popularity of the province's parks, with their integrated campsites and picnic areas, is attested by the record number of $3,700,000$ visitors during 1962 . Of these, 840,000 were campers and the remainder were day visitors. Records show that Mount Seymour, Cultus Lake and Alouette Lake Parks were the most popular.

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

Ottawa, the city selected by Queen Victoria in 1857 to be the seat of government for the Province of Canada in British North America, was designated the National Capital upon Confederation on July 1, 1867. The community had grown out of the military and construction camp that served as headquarters for the building of the Rideau Canal, a project carried out between 1826 and 1832 to establish a safe navigable waterway between Lake Ontario and the Ottawa River. The building of the Canal was the crowning achievement in the life of a distinguished British military engineer, Lieutenant-Colonel John By, R.E., who gave his name to the new settlement inhabited mainly by stone-masons and discharged soldiers. As time passed, Bytown prospered as a timber centre and was incorporated as a town in 1847. Then, on Dec. 18, 1854, the name of Bytown was changed to Ottawa and under that name the community was incorporated as a city on Jan. 1, 1855.

The city, situated in an area of great natural beauty and surrounded by waterways, has remained a self-governing municipality and, although throughout the years the Federal Government co-operated with the municipal authorities in the development of a system of driveways and parks, the city expanded without the benefit of a comprehensive plan. However, in 1950 a Master Plan was presented to the Government of Canada, designed to guide the development of the Capital's urban area over the following half-century and to protect the beauty of the surrounding National Capital Region. This Region originally covered 900 sq. miles but was increased in 1959 to 1,800 sq. miles-half in the Province of Ontario and half in the Province of Quebec. Although the successful implementation of

[^8]the Plan is dependent upon the co-operation of the cities of Ottawa and Hull-which are treated as a physical, social and economic whole-and of about sixty other autonomous municipalities and the two provincial governments involved, the National Capital Plan is not officially recognized by the Governments of Ontario and Quebec, and the City of Ottawa has as yet no municipal plan to govern its growth and development.

The federal agency responsible for the planning of Canada's Capital is the National Capital Commission, created in 1959 to replace the Federal District Commission which, in turn, was the lineal descendant of the Ottawa Improvement Commission. The National Capital Commission, which reports to Parliament through the Minister of Public Works, is composed of twenty members appointed by the Governor in Council and representing each of Canada's ten provinces. It is headed by a chairman and a general manager and has a personnel of about 650, although this number fluctuates because of the seasonal character of a large part of the work involved. Six committees give advice and direction to the Commission: the Executive Committee consists of the chairman and vice-chairman of the Commission and three other members appointed by the Commission, one of whom is from the Province of Quebec; the Land Committee, composed of several experts in land evaluation, advises the Commission on matters of land purchases and property administration; the Advisory Committee on Design, comprising prominent Canadian architects, town planners and landscape architects, gives advice on the external appearance of government buildings, locations, site plans and landscape designs; the Historical Advisory Committee advises the Commission on matters of preservation, marking and interpretation of buildings and sites having historical significance within the National Capital Region; the Information and Historical Advisory Committee studies and considers the publicity and public relations activities of the Commission, and carries out an extensive program of historical research and preservation; and the Gatineau Park Advisory Committee is concerned with the administration and development of Gatineau Park.

The National Capital Plan, as conceived by the eminent French town planner Jacques Gréber, was dedicated to those who gave their lives for Canada during the Second World War and has since constituted the Commission's planning guide for the Capital of Canada. In accordance with the first proposal of the Master Plan, the principle of "open space" is being applied, a policy beneficial to both residents and visitors. Part of this policy involves the restoration to their natural beauty of the shores of the waterways in and around Ottawa, a program evident in the work of the Commission at Rideau Falls Park opposite the City Hall and in the development of Vincent Massey Park in the heart of the city; the latter is a 75-acre park and playground extension to 50 -acre Hog's Back Park at the foot of Hog's Back Falls. The Commission owns 36 miles of riverfront property in the National Capital and makes these attractive areas accessible to the public. On the Quebec side of the Ottawa River the Commission maintains two parks-the historically interesting Brébeuf Park and Jacques Cartier Park, both on the shores of the Ottawa River. There are at present 40 miles of wide landscaped roadways in Ottawa and Hull, and 30 miles of right-ofway have been acquired for future expansion. The Commission cares for the landscaping of 13 municipal parks in Ottawa-Hull, of which Strathcona Park in Sandy Hill district and Rockcliffe Park are the most extensive and attractive. The acquisition of land along both shores of the Ottawa and Rideau Rivers and the exceptionally wide rights-of-way for parkways have given Ottawa about 7,000 acres of open space.

The program of partial decentralization of new government buildings has been under way for some time and excellent examples of planned sites for government structures now exist at Confederation Heights, at Tunney's Pasture and at the Printing Bureau site in Hull. Other areas, such as the large tract of already serviced land at Pinecrest, are awaiting development. The advantages of decentralization are many-planned government building areas away from centre-town offer some solution to the ever-pressing problem of traffic congestion and, from the humanitarian point of view, workers occupy buildings erected on large landscaped grounds with plenty of parking space and are close
to main traffic arteries and shopping centres, and often to good housing developments. The grounds of more than 140 government buildings in the National Capital Region are cared for by the Commission, which also gives assistance to municipal projects that enhance the attractiveness of the area, such as the provision of land and landscaping for the 12mile Queensway being built under a four-way partnership between the Federal Government, the National Capital Commission, the Province of Ontario and the City of Ottawa.

An important proposal of the Master Plan calls for the establishment of a greenbelt around the National Capital, one of the main objectives of which is to restrain the tentacular growth of the city so that family dwelling projects will be built on lands that can be supplied, at reasonable cost, with water and sewer services. There is also the aesthetic consideration that this belt of green open space and planned building sites will provide the beautified Capital with suitable approaches. The present semicircular greenbelt on the Ontario side occupies 41,000 acres of land and surrounds, to a depth of about two and one half miles, the urban zone at an average distance of nine miles from the Peace Tower. The Commission encourages agricultural activity within this area and at the same time reserves within its boundaries certain tracts of land to be occupied by government buildings, public institutions and some types of industrial development such as research and experimentation establishments requiring considerable space to operate. There are many other factors that help make the Ottawa greenbelt an ideal planning measure: it allows some control over the demographic increase of the Capital; it is an incentive for better urban land use; and it favours the development of satellite communities in the National Capital Region.

The Commission has begun the large-scale program advocated in the Master Plan of removing railway trackage and yards from the urban area with the co-operation of the railway companies. The abandoned rights-of-way are destined to become roadways which will relieve traffic bottlenecks within the heart of the city; the Queensway, now under construction, runs on a former railway bed. This program, which is expected to be completed by 1965, involves the removal of 32 miles of track, the elimination of 72 railway crossings and the consequent acquisition of 449 acres of high-value land for redevelopment.

The Master Plan also includes the establishment and development of the beautiful and impressive Gatineau Park, a 75,000-acre forest and lake area in the shape of a triangle stretching from its apex in the city of Hull northwestward for 35 miles into the Laurentian Hills. The National Capital Commission owns more than 62,000 acres of the projected area and the acquisition of private holdings is continuing. The 22 miles of parkway now traversing this area are to be extended deeper into the wilderness. Camping and pienic sites are being improved by the installation of drinking fountains, barbecues and outdoor ovens, and well-designed restrooms, and by the addition of fishing and swimming facilities. At Lac Philippe and Lac Lapêche, two of the four big lakes in Gatineau Park, the Commission has developed or is planning large-scale public recreation facilities with easy road access.

In addition to these major development projects, the National Capital Commission, through its Historical Advisory Committee, plans to conserve historic buildings and sites as mementoes of the past. Such sites are carefully studied and their preservation and suitable marking is an important part of the over-all program.

Planning aid to municipalities in the National Capital Region is given in the form of grants in special circumstances and advice on establishing areas of subdivision control, preparation of basic plans and maps, master plans for communities and zoning legislation. This advice is available upon request and the Commission, having no planning powers, must seek to persuade rather than impose its proposals.

Estimated expenditures for the Commission projects in the year ended Mar. 31, 1963 total $\$ 27,477,470$, which includes $\$ 3,325,970$ for administration, operation and maintenance, $\$ 11,151,500$ for capital projects and assistance to municipalities, and $\$ 13,000,000$ for property acquisition.

## Section 3.-Wildlife Resources and Conservation*

Wildlife in Canada is considered to be an important renewable natural resource. In the early days, wildlife was, and in large 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, many species of animals and birds became seriously depleted or completely extinct. The passenger pigeon, the great auk and the Labrador duck were extirpated, the buffalo vanished from the prairies, and wapiti, prong-horn antelope and musk-oxen were reduced to small fractions of their former numbers. The destruction was not limited to the animals and birds but in the areas of settlement their habitat was endangered by the cutting and burning of the forests, the diversion and pollution of streams and the changing of the face of the land.

Since then, it may be said that wildlife has been changed and influenced by man to the degree that he has changed and influenced the environment. The arctic and alpine tundra, one of Canada's major vegetational regions, has been changed hardly at all; the adjacent sub-arctic and sub-alpine non-commercial forest has been changed principally as a result of increased human travel causing more forest fires; the great commercial forest farther south has not lost its real character through being managed; cultivable lands, whether originally forest or grassland, have completely changed but often they and the managed forest are better for many forms of wildlife than the original wilderness. Some creatures thrive on change. There are more moose, deer, 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 forest, 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 in Canada 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, California bighorn sheep, wolves, grizzly bears and wolverines, to mention a few. And these animals exist not only because 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 1887 pioneer conservationists were instrumental in establishing Banff Park in Alberta and in setting up a bird sanctuary at Last Mountain Lake in Saskatchewan, the first on the Continent. The same fervour for preservation of 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 1907. Thus was formed the basis of wildlife conservation efforts which, for a long time, took the form of complete protection of certain species from destruction by man or predator. Better knowledge of nature's operations and the recognition of the fact that many other factors combine to cause fluctuation in wildlife numbers are now being reflected in a loosening of restrictions on hunting and a rescinding of preserves. 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. Wildlife must never be separated from the 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.

[^9]The Canadian Wildlife Service.-The Canadian Wildlife Service deals with most wildlife 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 is a division of the National Parks Branch of the Department of Northern Affairs and National Resources. 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. It provides a measure of protection for numerous species of birds that migrate between the two countries. The Canadian Wildlife Service, in its capacity as administrator of the Act, is responsible for the annual revision of the Migratory Bird Regulations, which govern such matters as open seasons and other waterfowl 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 108 migratory bird sanctuaries in Canada, having a total area of 39,688 sq. miles. A sanctuary may be established on the initiative of the Department of Northern Affairs and National Resources or of a provincial or municipal government, or on petition by a private person or organization. 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.

Many research projects under way were continued during 1962. These included the study, in co-operation with the Government of Manitoba and the Council of the Northwest Territories, of barren-ground caribou and of animals that prey upon caribou-wolves, grizzlies and wolverines. With better understanding of caribou physiology and of the effects of destruction of winter range by fire, factors associated therewith have assumed increasing importance, although human utilization still heads the list of recognized mortality causes. Studies continued of such fur mammals as mink, muskrat and beaver in the Mackenzie District, and of polar bear and white fox 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 wapiti in the mountain parks of Alberta where large populations of those species facilitate investigations, and to the competition for food between wapiti and the livestock still allowed to graze in Riding Mountain Park in Manitoba. In Wood Buffalo Park, investigations into the problems of disease and low reproductive rates among bison were continued as a long-term project in the hope that some control of each might be achieved. An outbreak of anthrax in bison outside the Park was dealt with and long-term studies initiated to prevent further losses.

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 Ross goose, trumpeter swan and whooping crane. Nation-wide investigations of migratory waterfowl included kill surveys in the Provinces of Prince Edward Island, New Brunswick, Quebec and Ontario and a crop-damage survey in Saskatchewan. The mourning dove census and the Arctic bird-banding program were continued.

At the end of 1962 the research staff included 41 wildlife biologists stationed at various centres throughout Canada. Ornithologists were located at Vancouver, B.C., Edmonton, Alta., Saskatoon, Sask., Winnipeg, Man., Ottawa and Aurora, Ont., Quebec, Que., Sackville, N.B., and St. John's, Nfld. Mammalogists were stationed in the Northwest Territories at Fort Smith and Inuvik, at Whitehorse in the Yukon Territory, and at Edmonton
and Ottawa. A limnologist was located at Edmonton and Jasper and a range specialist and two pathologists at Edmonton and Ottawa, respectively. A number of university graduates and undergraduates are engaged annually to assist in summer field work. Ottawa headquarters has an administrative staff of about 30 in addition to supervisory research officers and about 25 part-time migratory bird wardens and sanctuary caretakers are employed.

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 discussed briefly in the following paragraphs.*

Newfoundland.-The geographical separation of the province into a mainland and an island area provides two distinct wildlife regions. The Labrador, or mainland, region differs little in avian, faunal and fish species from any other region of Eastern Canada but the Island has only about one half of the number of mammals found on the neighbouring mainland and also fewer species of birds and fish.

Only 14 mammal species are native to the Island-caribou, black bear, beaver, otter, muskrat, red fox, lynx, ermine, pine marten, meadow mouse, Arctic hare, little brown bat, long-eared bat and wolf (now extinct). The development of these native mammals is of considerable interest to taxonomists; ten species have endemic races on the Island and are regarded as subspecies of the mainland species. Seven mammal species have been introduced to the Island-moose, snowshoe hare, house mouse, Norway rat, mink, cinereous shrew and chipmunk-the last three in recent years. The moose and snowshoe hare are of considerable importance to the economy of the Island as sources of meat. However, the harvest of fur bearers is not large. Trapping of beaver, muskrat and mink is conducted on a small scale but usually as a part-time occupation since the returns are not sufficient to provide a livelihood.

The only upland game bird of importance is the ptarmigan, but the ruffed grouse has been successfully introduced in recent years. Of the waterfowl species, Canada geese, black ducks, green winged teal, eider, scoter and old squaw ducks are most important. Murres, generally regarded as a non-game species, are also taken in large numbers and are of considerable importance as a meat source.

Newfoundland, like other provinces, seeks to make wise use of its wildlife resources and, during the past 12 years, has carried out an extensive research program involving moose, caribou, snowshoe hare, beaver, muskrat, lynx and ptarmigan. Certain phases of the caribou research, including inventory, have been conducted on a co-operative basis with the Canadian Wildlife Service and the Tourism, Game and Fish Department of the Province of Quebec.

The utilization of wildlife as a food source is probably greater in Newfoundland than elsewhere in Canada, but dependence on the source has decreased considerably. Appreciation of the aesthetic values of wildlife is increasing rapidly, and preservation of these values for all time is provided by recent proposals to set up wilderness areas and bird sanctuaries where vital habitat conditions are necessary to the continued propagation of a species.

Nova Scotia.-Hunting in Nova Scotia has gone through several stages since the days when it was a necessity of life to the time when ease of access and mechanization began seriously to affect wildlife numbers. The first provincial game laws which were passed in 1794 made it unlawful to kill partridge and blue-winged ducks in certain periods of the year and from these beginnings has developed the existing framework of legislation for game preservation which is administered by the Department of Lands and Forests and is enforced by officers of that Department and the Royal Canadian Mounted Police.

[^10]The Wildlife Conservation Division of the Department was established in 1958 to manage wildlife in such a way as to give hunters the ultimate in sport and at the same time keep wildlife populations in line with agricultural and forestry requirements. Also concerned with provincial wildlife is a four-member Cabinet Conservation Committee, which meets periodically to review, study and make plans regarding wildlife resources. The Wildlife Conservation Division conducts a biology section, patrols game and bird sanctuaries, aids in law enforcement, carries on a research program in all phases of wildlife and inland fisheries, and makes recommendations for seasons and bag limits of provincial wildlife. The wisdom of sound conservation laws and practices is accepted by most people without question and the opportunities that Nova Scotia offers the hunter and fisherman, year after year, are the result of sound management practices.

Of prime concern to Division biologists is the deer population. The white-tailed or Virginia deer was introduced to the province about the turn of the century and increased very rapidly. By 1954, the annual harvest had reached 47,000 but in subsequent years a gradual decline has resulted in bag limit cuts. It is the aim of the Division to provide a consistent harvest of well-conditioned deer through flexible regulating measures and the maintenance and improvement of winter deer range. The Division is also engaged in studying the beaver with a view to developing a formula that will enable the province to set seasons and bag limits on this lucrative fur bearing animal. Another problem that is receiving attention is the mystery of Nova Scotia's moose population. Despite the fact that the season has been closed since 1937, moose numbers have not materially increased.

The Wildlife Division is also endeavouring to retain Nova Scotia's migratory waterfowl populations and has recently encouraged law enforcement with beneficial results. There are now nine bird sanctuaries where wildfowl may rest and feed. The black duck is the most important and sought-after of the waterfowl species breeding in the province. Studies are being conducted on other game birds such as the ruffed grouse and the ring-necked pheasant. Pheasant shooting preserves are in operation in the province; in the 1959-60 season more than 15,000 pheasant chicks were hatched and released in the fields and valleys in co-operation with game associations.

The Division provides courses of instruction for junior guides in order to increase the number of competent professional guides which are required by law for non-resident hunters. After three years of training, these juniors are recommended for professional guide licences.

Nova Scotia's more than 20,000 sq. miles of forests and clearings hold over 6,000 lakes, rivers and streams. Fish to be found there include salmon, speckled, gray and brown and rainbow trout, small-mouthed black bass, white and yellow perch, landlocked salmon, pickerel and striped bass. Hundreds of thousands of trout and salmon have been put into the waters from rearing ponds and considerable work has been done on improving the rivers for the movement of migrating salmon. In addition, surveys are being conducted to determine fish population and the feeding habits of certain species.

New Brunswick.-In the Province of New Brunswick, the conservation and management of wildlife species is the responsibility of the Fish and Wildlife Branch, Department of Lands and Mines. In 1893 the provincial authorities apparently realized the importance of the wildlife resources and the necessity of sound management when they established a Game Branch or Game Division within the Department of Lands and Mines under the supervision of a Game Commissioner.

The present Fish and Wildlife Branch, headed by a Director, is divided into four sections dealing with administration, enforcement, game management and fish management. The Branch administers the New Brunswick Game Act, advises the respective provincial officials of necessary additions and revisions in the game regulations, and gives advice and co-ordination to the field staff of the Department of Lands and Mines in connection with the enforcement of the Game Act in the province. It carries out investigations of the wildlife
species that are essential in game management, deals with the numerous problems related to the utilization of the wildlife resources, and co-operates with the various private groups of sportsmen, informing them of the results of current investigations.

The Game Act was passed in 1877 in an attempt to provide a certain amount of protection for a limited number of birds and animals. Under the provisions of this Act, a closed season was established for such important game species as moose, deer and caribou. In addition, it provided for a limited season for the following fur bearing animals: mink, otter, fisher, sable and beaver. Partridge and snipe were also protected by this early legislation with a closed season. Hunters could no longer use a punt gun, swivel gun or net for killing ducks, geese, brant or other wild fowl.

Prior to the original Game Act, legislation pertaining to birds and mammals was limited to granting of bounty for wolves in 1792 and bears in 1828. The payment of bounty was established as a means of compensation to settlers for loss of domestic stock and should not be interpreted as an attempt to control predator populations.

The present New Brunswick Game Act provides adequate protection for the numerous species of game birds, game animals and fur bearing animals in the province. Its numerous provisions include such matters as open and closed seasons, length of season, bag limits, etc. The Act is enforced by the staff of the Forest Service, Department of Lands and Mines, with the co-operation of the Royal Canadian Mounted Police.

In 1919, the provincial government passed legislation authorizing the establishment of game refuges as a conservation measure. The first refuge, consisting of 175 sq . miles of forested Crown land, was established in 1921. At present, twelve game refuges are located throughout the province and contain approximately 1,125 sq. miles.

Research in the field of game management is relatively new in New Brunswick. In the past three years, with the addition of two game biologists and a fish biologist, a number of projects have been initiated. These studies include a population analysis and census of the white-tailed deer; a population analysis and census of the moose herd; an appraisal of DDT spraying on ruffed grouse reproduction; a population analysis of ruffed grouse; an analysis of bob-cat stomachs; and an inventory of the freshwater fishery. Censuses of the woodcock and waterfowl population are carried out in co-operation with the federal Canadian Wildlife Service biologists located at Sackville. In addition, a number of wildlife projects are undertaken by the staff of the Northeastern Wildlife Station, Department of Biology, University of New Brunswick. The staff of the Fish and Wildlife Branch is located at Fredericton.

Quebec.-The provincial Department of Tourism, Game and Fish recently instituted a Wildlife Management Service which employs about 30 biologists and maintains five fish hatcheries for the purpose of restocking public waters. The functions of the biologists include the preparation of inventories of the land and water wildlife resources in their particular areas and the recommendation of conservation measures for possible inclusion in provincial game and fish legislation. Their work also includes the management of public hunting and fishing waters. A study of the biological aspects of the fur trade is at present under way.

To permit the study on a regional basis of problems in connection with sport fisheries, freshwater commercial fisheries and salmon rivers, the province is divided into 11 districts, each headed by a chief biologist. However, because of the vast area involved and the limited number of biologists, there has been no division of the province into districts for the study, conservation or management of big game. In connection with the latter, it may be noted that an experiment has been tried recently; for the first time in 30 years, the Department has permitted a controlled moose hunt in Laurentide Park after drawing by lot the names of a specific number of hunters.

For the management of wildlife, the province is divided into 13 protection districts, staffed with fish and game wardens who are either experienced or recent graduates of the Quebec Game Wardens School. This school provides a course of study, both technical and practical, on the special problems of wildlife conservation.

The province has set aside a number of large areas as fish and game reserves, together totalling $41,166 \mathrm{sq}$. miles. The names, locations and areas of these reserves are given on p. 39.

Ontario.-The wildlife resources of Ontario are administered by the Fish and Wildlife Branch of the Ontario Department of Lands and Forests. The Branch operates under the authority of the Game and Fish Act, the Wolf and Bear Bounty Act, the Migratory Birds Convention Act (Canada), and the Game Export Act (Canada) and regulations made under each of these. The wildlife resources of the province, both fur and game species, are of considerable economic importance in that they provide income to trappers and to guides and other persons connected with the tourist industry and also provide recreation to residents and visitors. The annual harvest of game and fur in the province is substantial and is believed to be increasing steadily.

The Fish and Wildlife Branch has established a system for the trapping of fur bearing animals, designed to provide equitable and maximum harvests. There are 3,388 registered trapline areas on Crown lands and approximately 4,000 resident trappers operating on private lands. The harvests of these trappers include mainly muskrat and beaver. Most trappers are organized into Trappers' Councils or local Trappers' Associations; these are represented by the Ontario Trappers' Association which performs important services to the industry, particularly in marketing.

The hunting of game in Ontario has become an important recreation and game hunting regulations are in force, designed to permit the maximum recreational opportunity for harvesting the annual surpluses consistent with sound game management practices. In 1960, more than 21,000 non-residents purchased licences to hunt game in the province and some 500,000 resident licences were issued, producing altogether a provincial revenue of $\$ 1,766,000$.

Each year approximately 120,000 persons hunt deer in the province and, of those, 6,000 are non-residents. Deer numbers fluctuate in relation to weather conditions, especially in areas of marginal range, and the Department is engaged in a program of research and management of deer range in order to maintain habitat for these animals during the winter months. The hunting of moose is becoming increasingly popular. It is estimated that about 40,000 persons each year are interested in this sport, about 6,000 of them nonresidents. Moose have long been abundant in northern Ontario and have recently become prevalent in the southern part of the province where a season has been established. In 1961, the black bear was declared a game animal and a season established. As for small game, each year about 400,000 hunters, particularly in southern Ontario, engage in a considerable amount of hunting for cottontail, jackrabbit, varying hare, squirrel, raccoon and fox.

Game birds are also fairly prevalent in Ontario. Pheasant hunting is confined to the southwestern areas and, although most of the hunting is provided by natural production, two provincial game farms propagate and distribute about 75,000 pheasant chicks, poults or adults annually. In some parts of the province, Hungarian partridge is abundant enough to provide excellent hunting during the early autumn and the ruffed grouse has a wide distribution; it is the main game bird species of northern Ontario and is hunted frequently in woodlots of southern Ontario. Other species, such as the ptarmigan, sharptailed grouse, spruce grouse and bobwhite quail, have limited distribution. Ducks and geese, woodcock and snipe are also important game species. It is estimated that 150,000 of the 400,000 small game hunters are also waterfowl hunters. The Department of Lands and Forests has a considerable interest in the development of areas for waterfowl production and harvest.

A system whereby the number of hunters shooting pheasant, rabbit and fox may be controlled is operative in the southern townships within the pheasant range. The townships may charge fees for hunting which provide revenue for conservation work. Much of the money collected is used in pheasant propagation programs. A number of tracts of
private land in southern Ontario have been acquired for public hunting; six of these are intensively managed for pheasants or waterfowl and hunters using them are charged daily or annual fees.

Much of the research on wildlife is carried on by the Research Branch of the Department of Lands and Forests. Studies are conducted at the Wildlife Research Station in Algonquin Park and there has been an increase in the volume and variety of work being done throughout the province under the supervision of wildlife research biologists at the Southern Research Station at Maple. During 1962, the Wildlife Section carried out 75 research projects, some of them in co-operation with the field staffs of Forest Districts or of other agencies.

Saskatchewan.-Saskatchewan officially lists 308 species of birds and 77 species of mammals within its boundaries. Wildlife management deals mainly with four principal groups-economic fur bearers, upland and big game species, migratory waterfowl, and non-game species (including predators).

A program of conservation in relation to the fur bearers has been carried out since the end of World War II in co-operation with the Indian Affairs Branch of the federal Department of Citizenship and Immigration. This program has involved establishment of a Conservation Area program in the Northern Affairs District wherein steps have been taken to assure maximum optimum levels of the most important fur species, notably beaver and muskrat, to provide the highest possible income for northern citizens engaged in trapping. Early in the postwar period, a beaver trapping and transplanting program re-established beaver populations throughout most of northern Saskatchewan. The fur management program permits trapper participation through trapper councils, fur co-operatives, etc. Several projects involving the construction of dykes and dams to help increase and maintain desirable fur populations have been carried out.

Conservation of big game is effected through harvest control by means of regulations and sometimes by the imposition of closed or restricted seasons. For example, comprehensive aerial surveys of antelope, moose and, to a lesser extent, elk and deer are conducted annually to provide trend information that permits management recommendations to be made with relation to big game populations. Inventories of upland game birds and waterfowl permit similar predictions on which recommendations may be based.

One of the chief concerns with respect to upland game birds has been the continuous loss of habitat as a result of increasing agricultural use of land, a problem intensified by hunting pressure in the past quarter-century. The growth of hunter interest is indicated by the number of licences and game seals sold in the province, which increased from 7,327 in 1938-39 to 44,794 in 1948-49 and 119,096 in 1958-59. During the 1950's a plateau was reached with respect to the sale of game bird licences, but the steady increase in sale of big game licences which began after World War II continues, particularly with respect to moose and deer.

Attempts have been made to develop experimental habitat areas for upland game birds by the provision of improved nesting, brooding and winter feeding areas.

Waterfowl conservation measures have been undertaken by Ducks Unlimited, an organization which is conducting 234 active projects ( 247,380 acres of water and 1,915 miles of shoreline) for the propagation of waterfowl. The Department of Natural Resources is co-operating with these activities. Some attempts have been made to reduce migratory bird depredation problems by providing "lure" crops in limited locations and by the establishment of restricted hunting areas to provide protection in fall resting areas for migratory birds.

The increase in hunting interest is indicated by growth of membership in the province's sportsmen's organizations, and interest in wildlife in general by province-wide membership in various nature study groups such as the Saskatchewan Natural History Society. One of the more dramatic indications is the public attention given to the annual migration
through the province of North America's wild whooping cranes. Through the Saskatchewan Museum of Natural History and publications of the Conservation Information Service, the Department of Natural Resources endeavours to promote public interest in the principles of conservation and resource utilization.

Poisoning control programs have been instituted to replace the bounty system as a means of controlling predators. The objective of the poisoning program is definitely not eradication of certain predatory species, but reduction of populations to more manageable levels. Most hawks and owls are now protected through the game regulations.

Research studies designed to improve management techniques are conducted by five wildlife ecologists employed by the Department of Natural Resources. The province contains 149 game preserves with a total area of approximately 14,000 sq. miles. Last Mountain Lake Bird Sanctuary, reputedly the first established in North America, is located in southern Saskatchewan. Provincial parks in the southern part of the province are utilized as game management areas to permit fuller recreational use by the public.

Alberta.-In Alberta, the management of bird and animal wildlife is a function of the Department of Lands and Forests. In 1961-62, this activity was the incumbency of five permanent wildlife biologists who were assisted in the conduct of their program by many district officers of the provincial Forest Service and the Fish and Wildlife Division. The field officers reported on the distribution, reproductive success, mortality, age and sex structures, and diseases and parasites of game birds and wild ungulate populations and assisted in the accumulation of data on other features of wildlife biology and ecology. Significant contributions to the understanding of ecology and population dynamics were also made by university students and staff at the Alberta Biological Station.

Conservation measures are considered to be synonymous with proper wildlife management. Under these terms of reference, many species of wildlife were intensively studied during the 1961-62 fiscal year. Research projects on blue grouse, ptarmigan, Merriam's turkey, ruffed grouse, pheasant, sharptail, waterfowl, muskrat, pronghorn antelope, elk, moose, whitetail deer, caribou, bison, Rocky Mountain goat and bighorn sheep were conducted with a view to obtaining more usable data on natality, mortality, population dynamics and other biological features. Range condition studies produced information that, when considered with wild ungulate densities, formed the reference level from which season lengths and recommended harvests were established. The prime objective of conservation is the maintenance of game numbers in a compatible position with the abilities of different ranges to support game animals, thus assuring the continuation of wildlife population levels.

British Columbia.-Control over the trapping of fur bearing animals in British Columbia has been in effect since 1926, when a registered trapline system was instituted covering all lands except private property, National Parks, Indian reserves, municipalities and certain other reserved areas. Under this system, trappers are granted exclusive rights over designated areas and are required to submit annual reports of their catch, such returns providing an accurate check of the fur taken from each district. Trapping on private property is permitted, provided the trapper secures a special firearms licence, which must be held by all trappers and entitles the holder to hunt all types of large and small game.

Fur bearers in the province include bear, badger, beaver, fisher, fox, lynx, marten, mink, muskrat, otter, raccoon, skunk, squirrel, weasel and wolverine. Wolf, coyote, cougar and bobcat are classed as predators and there is no closed season on them or on raccoon, skunk and wolverine. Seasons on black or brown bear are generally year round although closed seasons are in effect in certain areas. Foxes have become so numerous in certain parts of the province that they also may be considered as predators, and beavers are so prevalent in some areas that it is necessary to move them to other districts.

Beaver is the most important source of revenue, followed by mink and squirrel. However, the day of the professional trapper seems to be gone. Few people now make their living solely or even mainly through the trapping of fur bearing animals. On the
other hand, there is a steady increase in recreational hunting and fishing, as evidenced by the number of licences issued to residents and non-residents. In 1961 the number of resident firearms licences issued was 115,796, the number of resident angler's licences 139,945, non-resident firearms licences 3,937, and non-resident angler's licences 46,048 , resulting in a provincial revenue of $\$ 1,656,061$. The amount of game taken during the hunting season by resident sportsmen was estimated as follows: deer 67,000 , moose 15,000 , elk 3,500 , mountain goat 1,900 , mountain sheep 1,000 , caribou 1,000 , waterfowl 377,000 , grouse 413,000 , and pheasant 57,000 .

Among the wildlife management programs conducted by the Department of Recreation and Conservation is included the rehabilitation of lakes through the use of toxaphene which kills off all fish species, permitting later planting of desirable species such as rainbow trout. More than 100 lakes have been brought back into trout production in recent years by this technique. Also included is the establishment of longer and more widespread open seasons on antlerless deer and moose. Such seasons are carefully studied to assess their effects upon the stands of game but, when properly applied, they allow a greater harvest of moose and deer. A limited open season on hen pheasants was established for the first time in 1962. Although at first there was some public criticism of the shooting of female birds, the fact that such open seasons are based on sound biological findings is now being realized.

## 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 not unique but 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.

[^11]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 1921 to 1950 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.

Temperature and Precipitation Data for Typical Stations in the Various Districts

| District and Station | Temperatures (Fahrenheit) |  |  |  |  |  | Precipitation |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { Mean } \\ \text { Jan. } \end{gathered}$ | Mean July |  | Lowest <br> on Record | Av. Dates of Freezing Temperatures ( $32^{\circ} \mathrm{F}$. or Lower) |  | $\begin{gathered} \text { Total } \\ \text { (All } \\ \text { Forms) } \end{gathered}$ | Snowfall | Av. Number of Days (All Forms) |
|  |  |  |  |  | Last in First in <br> Spring <br> Autumn  |  |  |  |  |
|  |  |  |  |  |  |  | in. | in. |  |
| Newfoundland- |  |  |  |  |  |  |  |  |  |
| Island of Newfoundland- |  |  |  |  |  |  |  |  |  |
| Belle Isle................ | 11.0 | 48.6 | 73 | -31 | June 19 | Sept. 24 | 33.19 | 98.8 | 152 |
| Gander. | 18.6 | 61.6 | 96 | -15 | June 1 | Oct. 3 | 39.50 | 119.2 | 194 |
| St. Andrew's............. | 22.9 | 59.7 | 81 | $-11$ | June 11 | Sept. 28 | 42.47 | 54.8 | 156 |
| St. John's................ | 24.0 | 60.0 | 93 | -21 | June 2 | Oct. 10 | 53.09 | 114.1 | 201 |
| Labrador- |  |  |  |  |  |  |  |  |  |
| Cartwright.............. | 4.2 | 55.2 | 97 | $-36$ | June 26 | Sept. 9 | 40.31 | 200.6 | 165 |
| Goose................... | 0.8 | 60.5 | 100 | -38 | June 10 | Sept. 14 | 28.66 | 140.9 | 164 |
| Nain.................... | -2.5 | 50.4 | 91 | -37 | July 3 | Aug. 12 | 29.56 | 128.2 | 121 |
| Maritime Provinces- |  |  |  |  |  |  |  |  |  |
| Prince Edward IslandCharlottetown.......... | 18.8 | 66.6 | 98 | -27 | May 16 | Oct. 14 | 43.13 | 112.7 | 156 |
|  |  |  |  |  |  |  |  |  |  |
| Annapolis Royal. | 24.4 | 65.3 | 91 | -13 | May 20 | Oct. 6 | 41.35 | 68.0 | 144 |
| Halifax................... | 24.4 | 65.0 | 99 | -21 | May 13 | Oct. 12 | 54.26 | 64.1 | 159 |
| Sydney................... | 22.7 | 65.0 | 98 | -25 | May 29 | Oct. 13 | 50.61 | ${ }_{96} 96$ | 169 |
| Yarmouth.............. | 27.0 | 61.6 | 86 | -12 | May 7 | Oct. 14 | 47.08 | 83.1 | 151 |
| New Brunswick- |  |  |  |  |  |  |  |  |  |
| Chatham ${ }_{\text {Grand Faili............. }}$ | 12.7 8.7 | 66.5 64.7 | 102 98 | -43 -46 | May 21 | Sept. 28 | 36.71 38.42 | 88.5 106.3 | 152 |
| Mrand Falis................ | ${ }_{16.1}$ | 64.7 65.8 | 98 99 | - 33 | Mane 1 | Sept. 20 | 38.72 40.97 | 108.4 | 130 |
| Saint John............... | 19.8 | 61.8 | 93 | $-22$ | May 4 | Oct. 16 | 47.39 | 80.0 | 170 |
| Quebec- |  |  |  |  |  |  |  |  |  |
| Northern- |  |  |  |  |  |  |  |  |  |
| Fort Chimo............ | -13.0 | 52.6 | 90 | -51 | June 25 | Aug. 14 | 16.37 | 68.8 | 157 |
| Knob Lake.............. | -11.9 | 55.1 | 88 | -59 | June 21 | Aug. 30 | 27.55 | 128.6 | 193 |
| Nitchequon.... | -12.6 | 55.9 | 90 | -57 | June 14 | Sept. 13 | 30.88 | 116.3 | 193 |
| Port Harrison............ | -14.8 | 46.8 | 86 | -57 | July 5 | Aug. 20 | 14.64 | 73.3 | 134 |

[^12]Temperature and Precipitation Data for Typical Stations in the Various Districts-continued

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow{3}{*}{District and Station} \& \multicolumn{6}{|c|}{Temperatures (Fahrenheit)} \& \multicolumn{3}{|c|}{Precipitation} \\
\hline \& \multirow[t]{2}{*}{\[
\begin{gathered}
\text { Mean } \\
\text { Jan. }
\end{gathered}
\]} \& \multirow[t]{2}{*}{Mean July} \& \multirow[t]{2}{*}{} \& \multirow[t]{2}{*}{\[
\begin{gathered}
\text { Lowest } \\
\text { on } \\
\text { Record }
\end{gathered}
\]} \& \multicolumn{2}{|l|}{Av. Dates of \({ }_{7}\) Freezing Temperatures ( \(32^{\circ} \mathrm{F}\). or Lower)} \& \multirow[t]{2}{*}{\begin{tabular}{l}
Total \\
(All \\
Forms) \({ }^{1}\)
\end{tabular}} \& \multirow[t]{2}{*}{Snowiall} \& \multirow[t]{2}{*}{Av. Number of Days (All Forms)} \\
\hline \& \& \& \& \& \multicolumn{2}{|l|}{\begin{tabular}{l|l} 
Last in \& \begin{tabular}{l} 
First in \\
Spring
\end{tabular} \\
Autumn
\end{tabular}} \& \& \& \\
\hline \& \& \& \& \& \& \& in. \& in. \& \\
\hline \multicolumn{10}{|l|}{Quebec-concluded} \\
\hline Southern- \& \& \& \& \& \& \& \& \& \\
\hline Bagotville... \& 2.9 \& 63.8 \& 96 \& -46 \& \& Sept. 16 \& 38.72 \& 130.3 \& 160 \\
\hline Father Point. \& 10.8 \& 58.4 \& 90 \& -32
-29 \& May 22 \& Sept. 26 \& 33.56
41.80 \& 108.0 \& 147 \\
\hline Montreal.. \& 15.4
12.0 \& 70.4
67.6 \& 97
97 \& -29 \& Apr.
May

11 \& Oct. 17 \& 41.80
44.76 \& 100.8
123.7 \& 160
171 <br>
\hline Quept fles. \& 12.2 \& 67.6
59.2 \& 90 \& -46 \& June 4 \& Sept. i0 \& 41.94 \& 165.5 \& 143 <br>
\hline Sherbrooke. \& 14.8 \& 67.8 \& 98 \& -42 \& May 18 \& Sept. 23 \& 38.93 \& 97.2 \& 176 <br>
\hline \multicolumn{10}{|l|}{Ontario-} <br>
\hline NorthernKapuskasing. \& -1.3 \& 62.8 \& 101 \& -53 \& June 14 \& Sept. 5 \& 27.99 \& 95.8 \& 142 <br>
\hline Port Arthur- \& \& \& \& \& \& \& \& \& <br>
\hline Fort William. \& 7.6 \& 63.4 \& 104 \& -42 \& June 4 \& Sept. 7 \& 31.62 \& 93.4 \& 137 <br>
\hline Sioux Lookout. \& -1.3 \& 65.0 \& 103 \& -51 \& June 1 \& Sept. 15 \& 27.45 \& 74.5 \& 157 <br>
\hline Trout Lake.... \& -11.9 \& 61.2 \& 95 \& -54 \& June 16 \& Sept. 15 \& 24.74 \& 85.1 \& 146 <br>
\hline \multicolumn{10}{|l|}{Southern-} <br>
\hline London.. \& 22.5 \& 69.6 \& 106 \& -27 \& May 16 \& Oct. ${ }^{1}$ \& 38.24
34.89 \& 77.0
80.5 \& 145 <br>
\hline Ottawa..... \& 12.0 \& 68.6
67.8 \& 102 \& -38
-39 \& May 11 \& Sept. 29 \& 34.89
37.87 \& 80.5
118.2 \& 162 <br>
\hline Parry Sound. \& 16.2
24.5 \& 67.8
70.8 \& 100 \& -39
-26 \& May 15 \& Oct. 15 \& 30.93 \& +54.6 \& 143 <br>
\hline Toronto... \& 24.5
24.5 \& 70.8
73.0 \& 101 \& -26 \& Apr. 29 \& Oct. 15 \& 33.43 \& 35.8 \& 139 <br>
\hline \multicolumn{10}{|l|}{Prairie Provinces-} <br>
\hline Manitoba- \& \& \& \& \& \& \& \& \& <br>
\hline Churchill. \& -17.3 \& 54.7
64.9 \& 100 \& -57
-54 \& June 28 \& Aug. ${ }^{30}$ \& 16.98 \& 53.2 \& 102 <br>
\hline The Pas. \& -6.2
0.6 \& 64.9
68.4 \& 108 \& -54 \& May 27 \& Sept. 15 \& 19.72 \& 49.4 \& 119 <br>
\hline \multicolumn{10}{|l|}{} <br>
\hline Regina..... \& 2.3 \& 66.6
66.4 \& 110 \& -56 \& June
May
24 \& \& 15.09
14.40 \& 40.1
36.1 \& 104 <br>
\hline Saskatoon..... \& 0.8
9.8 \& 66.4
67.2 \& 104
107 \& -55 \& $\begin{array}{ll}\text { May } & 24 \\ \text { May } & 27\end{array}$ \& Sept. 13 \& 14.40
14.89 \& 36.1
40.2 \& 112 <br>
\hline \multicolumn{10}{|l|}{} <br>
\hline Beaverlodge. \& 9.7 \& 60.2 \& 98 \& -54 \& May 30 \& Sept. 1 \& 17.32 \& 68.2
570 \& 127 <br>
\hline Calgary...... \& 15.8 \& 62.4 \& ${ }_{99}^{97}$ \& -49 \& June 3 \& Sept. 3 \& 17.47
17.63 \& 58.0
52.9 \& 126 <br>
\hline Edmonton..... \& 7.7
13.7 \& 62.9
70.2 \& 99
108 \& -57
-51 \& May 29
May 15 \& Sept. ${ }^{6}$ \& 17.63
13.55 \& 52.9
41.6 \& 126
98 <br>
\hline Medicine Hat...... \& 13.7 \& 70.2 \& 108 \& -51 \& May 15 \& Sept. 18 \& 13.55 \& 41.6 \& <br>
\hline \multicolumn{10}{|l|}{British Columbia-} <br>
\hline Pacific Coast and Coastal Valleys- \& \& \& \& \& \& Nov. 12 \& 107.66 \& 10.2 \& 203 <br>
\hline Langara.......... \& 40.4
37 \& 54.3 \& 78 \& 6 \& Apr. 2 \& Dec. 2 \& 67.79 \& 20.8 \& 255 <br>
\hline Prince Rupert. \& 35.7 \& 56.2 \& 88 \& -6 \& Apr. 19 \& Nov. 3 \& 94.00 \& 32.1 \& $\stackrel{229}{ }$ <br>
\hline Vancouver.... \& 37.6 \& 64.4 \& 92 \& 2 \& Apr. 1 \& Nov. 5 \& 56.83 \& 24.5 \& 179 <br>
\hline Victoria.... \& 39.2 \& 60.0 \& 95 \& -2 \& Feb. 28 \& Dec. 7 \& 26.18 \& 10.1 \& 149 <br>
\hline \multicolumn{10}{|l|}{} <br>
\hline Glacier............ \& 13.6
13.3 \& 57.9
63.1 \& 98
98 \& -32 \& June 10
May
27 \& ${ }_{\text {Sept. }}{ }^{8}$ \& 52.24
11.52 \& 342.5
30.2 \& 92 <br>
\hline Invermere. \& 13.3
22.3 \& 63.1
70.4 \& 99
107 \& -43 \& Apr. 25 \& Oct. 8 \& 10.14 \& 29.4 \& 83 <br>
\hline Penticton.. \& 26.7 \& 68.7 \& 105 \& -16 \& May 7 \& Oct. 3 \& 11.50 \& 25.4 \& 109 <br>
\hline Princeton.. \& 17.1 \& 63.1 \& 107 \& -49 \& June 11 \& Sept. 4 \& 13.30 \& 49.2 \& 105 <br>
\hline \multicolumn{10}{|l|}{} <br>
\hline Barkerville..... \& 16.0
17.2 \& 54.5
59.2 \& 96
100 \& -52
-50 \& June 25 \& Aug. ${ }^{16}$ \& 43.83
19.73 \& 74.2 \& 125 <br>
\hline Prince George \& 14.6 \& 59.6 \& 102 \& -58 \& June 17 \& Aug. 24 \& 22.16 \& 66.5 \& 166 <br>
\hline Smithers.... \& 15.7 \& 58.8 \& 92 \& -47 \& June 22 \& Aug. 11 \& 19.09 \& 67.1 \& 147 <br>
\hline
\end{tabular}

[^13]Temperature and Precipitation Data for Typical Stations in the Various Districts-concluded

| District and Station | Tempreratures (Fahrenheit) |  |  |  |  |  | Precipitation |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Mean Jan. | $\begin{aligned} & \text { Mean } \\ & \text { July } \end{aligned}$ |  | Lowest <br> on Record | Av. Dates of Freezing Temperatures ( $32^{\circ} \mathrm{F}$. or Lower) |  | $\begin{aligned} & \text { Total } \\ & \text { (All } \\ & \text { Forms) } \end{aligned}$ | Snowfall | Av. <br> Number of Days <br> (All <br> Forms) |
|  |  |  |  |  | Last in First in <br> Spring <br> Autumn  |  |  |  |  |
| British Columbiaconcluded |  |  |  |  |  |  |  |  |  |
| Northern Interior- |  |  |  |  |  |  |  |  |  |
| Atlin. | 4.6 3.6 | 53.8 54.4 | 87 93 | -54 -60 | June 11 | Sept. ${ }^{4}$ | 11.01 15.29 | 46.4 66.7 | 70 144 |
| Fort Nelson.... | -7.3 | 61.7 | 98 | -61 | May 24 | Sept. 2 | 16.37 | 66.8 | 115 |
| Fort St. John... | 5.2 | 61.1 | 92 | -53 | May 25 | Sept. 1 | 14.94 | 62.5 | 122 |
| Smith River.... | -6.0 | 56.8 | 92 | -74 | July 2 | Aug. 11 | 18.14 | 75.4 | 151 |
| Yukon Territory- |  |  |  |  |  |  |  |  |  |
| Dawson. | -16.0 | 59.8 | 95 | -73 | June 4 | Aug. 21 | 12.73 | 52.5 | 119 |
| Snag...... | -13.2 | 56.8 | 89 | -81 | June 17 | Aug. 7 | 13.82 | 52.8 | 109 |
| Watson Lake............. | -7.6 | 58.7 | 93 | -74 | June 1 | Aug. 25 | 16.75 | 77.0 | 141 |
| Whitehorse............... | 5.2 | 56.2 | 91 | -62 | June 10 | Aug. 27 | 10.67 | 43.7 | 92 |
| Northwest Territories- |  |  |  |  |  |  |  |  |  |
| Mackenzie Basin- |  |  |  |  |  |  |  |  |  |
| Fort Good Hope....... | -21.0 | 59.8 | 95 | -79 | June 14 | Aug. 6 | 12.18 | 57.3 | 110 |
| Fort Simpson.. | -15.1 | 62.4 | 97 | -69 | June 4 | Aug. 28 | 12.13 | 45.2 | 97 |
| Hay River.............. | -11.6 | 59.8 | 96 | -62 | June 11 | Sept. 7 | 12.02 | 46.8 | 99 |
| Barrens- |  |  |  |  |  |  |  |  |  |
| Baker Lake............ | -30.0 | 50.5 | 82 | -58 | July 2 | Aug. 24 | 6.74 | 21.8 | 71 |
| Chesterfield............ | -25.6 | 48.0 | 86 | -60 | June 30 | Sept. 4 | 11.12 | 51.5 | 96 |
| Coppermine............. | -19.0 | 49.0 | 87 | -58 | June 28 | Aug. 18 | 10.87 | 55.5 | 105 |
| Arctic Archipelago - |  |  |  |  |  |  |  |  |  |
| Clyde............ | $-15.3$ | 40.1 | 71 | -47 | 2 |  | 10.04 | 69.4 | 89 |
| Eureka.................. | -36.3 | 41.9 | 67 | -63 | June 25 | Aug. 10 | 2.61 | 13.9 | 50 |
| Frobisher Bay.......... | -15.8 | 45.7 | 76 | -49 | June 24 | Aug. 27 | 13.53 | 73.1 | 104 |
| Mould Bay............. | -28.9 -28.2 | 38.0 39.7 | 59 | -63 | 2 | ${ }_{2}$ | 3.25 | 19.1 | 74 |
| Resolute................ |  | 39.7 | 60 | -61 | 2 | 2 | 5.28 | 28.0 | 93 |

[^14]
## Section 2.-Meteorological Observing Stations in Canada*

In 1962, official meteorological observations were taken and recorded at some 2,133 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 precipitation observing stations where a volunteer observer makes daily observations of rainfall and snowfall. 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 265 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

[^15]reports are sent by mail to Meteorological Branch Headquarters for use in compiling climatic statistics. At some 90 of these observing stations, personnel of the Telecommunications Branch of the Department of Transport take weather observations as part of their scheduled duties, and 35 stations are operated in a similar manner by the different Armed Services; 70 stations are operated by Meteorological Branch personnel and the remainder are operated under contract, mainly by various transportation and communications companies.

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 balloons and the information reported by radio to the ground receiving station; winds are determined by observing the drift of the balloon by means of radar or radio direction finding ground equipment. There are also 26 other 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 compilation of climatic statistics.

About 1,153 weather observing stations in Canada are classified as climatological stations where the observers record temperature extremes and precipitation once or twice daily and send in monthly data sheets. Most of these 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 about 659 stations classified as precipitation stations where rainfall and snowfall 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 about 45 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 a rate of more than 50 a year for the past decade and thus a steadily increasing climatic intelligence 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 extending over one twenty-fourth of the surface of the earth and including all the territory between two meridians $15^{\circ}$ longitude apart. The basis of world time is Greenwich time and all other time zones are a definite number of hours behind Greenwich.

Canada has seven time zones, the most easterly being Newfoundland standard time, three hours and thirty minutes behind Greenwich time. In the west, Pacific standard time, used throughout British Columbia and part of the Northwest Territories, is eight hours behind Greenwich, and Yukon standard time, used throughout the Yukon Territory, is nine hours behind Greenwich. Some municipalities adopt the time used by the local railways which, in certain cases, differs from the standard. There are also villages that adopt such time as seems best to suit their convenience but in general the legal boundaries of the different time zones are actually in use.


Legal Authority for the Time Zones.-Most of the regulations made in Canada concerning standard time have been passed by the provincial legislatures and the Northwest Territories Council. Legislation, besides determining the boundaries of zones, regulates such matters as the times of coming into effect or expiration of Acts, ordinances, contracts and agreements, times of opening and closing registration offices, law courts, post offices and other public offices, times of open or close seasons for hunting and fishing, and times of opening and closing business houses and places of amusement.

Daylight Saving Time.-For some years before World War I there was active propaganda, particularly in the cities, for the use during the summer months of an earlier time usually referred to as 'daylight saving time', one hour ahead of standard time. It was considered from the economic as well as from the health point of view that people in industrial towns and cities would gain by having longer periods of sunlight at their disposal for recreation. Canada adopted daylight saving time in 1918 but the Canadian Act lapsed at the end of that year. Since that date, however, most cities and towns have adopted daylight saving for varying periods in the summer months. Several provinces have recently placed legislation on their statute books making daylight saving time mandatory, either throughout the province or in certain areas.

## PART IV.-GEOPHYSICS AND ASTRONOMY

## Section 1.-Geophysics*

Geophysics is the study of the earth, including the oceans and atmosphere, by the methods of physics. Because it extends over such a very wide range of topics, it is generally divided into seven fields, each a well developed science in itself. Of these, one of the oldest is geodesy, the study of the earth's shape, and of variations in the gravitational attraction of the earth, which are related to the shape. Seismology originally was the

[^16]study of earthquakes but it now includes investigations of the earth's interior by means of vibrational waves, which may be produced by explosions as well as by earthquakes. Meteorology deals with the atmosphere, and hydrology deals with the surface waters of the earth, excluding the oceans but including ice and snow. The study of the oceans, their currents and bottom profiles, forms a subject in itself-oceanography. Geomagnetism is involved with the earth's magnetic field and with many related phenomena, such as the ionosphere and the radiation belts that surround the earth. Finally, volcanology is the study not only of existing volcanoes but of volcanoes of the past and of the rocks they produced.

The seven fields all deal with the investigation of some major property of the earth. They may be considered as pure sciences but it is apparent that they all have applications that are vital to modern life. The findings of geodesy on the precise shape of the earth are needed for accurate maps. The search for minerals and oil by scientific methods makes use of the techniques of gravity measurements, seismology and geomagnetism. Meteorology obviously has great practical importance, and the contributions of hydrology to water supply problems and of oceanography to the fisheries are also very large.

An event of particular significance to geophysics in 1962 was the launching of the first Canadian satellite, Alouette. This satellite, constructed by the Defence Research Board, carried instrumentation for the study of the upper part of the region of the atmosphere known as the ionosphere. Information on the ionosphere is important in problems of radio communication and, while its lower boundary can be studied through observations made from the ground, it is only by the use of satellites that the top of it is accessible. It is appropriate, therefore, that the Alouette is known as a topside sounder. A second event of 1962, of particular interest to geophysicists engaged in the exploration for oil and minerals, was the meeting of the International Society of Exploration Geophysicists, held in Calgary, Alta., in September. This was the first meeting of the Society to be held in Canada and the important Canadian contribution to the program indicated the advances that have been made in the science of geophysical prospecting in this country.

The determination of precise positions and elevations, which forms the basis of geodesy, was continued by the Geodetic Survey, Department of Mines and Technical Surveys. Networks of triangulation, to provide the framework for accurate mapping, were extended in the Northwest Territories and in Quebec. An arc of triangulation was completed from Sept Iles to Schefferville in Quebec, and on to Nain in Labrador, to provide the first accurate positions in this remote but developing region. Lines of precise levels were extended in British Columbia, Alberta, Saskatchewan, Manitoba, Ontario and Quebec. One of the problems of the Geodetic Survey has been the designing of permanent bench marks to provide a record of elevations in muskeg areas. A new type, consisting of a tablet clamped to a copper rod, which can be driven to a depth of over 100 feet, is now being used and it appears that it will successfully withstand frost action and other possible disturbance. Measurements of the earth's gravity also provide information on the shape of the earth and on the location of concealed underground structures. The Dominion Observatory, Department of Mines and Technical Surveys, continued its active program of determinations throughout Canada. Readings were taken over a large area of the Gulf of St. Lawrence, using a special gravity meter lowered to the bottom and read from a ship. The Observatory began the distribution of a series of map sheets on which the results of gravity surveys are plotted. These will be of considerable use to groups who wish to use the information for geological interpretations.

The most detailed knowledge on the interior of the earth comes from the study of waves from earthquakes. The Dominion Observatory maintains a network of seismograph stations for recording these waves; eleven stations were in operation during 1962 and five others were under construction. In addition, a station at Montreal was operated by Collège Jean-de-Brébeuf and one near Edmonton was completed by the University of Alberta. In addition to providing information on the earth's interior, the recording of earthquake waves is important for determining the possibility of earthquake damage to structures in different parts of the country. The Department of Mines and Technical

Surveys co-operates with the Division of Building Research, National Research Council, in defining regions of seismic activity throughout the country, in order that building specifications may be adapted to local conditions. As part of the International Upper Mantle Project, a number of studies of the crust and underlying mantle were carried on using seismic waves from large explosions. Groups from the Universities of British Columbia, Alberta, Manitoba and Toronto, and Dalhousie University, in addition to the Polar Continental Shelf Project, Dominion Observatory and Geological Survey, carried out investigations of this kind. Information on the thickness and composition of the crust is becoming available for many parts of Canada as a result of this work. Similar operations, conducted in more detail over limited regions, form the chief geophysical method used in the search for oil and natural gas. Laboratory measurements on the physical properties of rocks under high pressures are important for the understanding of the state of the earth's interior. Although this has been a neglected field in Canada, experimental work is now in progress at the Mines Branch, Department of Mines and Technical Surveys, and at the University of Western Ontario.

In meteorology, the routine operations of the Meteorological Branch, Department of Transport, were continued. The Branch also conducts research in meteorology and supports research projects at universities through a series of grants. The only department of meteorology in a Canadian university is at McGill University, Montreal, but an increase in meteorological research is notable at other universities, such as Toronto, where it is conducted within the Department of Physics. Canada co-operates with other nations in the exchange of weather information and in the standardization of weather reporting, by membership in the World Meteorological Organization.

Measurements and research in hydrology continue to expand, as the need to examine the extent of water resources becomes apparent in many parts of the country. The overall study of water resources is the responsibility of the Water Resources Branch, Department of Northern Affairs and National Resources, but studies in particular areas are conducted by provincial research councils, universities and groups, such as the Prairie Farm Rehabilitation Administration. Research was continued on such topics as estimating run-off from snow cover, evaporation from reservoirs, and the relation between meteorological conditions and floods. The problem of locating ground-water by surface exploration often brings other geophysical methods into play. The Geological Survey continued an investigation of local seismic measurements for the purpose of detecting water-bearing structures, and the Saskatchewan Research Council has had success using electrical measurements on the surface to locate buried river channels.

Perhaps no field of geophysics has grown more rapidly in Canada during recent years than glaciology. Glaciers in the western mountains are important as a source of water for many rivers, while those in the Arctic provide a record of climatic change. In 1962 field parties investigated glaciers in the Rocky, Selkirk, Monashee, Cariboo and Coast Mountains of Western Canada, and on Baffin, Devon, Melville, Axel Heiberg, Meighen and Ellesmere Islands of the Canadian Arctic. These groups represented the Defence Research Board, the Department of Mines and Technical Surveys, several universities, and other organizations such as the Arctic Institute of North America and the American Geographical Society. The work included accurate mapping of existing glaciers, determination of ice thickness, studies of glacial flow, and the breaking up of ice shelves to form ice islands.

Investigations of the earth's magnetism and its changes with time are important for a number of reasons. The use of the compass in navigation is an obvious one but magnetic measurements can also be used to study the earth's interior and to locate mineralized bodies in the earth's crust. Short-period disturbances in the earth's magnetism result from the bombardment of the earth by electrically charged particles from the sun. These disturbances can cause serious disruption of radio communication, particularly in northern regions. The strength of the magnetic field over Canada is determined by measurements, both airborne and ground, conducted by the Dominion Observatory, which also operates observatories to record the changes of the field with time, at Agincourt, Ont., Meanook, Alta., and Baker Lake, Resolute, Alert and Mould Bay, N.W.T. Airborne
magnetometer surveys for geological purposes were continued by the Geological Survey of Canada. The maps that have been prepared from the surveys for many parts of the country have proven to be very valuable in mineral exploration. Research into the magnetic disturbances caused by external influences was continued by several universities and the Defence Research Board. A finding of particular interest was the simultaneous occurrence of aurorae, and associated magnetic disturbance, near the north and south magnetic poles. This resulted from special observations in Northern Canada and in Antarctica.

In the field of upper atmospheric physics, the launching of the Alouette, mentioned on p. 58, was of great significance and important also were the re-openings of the Prince Albert Radar Laboratory and the Churchill rocket launching facility. Both of these had been damaged by fire in 1961. A number of groups in Canada, including the National Research Board, Defence Research Board and several universities, are proceeding with the development of instruments to be used in rockets which will be launched from Churchill. Canadian universities, such as the University of Saskatchewan, have taken advantage of their position in the zone of most frequent auroral displays to specialize in the study of this phenomenon.

The study of the oceans bordering Canada is carried on by the new Marine Services Branch, Department of Mines and Technical Surveys, the Fisheries Research Board, the Defence Research Board, and by university groups such as the Institute of Oceanography at the University of British Columbia and Dalhousie University. The Bedford Institute of Oceanography, under the Marine Services Branch, was opened in October 1962. It will be an important centre for oceanographic work, with docking facilities for 10 ships and large laboratory space. Canadian oceanographic ships continued to extend their operations northward, and the John A. Macdonald of the Canadian Coast Guard reached a point only 500 miles from the north geographic pole.

The interest of Canadian groups in determining the ages of rocks by radioactive methods continued to expand. Because so many of the rocks exposed in Canada are of Precambrian age and carry no fossils, physical methods for determining the ages have become very important in the geological subdivision of the country. These methods are based on the precise measurement of the quantity in the rocks of certain elements formed by radioactive decay. Instruments suitable for this work are now in operation at the Geological Survey and at the following universities: Toronto, British Columbia, Alberta, St. Francis Xavier, McMaster and Carleton.

The increasing diversity of geophysics in Canada, both in the general study of the earth, oceans and atmosphere, and in geophysical exploration, has meant a continued demand for students with degrees in the subject. Nearly all Canadian universities now offer undergraduate training in some branch of geophysics and it will be apparent from the preceding discussions that research in geophysics is also being carried on at most of them. This research is largely supported by a system of grants awarded by the National Research Council and the Defence Research Board, with some support provided by industry and other agencies.

## Section 2.-Astronomy

The modern era of astronomy in Canada may be said to have begun in 1905 with the completion of the Dominion Observatory at Ottawa, the national observatory of Canada. Prior to that time, an astronomical observatory established in 1851 at Fredericton, N.B., was used for a short time to determine the longitude of that centre and for general astronomical purposes; it has been rehabilitated as a historic monument. Other small observatories were established, one at Quebec City in 1854 and one at Kingston in 1875. Astronomical instruments were to be associated with the Magnetic Observatory built by the British Government at Toronto in 1839 but there is no record of their being set up until 1881. A small observatory established at McGill University in 1879 was used for many years for time observations.

Today, an increasing number of universities and other scientific organizations are devoting a substantial part of their efforts to the study of astronomy and astrophysics. The Dominion Observatory at Ottawa, which with its sister institutions is administered by the Department of Mines and Technical Surveys, specializes in the astronomy of position, solar physics, meteoric astronomy and various branches of geophysical work. This Observatory also maintains a subsidiary (the Dominion Radio Astrophysical Observatory) near Penticton, B.C., for the study of radio astronomy. Also associated in the same group is the Dominion Astrophysical Observatory at Victoria, B.C. This Observatory, which operates two large optical reflectors, devotes its efforts to the motions and physical characteristics of the stars and of inter-stellar material. Other Federal Government institutions carrying out meteoric and radio astronomy, including a study of the upper atmosphere by essentially astronomical methods, are the National Research Council and the Defence Research Board. Solar observations at the Algonquin Radio Observatory of the National Research Council, located in Algonquin Park 150 miles west of Ottawa, are now under way. The program is being extended to galactic and extragalactic studies with the addition of several new radio telescopes, including one under construction by the University of Toronto. At Springhill Meteor Observatory, near Ottawa, studies of meteors and the aurora are carried out.

The David Dunlap Observatory of the University of Toronto carries on an active program of astrophysical research as well as the teaching of astronomy. It performs not only the functions of a privately financed and administered research institution, but is also the nucleus of the Department of Astronomy of the University of Toronto. The Physics Department of Queen's University in Kingston, which devotes considerable effort to the teaching of astronomy, has recently installed a new optical telescope and for some time has been carrying on advanced work in the science of radio astronomy. The University of Western Ontario maintains a small but active Department of Astronomy and several other Canadian universities give some instruction in astronomical science.

# CHAPTER II.-CONSTITUTION AND GOVERNMENT* 

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing $p .1$ of this volume.

## PART I.-CONSTITUTION OF CANADA

The Canadian federal state, which today comprises ten provinces and two vast northern territories, had its beginning ninety-six 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".

While 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

[^17]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 Titles, 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 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 transplanted 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. 67-69)

[^18]and its functioning through close identification of the executive and the legislative powers (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. 72 and p. 80).

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. Additional security of these rights may be expected to flow from the recent passage of a Canadian Bill of Rights-An Act for the Recognition and Protection of Human Rights and Fundamental Freedoms (SC 1960, c. 44), assented to Aug. 10, 1960.

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. The constitutional background to the problem, the present amending procedures, the attempts since 1935 to devise amending procedures, and the complexities inherent in amendment of a federal constitution are all discussed in a special article published in the 1961 Canada Year Book, pp. 51-57, entitled "Amendment of the Canadian Constitution".* The only barrier to Canada's complete control over the amendment of its own written Constitution (i.e., the British North America Act of 1867, a statute of the British Parliament) has been the inability of the Canadian people and their elected representatives in the federal and provincial fields to draft amendment procedures on which they will be in general agreement.

[^19]

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1.-Provinces and Territories of Canada, Dates of Admission to Confederation, Legislative Processes by which Admission was Effected, Present Area and Seat of Government

| Province, Territory or District | Date of Admission or Creation | Legislative Process | $\begin{gathered} \text { Present } \\ \text { Area } \\ \text { (sq. miles) } \end{gathered}$ | Seat of Provincial or Territorial Government |
| :---: | :---: | :---: | :---: | :---: |
| Ontario | July 1, 1867 | Act of Imperial Parliament-The British | 412,582 | Toronto |
| Quebec ${ }^{\text {2 }}$ | July 1, 1867 | North America Act, 1867 (Br. Stat. | 594,860 | Quebec |
| Nova Scotia. | July 1, 1867 | 1867, c. 3) and Imperial Order in | 21,425 | Halifax |
| New Brunswick.......... | July 1, 1867 | Council, May 22, 1867. | 28,354 | Fredericton |
| Manitobs ${ }^{\text {a }}$..............$~$ | July 15, 1870 | Manitobs Act, 1870 (SC 1870, c. 3) and Imperial Order in Council, June 23, 1870. | 251,000 | Winnipeg |
| British Columbia........ | July 20, 1871 | Imperial Order in Council, May 16, 1871.. | 366,255 | Victoria |
| Prince Edward Island.... | July 1, 1873 | Imperial Order in Council, June 26, 1873.. | 2,184 | Charlottetown |
| Saskatchewan ${ }^{4}$. | Sept. 1, 1905 | Saskatchewan Act, 1905 (SC 1905, c. 42).. | 251,700 | Regina |
| Alberta ${ }^{4}$. | Sept. 1, 1905 | Alberta Act, 1905 (SC 1905, c. 3). | 255,285 | Edmonton |
| Newfoundland............ | Mar. 31, 1949 | The British North America Act, 1949 (Br. Stat. 1949, c. 22) | 156,185 | St. John's |
| Northwest Territories5... | July 15, 1870 | Act of Imperial Parliament-Rupert's Land Act, 1868 (Br. Stat. 1868, c. 105), and Imperial Order in Council, June 23, 1870. | 1,304,903 |  |
| Mackenzie ${ }^{6}$ <br> Keewatin ${ }^{6}$ <br> Franklin ${ }^{6}$ |   <br> Jan. 1,1920 <br> Jan. 1,1920 <br> Jan. 1,1920 | Order in Council, Mar. 16, 1918.......... $\{$ | $\begin{aligned} & 627,490 \\ & 228,160 \\ & 549,253 \end{aligned}$ | Ottawa ${ }^{7}$ |
| Yukon Territory ${ }^{\text {s }}$........ | June 13, 1898 | Yukon Territory Act, 1898 (SC 1898, c. 6) <br> Canada. | 207,076 | Whitehorse |
|  |  |  | 3,851,809 |  |

${ }^{1}$ The area of Ontario was extended by the Ontario Boundaries Extension Act, 1912 (SC 1912, c. 40).
${ }^{2}$ Extended by Quebec Boundaries 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 approximately 112,000 8q. miles of territory (formerly considered as part of Quebec) was assigned to Newfoundland.
${ }^{3}$ 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 districts of Assiniboia, Athabaska, Alberta and Saskatchewan established May 17, 1882 by minute of Canadian Privy Council concurred in by Dominion Parliament and Order in Council, Oct. 2, 1895.
${ }^{5}$ By an Imperial 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's Bay Company known as Rupert's Land and the North-Western Territory were transferred to Canada effective July 15, 1870. These teritories were designated as the North-West Territories by the Act of SC 1869, c. 3 and as the Northwest Territories by RSC 1906, c. 62. By Imperial Order in Council of July 31, 1880 (effective Sept, 1, 1880), all British territories and possessions in North America not already included within Canada and all islands adjacent thereto (with the exception of the Colony of Newfoundland and its dependencies) were annexed to Canada and these additional territories were formally included in the NorthWest Territories by SC 1905, c. 27. The Province of Manitoba was formed out of a portion of the territories 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 Saskatchewan 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 proclamation. It provided that portions of the District might 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 Assiniboia, 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 districts were re-defined by Order in Council of Dec. 18, 1897. Subsequently the Yukon Territory was formed, the Provinces of Alberta and Saskatchewan were created and other portions 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 Northwest Territories were divided into three provisional districts known as Mackenzie, Keewatin and Franklin.
${ }^{7}$ See p. 93.
${ }^{3}$ The provisional district of Yukon established in 1895 was created a judicial district of the North-West Territories by proclamation issued pursuant to Sect. 51 of the North-West Territories Act (RSC 1886, c. 50 ) on Aug. 16, 1897 and by the Yukon Territory Act (SC 1898, c. 6) was declared to be a separate Territory.

# PART II.-MACHINERY OF GOVERNMENT 

Section 1.-The Federal Government

## Subsection 1.-The Executive

The Crown.-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 29, 1953. The title of the Queen, so 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 | $\begin{gathered} \text { Year } \\ \text { of } \\ \text { Birth } \end{gathered}$ | $\begin{gathered} \text { Date } \\ \text { of } \\ \text { Accession } \end{gathered}$ |
| :---: | :---: | :---: | :---: |
| Victoria. | House of Hanover. | 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 Windsor. | 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 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 1960. 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 $\$ 100,000$, respectively. In addition, other expenses of office are provided for, including the salary of the Governor General's secretary.

The present Governor General is styled His Excellency Major General The Right Honourable Georges P. Vanier, D.S.O., M.C., C.D.
2.-Governors General of Canada since Confederation, 1867

| Name | $\begin{gathered} \text { Date } \\ \text { of } \\ \text { Appointment } \end{gathered}$ | Date of Assumption of Office |
| :---: | :---: | :---: |
| Viscount Monck, G.C.M.G. | June 1, 1867 | July 1, 1867 |
| Lord Libgar, G.C.M.G. | Dec. 29, 1868 | Feb. 2, 1869 |
| The Earl of Dufferin, K.P., K.C.B., G.C.M.G. | May 22, 1872 | June 25, 1872 |
| The Mareuts of Lorne, K.T., G.C.M.G. | Oct. 5, 1878 | Nov. 25, 1878 |
| The Marquts of Lansdowne, G.c.m.G. | Aug. 18, 1883 | Oct. 23, 1883 |
| Lord Stinley of Preston, G.C.b. | May 1, 1888 | June 11, 1888 |
| The Earl of Aberdeen, K.T., G.C.m.G | May 22, 1893 | Sept. 18, 1893 |
| The Earl of Minto, G.C.M.G | July 30, 1898 | Nov. 12, 1898 |
| Earl Grey, G.C.M.G.. | Sept. 26, 1904 | Dec. 10, 1904 |
| Field Marbial H. R. H. The Duke of Connaught, K.G. | Mar. 21, 1911 | Oct. 13, 1911 |
| The Duke or Devonshire, K.G., G.C.M.G., G.C.V.O | Aug. 19, 1916 | Nov. 11, 1916 |
| General The Lord Byng of Vimy, G.C.b., G.C.M.G., M.V.o | Aug. 2, 1921 | Aug. 11, 1921 |
| Vibcount Whungdon of Ratton, G.C.s.I., G.C.I.E., G.B.E. | Aug. 5, 1926 | Oct. 2, 1926 |
| The Earl of Bebsborough, G.C.M.G. | Feb. 9, 1931 | Apr. 4, 1931 |
| Lord Tweedsmutr of Elsfeld, G.C.M.G., G.C.V.O., C.H. | Aug. 10, 1935 | Nov. 2, 1935 |
| Major General The Earl of Athlone, K.G., G.C.B., G.C.M.G., G.C.V.o., D.s.O. | Apr. 3, 1940 | June 21, 1940 |
| Field Marshal Viscount Alexander of Tunis, K.G., G.C.B., G.C.m.G., C.S.I., D.S.O., M.C., A.D.C. | Aug. 1, 1945 | Apr. 12, 1946 |
| The Riget Honourable Vincent Masbey, C.H. | Jan. 24, 1952 | Feb. 28, 1952 |
| Major General The Riget Honourable Georges P. Vanier, D.S.O., M.C., C.D. | Aug. 1, 1959 | 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 government 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 hold 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.

[^20]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, 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 General 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 Apr. 30, 1963 in Table 4. Sessional and other allowances received by Cabinet Ministers are given at pp. 76-77.

## 3.-Prime Ministers since Confederation, 1867

| Ministry | Prime Minister | Length of Administration |
| :---: | :---: | :---: |
| 1 | Rt. Hon. Sir John Alexander Macdonald....................... | July 1, 1867 - Nov. 5, 1873 |
| 2 | Hon. Alexander Mackenzie. | Nov. 7, 1873 - Oct. 16, 1878 |
| 3 | Rt. Hon. Sir John Alexander Macdonald...................... | Oct. 17, 1878 - June 6, 1891 |
| 4 | Hon. Sir John Joseph Caldwell Abbott. | June 16, 1891 - Nov. 24, 1892 |
| 5 | Rt. Hon. Sir John Sparrow David Thompson.................. | Dec. 5, 1892 - Dec. 12, 1894 |
| 6 | Hon. Sir Mackenzie Bowrll. | Dec. 21, 1894 - Apr. 27, 1896 |
| 7 | Rt. Hon. Sir Charles Tupper | May 1, 1896 - July 8, 1896 |
| 8 | Rt. Hon. Sir Wilfrid Laurier | July 11, 1896 - Oct. 6, 1911 |
| 9 | Rt. Hon. Sir Robert Laird Borden. | Oct. 10, 1911 - Oct. 12, 1917 (Conservative Administration) |
| 10 | Rt. Hon. Sir Robert Latrd Borden............................ | Oct. 12, 1917 - July 10, 1920 (Unionist Administration) |
| 11 | Rt. Hon. Arthur Meighen................................... | July 10, 1920 - Dec. 29, 1921 (Unionist-"National Liberal and Conservative Party") |
| 12 | Rt. Hon. William Lyon Mackenzie King......................... | Dec. 29, 1921 - June 28, 1926 |
| 13 | Rt. Hon. Arthur Meighen..................................... | June 29, 1926 - Sept. 25, 1926 |
| 14 | Rt. Hon. William Lyon Mackenzie King......................... | Sept. 25, 1926 - Aug. 6, 1930 |
| 15 | Rt. Hon. Richard Bedford Bennett............................ | Aug. 7, 1930 - Oct. 23, 1935 |
| 16 | Rt. Hon. William Lyon Mackenzie King......................... | Oct. 23, 1935 - Nov. 15, 1948 |
| 17 | Rt. Hon. Louts Stephen St. Laurent. | Nov. 15, 1948 - June 21, 1957 |
| 18 | Rt. Hon. John George Diefenbaker. | June 21, 1957 - Apr. 22, 1963 |
| 19 | Rt. Hon. Lester Bowles Pearson | Apr. 22, 1963 - ... |

## 4.-Members of the Nineteenth Ministry, as at Apr. 30, 1963 ${ }^{1}$

(According to precedence of Ministers)
Notr.-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.

| Office | Occupant | Date of Appointment |
| :---: | :---: | :---: |
| Prime Minister | Hon. Lester Bowles Pearson. | Apr. 22, 1963 |
| Minister of Justice and Attorney Genera | Hon. Lionel Chevrier. | Apr. 22, 1963 |
| Secretary of State for External Affairs. | Hon. Paul Joseph James Martin | Apr. 22, 1963 |
| Minister without Portfolio and Leader of the Government in the Senate. | Hon. William Ross Macdonald. | Apr. 22, 1963 |
| Secretary of State of Canada | Hon. John Whitney Pickersgill | Apr. 22, 1963 |
| Minister of National Defence | Hon. Paul Theodore Hellyer. | Apr. 22, 1963 |
| Minister of Finance and Receiver | Hon. Walter Lockhart Gordon | Apr. 22, 1963 |
| Minister of Trade and Comme | Hon. Mitchell Sharp | Apr. 22, 1963 |
| Postmaster General | Hon. Azellus Denis | Apr. 22, 1963 |
| Minister of Transport. | Hon. George James Mcllratth. | Apr. 22, 1963 |
| Minister of Mines and Technical Surveys | Hon. Whlinm Moore Benidickson | Apr. 22, 1963 |
| Minister of Northern Affairs and National Resources | Hon. Arthur Laing. | Apr. 22, 1963 |
| President of the Queen's Privy Council for Canada. . | Hon. Maurice Lamontagne. | Apr. 22, 1963 |
| Minister of National Revenue. ${ }^{\text {a }}$. . ............... | Hon. John Richard Garland | Apr. 22, 1963 |
| Associate Minister of National Defence............ | Hon. Lucien Cardin. | Apr. 22, 1963 |
| Minister of Labour | Hon. Allan Josepri MacEachen | Apr. 22, 1963 |
| Minister of Public Wor | Hon. Jean-Paul Deschatelets. | Apr. 22, 1963 |
| Minister of Fisheries. | Hon. Hédard Robichadd. | Apr. 22, 1963 |
| Solicitor General. | Hon. J. Watson MacNadght | Apr. 22, 1963 |
| Minister of Veterans Affairs | Hon. Roger Temlet. | Apr. 22, 1963 |
| Minister of National Health and We | Hon. Jody Lamarsh. | Apr. 22, 1963 |
| Minister of Defence Production. | Hon. Charles Mmls | Apr. 22, 1963 |
| Minister of Citizenship and Immigration | Hon. Guy favreat | Apr. 22, 1963 |
| Minister of Forestry................ | Hon. John Robert Nicholso | Apr. 22, 1963 |
| Minister of Agriculture. | Hon. Harry Hays. | Apr. 22, 1963 |
| Minister without Portfolio. | Hon. Rene Tremblay | Apr. 22, 1963 |

${ }^{1}$ Any changes occurring between Apr. 30, 1963 and the date of going to press will be carried in an Appendix to this volume.

Parliamentary Secretaries.-As provided by the Parliamentary Secretaries Act (SC 1959, c. 15), assented to June 4, 1959, 15 Parliamentary Secretaries were appointed (one on Aug. 20, 1959 and 14 on Nov. 18, 1959) from among the Members of the House of Commons to assist the respective Ministers in such manner as each Minister may direct. In so doing, the Government revived the system of parliamentary assistantships in practice during the war 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.

On May 14, 1963, His Excellency the Governor General in Council, on the recommendation of the Prime Minister, announced the appointment of the following:-


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 110 members sworn of the Council by the Governor 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 Council for Canada According to Seniority Therein, as at Apr. 30, 1963

| President of the Privy Council | Hon. Maurice Lamontagne |
| :---: | :---: |
| Clerk of the Privy Council and Secretary to the Cabinet. | R. B. Bryce |
|  | A. M. Hru |

Note.-In this list the prefix "Rt. Hon." indicates membership in the British Privy Council.

| Member ${ }^{1}$ | Date When Sworn In | Member ${ }^{1}$ | Date When Sworn In |
| :---: | :---: | :---: | :---: |
| Hon. Thomas Alexander Crera | Oct. 12, 1917 | Hon. Jean Lesage | Sept. 17, 1953 |
| Hon. Henry Herbert Stevens. | Sept. 21, 1921 | Hon. George Carlyle Marle | July 1, 1954 |
| Hon. Edward James McMurra | Nov. 14, 1923 | Hon. Roch Pinard | July 1, 1954 |
| Rt. Hon. Charles Vincent Masse | Sept. 16, 1925 | Hon. Herbert J. Symington | Nov. 26, 1956 |
| H.R.H. The Duke of Windsor | Aug. 2, 1927 | Hon. Louis René Beaddoin........... | Apr. 15, 1957 |
| Hon. Donald Matheson Sutherland. | Aug. 7, 1930 | Hon. Paul Theodore Hellyer ${ }^{2}$. . . . . | Apr. 26, 1957 |
| Hon. Thomas Gerow Murphy. | Aug. 7, 1930 | Rt. Hon. John George Diefenbaker. | June 21, 1957 |
| Hon. William Earl Rowe | Aug. 30, 1935 | Hon. Howard Charles Green. | June 21, 1957 |
| Hon. Charles Gavan Pow | Oct. 23, 1935 | Hon. Donald Methuen Fleming..... | June 21, 1957 |
| Rt. Hon. James Lorimer Ilsl | Oct. 23, 1935 | Hon. Alfred Johnson Brooks....... | June 21, 1957 |
| Hon. Joseph Enoll Michaud | Oct. 23, 1935 | Hon. George Hees. | June 21, 1957 |
| Hon. Colin William George Gibson | July 8, 1940 | Hon. Léon Balcer. | June 21, 1957 |
| Hon. Joseph Thorarinn Thorson. | June 11, 1941 | Hon. George Randolp | June 21, 1957 |
| Hon. William Ferdinand Alphonse |  | Hon. Gordon Churchill | June 21, 1957 |
| Turgeon. | Oct. 8, ${ }_{\text {Dec }} 19,1941$ | Hon. Edmund Davie fulton. . . . . . . | June 21, ${ }^{\text {June }}$ 21, 1957 |
| Rt. Hon. Sir Winston Leonard |  | Hon. Douglas Scott Harkness | June 21, 1957 |
| Spencer Churchill...... | Dec. 29, 1941 | Hon. Ellen Louks Fairclouge | June 21, 1957 |
| Hon. Andrew George Latta |  | Hon. J. Angus Maclean | June 21, 1957 |
| McNaughton | Nov. 2, 1944 | Hon. Michael Starr | June 21, 1957 |
| Hon. Joseph Arthur | Apr. 18, 1945 | Hon. William Mclean H | June 21, 1957 |
| Hon. Lionel Chevrier ${ }^{2}$ | Apr. 18, 1945 | Hon. James MacKerras Macdonnell. | June 21, 1957 |
| Hon. Paul Joseph James Martin ${ }^{2}$ | Apr. 18, 1945 | Hon. William J. Browne............... | June 21, 1957 |
| Hon. Douglas Charles Abbott. | Apr. 18, 1945 | Hon. Paul Comtois................... | Aug. 7, 1957 |
| Hon. Thomas Vien | July 19, 1945 | Hon. Jay Waldo Monteith | Aug. 22, 1957 |
| Hon. Wishart McLea Robert | Sept. 4, 1945 | Hon. Francis Alvin Georg |  |
| Hon. Milton Fowler Gregg | Sept. 2, 1947 | Hamilton | Aug. 22, 1957 |
| Hon. Robert Wellington Mayhew.. Rt. Hon Lester Bowles Pearson 3 | $\begin{array}{ll} \text { June 11, } \\ \text { Sont } & 1948 \\ \hline \end{array}$ | H.R.H. The Prince Philip, Duke of Edinburgh | Oct. 14, 1957 |
| Hon. Stuart Sinclair Garson...... | Nov. 15, 1948 | Hon. Raymond Joseph Michael |  |
| Hon. Robert Henry Winters | Nov. 15, 1948 | O'Hurley. . . . . . . . . . . . . . . . . . . | May 12, 1958 |
| Hon. Frederick Gordon Bradi | Apr. 1, 1949 | Hon. Henri Courtemanche........... | May 12, 1958 |
| Hon. Charles Jost Burc | Apr. 1, 1949 | Hon. David James Walker. $\because . . . . .$. |  |
| Hon. Hugues Lapointe.... | Aug. 25, 1949 | Hon. Joseph Pierre Albert Sévigny. | $\begin{aligned} & \text { Aug. 20, } 1959 \\ & \text { Oct. } 11,1960 \end{aligned}$ |
| Hon. Gabriel Edouard Rinfr | Aug. 25, 1949 | Hon. Hugh John Fl <br> Hon. Noël Dorion. | $\begin{aligned} & \text { Oct. } \\ & \text { Oct. } \\ & \text { Oc, } \end{aligned} 19600$ |
| Hon. Walter Edward H <br> Hon. George Prudham. | Jan. 18, 1950 | Hon. Noél Dorion.... | Oct. 11, 1960 |
| Hon. George Black. | Aug. 3, 1951 | Hon. George Ernest Hal | Oct. 11, 1960 |
| Earl Alexander of | Jan. 29, 1952 | Hon. Robert Henry McGregor | Dec. 21, 1960 |
| Hon. James Sinclair | Oct. 15, 1952 | Hon. Walter Morley Aseltine. | Dec. 28, ${ }^{1961}$ |
| Hon. Ralph Osborne Campney | Oct. 15, 1952 | Hon. Leslie Miscampbel |  |
| Hon. William Ross Macdonald ${ }^{2}$ | May 12, 1953 | Hon. Jacques Flynn |  |
| Hon. George Alexander | May 12, 1953 | Hon. John Bra | $\begin{array}{ll} \text { May } & 4,1962 \\ \text { Aug. } & 9,1962 \end{array}$ |

## 5.-Members of the Queen's Privy Council for Canada According to Seniority Therein, as at Apr. 30, 1963-concluded

| Member ${ }^{1}$ | Date When Sworn In | Member ${ }^{1}$ | Date When Sworn In |
| :---: | :---: | :---: | :---: |
| Hon. Richard Albert Bell | Aug. 9, 1962 | Hon. John Richard Garland ${ }^{2}$ | Apr. 22, 1963 |
| Hon. Malcolm Wallace McCutcheon. | Aug. 9, 1962 | Hon. Lucien Cardin ${ }^{2}$ | Apr. 22, 1963 |
| Hon. Mark Robert Drouin | Oct. 15, 1962 | Hon. Allan Joseph Maceachen ${ }^{2}$ | Apr. 22, 1963 |
| Hon. Roland Michener | Oct. 15, 1962 | Hon. Jean-Paul Deschatelets ${ }^{2}$. | Apr. 22, 1963 |
| Hon. Marcel Lambert. | Feb. 12, 1963 | Hon. Hédard Robichaud ${ }^{2}$. | Apr. 22, 1963 |
| Hon. Théogène Ricard | Mar. 18, 1963 | Hon. J. Watson MacNaught ${ }^{\text {a }}$ | Apr. 22, 1963 |
| Hon. Frank Charles M | Mar. 18, 1963 | Hon. Roger Telletet ${ }^{2}$. | Apr. 22, 1963 |
| Hon. Martial Asselin............. ${ }^{2}$ | Mar. 18, Apr. 22, 1963 | Hon. Judy LaMarsh ${ }^{\text {2 }}$. | Apr. 22, 1963 |
| Hon. Mitchell SharP ${ }^{2}$. . . . . . . . | Apr. 22, 1963 | Hon. Charles Mills Drury ${ }^{2}$ | Apr. 22, 1963 |
| Hon. Azellus Denis ${ }^{2}$. | Apr. 22, 1963 | Hon. Guy Favreau ${ }^{2}$.......... | Apr. 22, 1963 |
| Hon. George James McIlraith ${ }^{2}$. | Apr. 22, 1963 | Hon. John Robert Nicholson ${ }^{2}$ | Apr. 22, 1963 |
| Hon. William Moore Benidickson ${ }^{2}$ | Apr. 22, 1963 | Hon. Harry Hays ${ }^{2}$. | Apr. 22, 1963 |
| Hon. Arthur Laing ${ }^{2}$. | Apr. 22, 1963 | Hon. René Tremblay ${ }^{2}$. | Apr. 22, 1963 |
| Hon. Maurice Lamontagne ${ }^{2}$ | Apr. 22, 1963 | Hon. Robert Taschereau | Apr. 26, 1963 |

${ }^{1}$ Members of Her Majesty's Privy Council for Canada take rank inter se according to the dates of their being sworn in. $\quad{ }^{2}$ Ranks as a Member of the Cabinet. $\quad{ }^{3}$ Ranks as the Prime Minister of Canada.

## 6.-Duration and Sessions of Parliaments, 1945-63

Note.-Similar information for the 1st to the 12th Parliaments, covering the period from Confederation to 1917, is given in the 1940 Year Book, p. 46; that for the 13th to 17th Parliaments in the 1945 edition, p. 53; and for the 18th and 19th Parliaments in the 1957-58 edition, p. 46.


[^21]
## 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 Bills 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. XXVI for current legislation.)

Under Sect. 91 of the British North America Acts, 1867 to 1960, the legislative authority of the Parliament of Canada extends to the following matters: the amendment of the Constitution of Canada (subject to certain exceptions); 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 British 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 jurisdiction, 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 might 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.

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 traced in the 1940 Year Book, pp. 47-49, and is summarized by province in Table 7.

Senators are appointed for life by the Governor General by instrument under the Great Seal of Canada on the recommendation of the Prime Minister. The actual power of appointing Senators resides by constitutional usage in the Prime Minister whose advice the Governor General accepts in this regard. 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.

## 7.-Representation in the Senate since Confederation, 1867

| Province |  |
| ---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |

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.

## 8.-Members of the Senate, by Province, as at Apr. 30, 1963¹

| Speaker. | Hon. Maurice Bourget |
| :---: | :---: |
| Leader of the Government. | Hon. Whliam Ross Macdonald |
| Leader of the Opposition. | Hon. Alfred J. Brooks |
| Clerk of the Senate and Cle | Join Forres MacNeml |

(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( 6 Senators) |  | Nova Scotia-concluded | North Sydney |
| Baird, Alexander Boyd. | St. John's | O'Leary, Clement A.. | Antigonish |
| Pratt, Calbert C. | St. John's | Welch, Frank C.. | Wolfville |
| Basha, Micharl G............ | Curling |  |  |
| Bradle y, Frederick Gordon | Bonavista | New Brunswick- |  |
| Higains, John G. | St. John's | (10 Senators) |  |
| Prince Edward Island- | St. John's | Mchiot, Clarence foseph... | Saint John |
| Prince Edward Island(4 Senators) |  | Burchill, George Percival. | South Nelson |
| Grant, Thomas Vincent | Montague | Fergusson, Muriel McQueen | Fredericton |
| Inman, F. Elsir... | Montague | Savore, Calixte F.. | Moncton |
| MacDonald, John J. | Charlottetown | Taylor, Austin Claude | Salisbury |
| Philuips, Orville Howard. | Alberton | Emerson, Clarence V | Saint John |
| Nova Scotia- |  | Brooks, Alfred | Sussex |
| (10 Senators) |  | Fournier, Edgar | Iroquois |
| Robertson, Wishart McLea | Truro | Quebec |  |
| Kinley, John James... | Lunenburg | (23 Senators-1 vacancy) |  |
| Comeau, Josepi Wille | Comeauville | Raymond, Donat................ | Montreal |
| Isnor, Gordon B. | Halifax | Hugessen, Adrian Kinatchbull.. | Montreal |
| Smith, Donald... | Liverpool | Howard, Charles Benjamin. | Sherbrooke |
| Blois, Frederick M | Trura | Goun, Thomas........ | Outremont |

For footnote, see end of table, p. 74.
8.-Members of the Senate, by Province, as at Apr. 30, 1963-concluded

| Province and Name of Senator | P.O. Address | Province and Name of Senator | P.O. Address |
| :---: | :---: | :---: | :---: |
| Quebec-concluded |  | Ontario-concluded |  |
| Vaillancourt, Cyrille | Lévis | Grosart, Allister. | Ottawa |
| Dupuis, Vincent | Montreal | Robertson, John A | Kenora |
| Dessureault, Jean Marie | Quebec | Walier, David J. | Toronto |
| Bouffard, Paul Henri.. | Quebec | Belisle, Rheal.. | Sudbury |
| Jodoin, Mariana Beadchamp... Tremblay, Leonard D. Sweeze | Montreal <br> St. Malachie | Manitoba- |  |
| Fournier, Sarto... | Montreal | (6 Senators) |  |
| Molson, H. de M. | Montreal | Beaubien, Arthur Lucien........ | St. Jean Baptiste |
| Power, C. G. | Quebec | Crerar, Thomas Alexander. | Winnipeg |
| Pouliot, Jean François | Rivière du Loup | Thorvaldson, Gunnar S. | Winnipeg |
| Lefrangois, J. Eugène. | Montreal | Irvine, Olive L. | Winnipeg |
| Drouin, Mark Robert | Quebec | Yuzik, Paul.. | Winnipeg |
| Méthot, Léon.. | Trois Rivières | Haig, J. Campbell. | Winnipeg |
| Monette, Gustave | Montreal |  |  |
| Quart, Josie A. Beaubien, Louis P | Sillery <br> Montreal | Saskatchewan(6 Senators) |  |
| Flynn, Jacques. | Quebec | Horner, Ralph Byron. | Blaine Lake |
| Bourget, Maurice. | Lévis | Aselitine, Walter Morley | Rosetown |
| Ontario- |  | Boud ${ }^{\text {beren William Alber }}$ | Prince Albert |
| (23 Senators-1 vacancy) |  | Pearson, Arthur M. | Lumsden |
| Lambert, Norman Platt. | Ottawa | Hnatyshyn, John.................... | Saskatoon |
| Hayden, Salter Adrian..... | Toronto |  |  |
| Paterson, Norman McLeod. | Fort William | Alberta- |  |
| Davies, William Rupert. | Toronto | (6 Senators) |  |
| Campbell, Gordon Peter. | Toronto | Blais, Aristide. | Edmonton |
| Taylor, William Horace. | Brantford | Gershaw, Fred William | Medicine Hat |
| Bishop, Charles Lawrence. | Ottawa | Stambaugh, J. Wesley.. | Bruce |
| Roebuck, Arthur Wentworth. | Toronto | Cameron, Donald. | Edmonton |
| Woodrow, Allan L. | Toronto | Gladstone, James | Cardston |
| Macdonald, William Ross. | Brantford | Buchanan, John A.................. | Edmonton |
| Connolly, John J. | Ottawa |  |  |
| Croll, David A. | Toronto | British Columbia- |  |
| Leonard, T. D'Arcy. | Toronto | (6 Senators) |  |
| White, George Stanley | Madoc | Farris, John Wallace de Beque... | Vancouver |
| Sullivan, Joseph A. | Toronto | Turgeon, James Gray. | Vancouver |
| Choquette, Lionel | Ottawa | Mc Keen, Stanley Stewart | Vancouver |
| Willis, Harry A. | Toronto | Reid, Thomas. | NewWestminster |
| MeCutcheon, M. Wa | Toronto | Hodges, Nancy | Victoria Kamloops |

${ }^{1}$ Any changes occurring between Apr. 30, 1963 and the date of going to press will be carried in an Appendix to this volume.

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 from time to time 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 basis 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 to provide representation on the following basis:-
"Sect. 51.-(1) Subject as hereinafter provided, the number of members of the House of Commons shall be two hundred and sixty-three and the representation of the provinces therein shall forthwith upon the coming into force of this section and thereafter on the completion of each decennial census be readjusted by such authority, in such manner, and from such time as the Parliament of Canada from time to time provides, subject and according to the following rules:-
" 1 . There shall be assigned to each of the provinces a number of members computed by dividing the total population of the provinces by two hundred and sixty-one and by dividing the population of each province by the quotient so obtained, disregarding, except as hereinafter in this section provided, the remainder, if any, after the said process of division.
" 2 . If the total number of members assigned to all the provinces pursuant to rule one is less than two hundred and sixty-one, additional members shall be assigned to the provinces (one to a province) having remainders in the computation under rule one commencing with the province having the largest remainder and continuing with the other provinces in the order of the magnitude of their respective remainders until the total number of members assigned is two hundred and sixty-one.
" 3 . Notwithstanding anything in this section, if upon completion of a computation under rules one and two, the number of members to be assigned to a province is less than the number of senators representing the said province, rules one and two shall cease to apply in respect of the said province, and there shall be assigned to the said province a number of members equal to the said number of senators.
"4. In the event that rules one and two cease to apply in respect of a province then, for the purpose of computing the number of members to be assigned to the provinces in respect of which rules one and two continue to apply, the total population of the provinces shall be reduced by the number of the population of the province in respect of which rules one and two have ceased to apply and the number two hundred and sixty-one shall be reduced by the number of members assigned to such province pursuant to rule three.
" 5 . On any such readjustment the number of members for any province shall not be reduced by more than fifteen per cent below the representation to which such province was entitled under rules one to four of this subsection at the last preceding readjustment of the representation of that province, and there shall be no reduction in the representation of any province as a result of which that province would have a smaller number of members than any other province that according to the results of the then last decennial census did not have a larger population; but for the purposes of any subsequent readjustment of representation under this section any increase in the number of members of the House of Commons resulting from the application of this rule shall not be included in the divisor mentioned in rules one to four of this subsection.
" 6 . Such readjustment shall not take effect until the termination of the then existing Parliament.
"(2) The Yukon Territory as constituted by chapter forty-one of the Statutes of Canada, 1901, shall be entitled to one member, and such other part of Canada not comprised within a province as may from time to time be defined by the Parliament of Canada shall be entitled to one member." (RSC 1952, c. 304.)

The principal effect of these latest rules is that the representation of any province shall not be reduced by more than 15 p.c. at any one readjustment, subject however to the qualification that the rule shall not work out in such manner that the representation of a province with a smaller population shall be greater than any province with a larger population.

Subsequently, Parliament enacted a measure, "An Act to readjust the Representation in the House of Commons, 1952", effective in the General Election of 1953, which provided that representation in the House of Commons shall be on the following basis:-
"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 for 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 sixty-five members." (RSC 1952, c. 334.)

The number of representatives of each province elected at each of the 26 General Elections since Confederation is given in Table 9.
9.-Representation in the House of Commons, as at Federal General Elections 1867-1963

| Province or Territory | 1867 | 1872 | $\begin{aligned} & 1874 \\ & 1878 \end{aligned}$ | 1882 | $\begin{aligned} & 1887 \\ & 1891 \end{aligned}$ | $\begin{aligned} & 1896 \\ & 1900 \end{aligned}$ | 1904 | $\begin{aligned} & 1908 \\ & 1911 \end{aligned}$ | $\begin{aligned} & 1917 \\ & 1921 \end{aligned}$ | $\begin{aligned} & 1925 \\ & 1926 \\ & 1930 \end{aligned}$ | $\begin{aligned} & 1935 \\ & 1940 \\ & 1945 \end{aligned}$ | 1949 | 1953 1957 1958 1962 1963 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Ontario. | 82 | 88 | 88 | 92 | 92 | 92 | 86 | 86 | 82 | 82 | 82 | 83 | 85 |
| Quebec. | 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 Brunswick | 15 | 16 | 16 | 16 | 16 | 14 | 13 | 13 | 11 | 11 | 10 | 10 | 10 |
| Manitoba. | $\ldots$ | 4 | 4 | 5 | 5 | 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 |
| Saskatchewan........... | $\ldots$ | $\ldots$ | $\cdots$ | $\cdots$ | 4 | 4 | 10 | 10 | 16 | 21 | $\stackrel{21}{17}$ | 20 17 | 17 |
| Alberta.......... | ... | ... | ... | $\ldots$ | 4 | 4 | 1 | 7 | 12 | 16 | 17 | 17 | 17 |
|  | ... | $\ldots$ | $\ldots$ | $\cdots$ | ... | ... | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Newfoundland............ | ... | $\ldots$ | ... | $\ldots$ | $\ldots$ | ... | ... | $\ldots$ | ... | ... | ... | 7 | 7 |
| Totals | 181 | 200 | 206 | 211 | 215 | 213 | 214 | 221 | 235 | 245 | 245 | 262 | 265 |

Under their parliamentary system of representation, based on a "constitution similar in principle to that of the United Kingdom", the people of Canada elect representatives having various political party affiliations. In a general election, the Canadian electorate not only determines what political party leader shall be called on to form the Government of the day, but it also decides which of the parties is to become the Official Opposition. Her Majesty's Loyal Opposition occupies an essential place in constitutions based on the British parliamentary system, in that its function is to oppose or criticize in debate the Government in power-an essential to good government at all times. The Official Opposition is founded, like such institutions as the Cabinet and the Prime Ministership, on unwritten custom that has become firmly established. Although the position of Leader of the Opposition is not recognized in the British North America Act, it received statutory acknowledgment in the Canadian Parliament in 1905 when the Senate and House of Commons Act (SC 1905, c. 43, Sect. 2) provided an additional sessional allowance to "the member occupying the recognized position of Leader of the Opposition in the House of Commons".

The final list of Members of the House of Commons as elected at the Twenty-Sixth General Election of Apr. 8, 1963, was not available at the time of the printing of this Chapter and will be placed in an Appendix to this volume.

Indemnities and Allowances.-Members of the Senate receive a sessional allowance at the rate of $\$ 8,000$ per annum. In addition they receive at the end of each calendar year an annual expense allowance of $\$ 2,000$ which is subject to income tax. The member of the Senate occupying the recognized position of 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 of Leader of the Opposition 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. Members of the House of Commons are paid a sessional allowance at the rate of $\$ 8,000$ per annum. In addition they receive $\$ 2,000$ as an expense allowance paid at the end of each calendar year. This allowance, except that for Ministers of the Crown and for the Leader of the Opposition in the House of Commons, is not subject to income tax. The remuneration of the Prime Minister is $\$ 25,000$ a year and of a Cabinet Minister and the Leader of the Opposition $\$ 15,000$ a year in addition to the sessional allowance and expense allowance each receives as a Member of Parliament. A Cabinet Minister is also entitled to a motor car allowance of $\$ 2,000$. The remuneration of a Minister without Portfolio is $\$ 7,500$ a year in addition to the sessional allowance and expense allowance, the latter taxable. 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 $\$ 9,000$ and a motor car allowance of $\$ 1,000$ and each is entitled to $\$ 3,000$ in lieu of a residence. The Deputy Speaker of the House of Commons receives a salary of $\$ 6,000$ and an allowance of $\$ 1,500$ in lieu of a residence. The Deputy Chairman of Committees receives an annual allowance of $\$ 2,000$. Parliamentary Secretaries to the Ministers of the Crown receive $\$ 8,000$ sessional allowance as Members of Parliament, \$4,000 a year as Parliamentary Secretaries and the $\$ 2,000$ expense allowance paid to all Members of Parliament.

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 Electoral Officer and the Assistant Chief Electoral 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 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.

## Subsection 3.-The Judiciary

## The Federal Judiciary

The Parliament of Canada is empowered by Sect. 101 of the British North America Act to provide from time to time 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.

## 10.-Chief Justice and Judges of the Supreme Court of Canada, as at Apr. 30, 1963

(In order of seniority)

| Name | $\begin{gathered} \text { Date } \\ \text { of } \\ \text { Appointment } \end{gathered}$ |
| :---: | :---: |
| Hon. Chief Justice Robert Taschereau. | Apr. 23, 19631 |
| Hon. Justice John R. Cartwright....... | Dec. 23, 1949 |
| Hon. Justice J. H. Gerald Fauteux. | Dec. 23, 1949 |
| Hon. Justice Douglas Charles Abbott | July 1, 1954 |
| Hon. Justice Ronald Martland........ | Jan. 15, 1958 |
| Hon. Justice Wilfred Judson.. | Feb. 5, 1958 |
| Hon. Justice Roland A. Ritchie | May 5, 1959 |
| Hon. Justice Emmett M. Hall. | Nov. 23, 1962 |

${ }^{1}$ First appointed as a Judge of the Supreme Court, Feb. 9, 1940.
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.

## 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 judges 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

[^22]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. In 1960 the two Acts were amended to provide for 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*

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. 68 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 LieutenantGovernor; 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 the age of 21 years who is a Canadian citizen or other British subject,

[^23]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. These qualifications apply with modifications to voters in most provinces. The principal exceptions give voting privileges to persons in Quebec and Saskatchewan at the age of 18 and in Alberta and British Columbia at 19 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 Nov. 19, 1962 is the 33rd in the history of Newfoundland and the 5th 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 Apr. 30, 1963.

The Premier receives a salary of $\$ 10,000$ and the other Cabinet Ministers $\$ 9,000$ per annum, plus a sessional indemnity of $\$ 3,333.33$ and a travelling and expense allowance of $\$ 2,166.66$. Each member of the House of Assembly receives a sessional indemnity of $\$ 3,333.33$ plus a travelling and expense allowance of $\$ 1,666.66$. An additional allowance of $\$ 3,000$ is made to the Leader of the Opposition.

## 11.-First Ministry of Newfoundland, as at Apr. 30, 1963

(Party standing at latest General Election, Nov. 19, 1962: 34 Liberal, 7 Progressive Conservative and 1 Independent.)

| Office | Name | Date of First Appointment | Date of Present Appointment |
| :---: | :---: | :---: | :---: |
| Premier and Minister of Economic Development. | Hon. J. R. Smallwood. | Apr. 1, 1949 | Apr. 1, 1949 |
| Attorney General | Hon. L. R. Curtis. | Apr. 1, 1949 | Apr. 1, 1949 |
| Minister of Mines, Agriculture and Resources | Hon. W. J. Keough | July 29, 1949 | May 1, 1957 |
| Minister of Labour........................... | Hon. C. H. Ballam. | Apr. 4, 1950 | Apr. 4, 1950 |
| Minister of Finance | Hon. E. S. Spencer. | July 29, 1949 | May 1, 1957 |
| Minister of Public Works | Hon. J. R. Chalker | Apr. 4, 1950 | May 1, 1957 |
| Minister of Highways. | Hon. F. W. Rowe. | May 21, 1952 | May 11, 1959 |
| Minister without Portfolio................... | Hon. P. J. Lewis | Dec. 15, 1951 | Dec. 15, 1951 |
| Minister of Public Welfare and Solicitor General | Hon. Myles P. Murray | Dec. 15, 1951 | $\left\{\begin{array}{lll} \text { Feb. } & 15, & 1963 \\ \text { Apr. } & 10, & 1955 \end{array}\right.$ |
| Minister of Provincial Affairs. | Hon. J. T. Chezseman. | May 1, 1957 | Feb. 15, 1963 |
| Minister of Health............ | Hon. J. M. McGrath. | July 5, 1956 | Aug. 7, 1956 |
| Minister of Municipal Affairs and Supply | Hon. B. J. Abbotr. . | May 1, 1957 | May 1, 1957 |
| Minister of Education. | Hon. G. A. Frecker | Aug. 26, 1959 | Aug. 26, 1959 |
| Minister of Fisheries. | Hon. C. M. Lane. | June 12, 1961 | Feb. 15, 1963 |

## Subsection 2.-Prince Edward Island

The Government of Prince Edward Island consists of a Lieutenant-Governor, an Executive Council and a Legislative Assembly. The Hon. F. W. Hyndman, LieutenantGovernor at Apr. 30, 1963, was commissioned to office Mar. 31, 1958. LieutenantGovernors from Confederation (1873) to 1959 are cited in the 1960 Year Book, p. 105.

The General Assembly elected Dec. 10, 1962 is the 50th in the history of Prince Edward Island Legislatures and the 25th since Confederation. It has 30 members from 15 electoral districts who serve for a statutory term of five years. One half of the members of the Legislative Assembly are elected on a property vote. Each district elects one

Councillor (elected on a property vote) and one Assembly member (elected on a general franchise vote). 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 $\$ 500$ fax free for expenses and travelling.

## 12.-Legislatures of Prince Edward Island, 1935-62, as at Apr. 30, 1963

Note.-Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 75, and for 1924-35 in the 1938 edition, p. 110.

| Date of Election |  | Legislature | Number of Sessions | Date of First Opening | Date of Dissolution |
| :---: | :---: | :---: | :---: | :---: | :---: |
| July | 23, 1935 | 18th. | 5 | Sept. 25, 1935 | Apr. 21, 1939 |
| May | 18, 1939 | 19th. | 4 | Mar. 20, 1940 | Aug. 20, 1943 |
| Sept. | 15, 1943 | 20th | 4 | Feb. 15, 1944 | Oct. 27, 1947 |
| Dec. | 11, 1947 | 21st. | 5 | Feb. 24, 1948 | Mar. 30, 1951 |
| Apr. | 26, 1951 | 22nd | 6 4 | Oct. 23, 1951 | Apr. 27, 1955 |
| Sept. | 1, 1959 | 24th | 4 | Mar. 1, 1960 | Nov. 8, 1962 |
| Dec. | 10, 1962 | 25th | 1 | Mar. 14, 1963 |  |

${ }^{1}$ Life of Legislature not expired at Apr. 30, 1963.
13.-Twenty-Fourth Ministry of Prince Edward Island, as at Apr. 30, 1963
(Party standing at latest General Election, Dec. 10, 1962: 19 Progressive Conservative and 11 Liberal.)

| Office | Name | Date of First Appointment | Date of Present Appointment |
| :---: | :---: | :---: | :---: |
| Premier and President of the Executive Council. | Hon. Walter R. Shaw.......... | Sept. 16, 1959 | Sept. 16, 1959 |
| Minister of Public Works and Minister of Highways. | Hon. J. Philp Matheson......... | Sept. 16, 1959 | Jan. 3, 1963 |
| Minister of Education. | Hon. L. George Dewar. | Sept. 16, 1959 | Jan. 3, 1963 |
| Minister of Industry and Natural Resources and Minister of Fisheries. | Hon. Leo F. Rossiter........... | Sept. 16, 1959 | Jan. 3, 1963 |
| Minister of Health. | Hon. Hubert B. McNeill. ...... | Sept. 16, 1959 | Jan. 3, 1963 |
| Provincial Treasurer, Attorney and Advocate General | Hon. M. Alban Farmer......... | Jan. 3, 1963 | Jan. 3, 1963 |
| Provincial Secretary, Minister of Tourist Development and Minister of Municipal Affairs. | Hon. J. David Stewart | Sept. 16, 1959 | Jan. 3, 1963 |
| Minister of Welfare and Labour. | Hon. Henry W. Wedge. | Sept. 16, 1959 | Jan. 3, 1963 |
| Minister of Agriculture....... | Hon. Andrew B. MacRae | Sept. 16, 1960 | Jan. 3, 1963 |

## Subsection 3.-Nova Scotia

The Government of Nova Scotia consists of a Lieutenant-Governor, an Executive Council and a House of Assembly. The Hon. H. P. MacKeen, Lieutenant-Governor at Apr. 30, 1963, was commissioned to office Mar. 1, 1963. Lieutenant-Governors from Confederation (1867) to 1959 are cited in the 1960 Year Book, p. 106.

The Legislature has 43 members elected for a maximum term of five years. The Legislature elected June 7, 1960 is the 47th in Nova Scotia's history and the 24th since Confederation. Premiers since Confederation are listed in the 1960 Year Book, p. 107.

The Premier of the province receives a salary of $\$ 12,000$ per annum and each Cabinet Minister a salary of $\$ 10,000$ per annum. Each member of the House of Assembly receives
a sessional indemnity of $\$ 3,200$ and an allowance of $\$ 1,600$ for expenses incidental to the discharge of his duties. The Leader of the Opposition receives an allowance of $\$ 6,000$ in addition to his sessional indemnity.

## 14.-Legislatures of Nova Scotia, 1933-61, as at Apr. 30, 1963

Nort.-Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 76, and for 1924-33 in the 1938 edition, p. 111.

| Date of Election |  | Legislature | Number of Sessions | Date of First Opening | Date of Dissolution |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 22, 1933 | 17th. | 4 | Mar. 1, 1934 | May 20, 1937 |
| June | 29, 1937 | 18th. | 4 | Mar. 1, 1938 | Sept. 19, 1941 |
| Oct. | 28, 1941 | 19th | 4 | Feb. 19, 1942 | Sept. 12, 1945 |
| Oct. | 23, 1945 | 20 th | 4 | Mar. 14, 1946 | Apr. 27, 1949 |
| June | 9, 1949 | 21st | 4 | Mar. 21, 1950 | Apr. 14, 1953 |
| May | 26, 1953 | 22nd | 3 | Feb. 24, 1954 | Sept. 20, 1956 |
| June | 30,1956 7,1960 | 24th. | 3 | Feb. 27, <br> Feb. 8, | Apr. 26, 1960 |

${ }^{1}$ Life of Legislature not expired at Apr. 30, 1963.
15.-Seventeenth Ministry of Nova Scotia, as at Apr. 30, 1963
(Party standing at latest General Election, June 7, 1960: 27 Progressive Conservative, 15 Liberal and 1 Co-operative Commonwealth Federation.)

| Office | Name | Date of First Appointment | Date of <br> Present Appointment |
| :---: | :---: | :---: | :---: |
| Premier and Minister of Education.......... | Hon. R. L. Stanfield............. | Nov. 20, 1956 | Nov. 20, 1956 |
| Minister of Finance and Economics and Chairman of the Nova Scotia Power Commission. | Hon. G. I. Smith. . . . . . . . . . . . . | Nov. 20, 1956 | $\left\{\begin{array}{lr} \text { May 2, } & 1962 \\ \text { Nov. 20, } & 1956 \end{array}\right.$ |
| Attorney General and Minister of Public Health. | Hon. R. A. Donahoe............. | Nov. 20, 1956 | Nov. 20, 1956 |
| Minister of Public Works and Minister of Highways. | Hon. S. T. Pyke................. | Nov. 20, 1956 | $\left\lvert\, \begin{array}{lll} \text { Nov. 20, } & 1956 \\ \text { May 2, } & 1962 \end{array}\right.$ |
| Minister of Agriculture and Marketing and Minister of Lands and Forests.............. | Hon. E. D. Haliburton......... | Nov. 20, 1956 | $\left\{\begin{array}{l} \text { Nov. 20, } \\ \text { July 27, } \\ 1959 \end{array}\right.$ |
| Minister of Trade and Industr | Hon. E. A. Manson. | Nov. 20, 1956 | Nov. 20, 1956 |
| Minister of Municipal Affairs and Minister of Labour. | Hon. N. L. Fergusson.......... | Nov. 20, 1956 | $\left\lvert\, \begin{array}{lrr} \text { July } & 27, & 1959 \\ \text { May } & 2, & 1962 \end{array}\right.$ |
| Provincial Secretary, Minister of Public Welfare and Minister in charge of Emergency Measures Organization............... | Hon. W. S. Kennedy Jones..... | Apr. 21, 1960 | $\left\{\begin{array}{lrr}\text { Oct. } & 20, & 1960 \\ \text { Oct. } & 20, & 1960 \\ \text { May } & 2, & 1962\end{array}\right.$ |
| Minister of Mines and Minister in charge of the Liquor Control Act...................... | Hon. Donald M. Smith. . . . . . . . | Oct. 13, 1960 | $\left\{\begin{array}{lll} \text { Dec. } & 12, & 1961 \\ \text { Oct. } & 13, & 1960 \end{array}\right.$ |
| Minister without Portfolio. | Hon. George A. Burridge...... | Oct. 13, 1960 | Oct. 13, 1960 |

## Subsection 4.-New Brunswick

The Government of New Brunswick has a Lieutenant-Governor, an Executive Council and a House of Assembly. The Hon. J. Leonard O'Brien, Lieutenant-Governor at Apr. 30, 1963, was commissioned to office June 6, 1958. Lieutenant-Governors since Confederation (1867) are cited in the 1960 Year Book, p. 108.

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 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.

## 16.-Legislatures of New Brunswick, 1935-63, as at Apr. 30, 1963

Note.-Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 77, and for 1924-35 in the 1938 edition, p. 112.

| Date of Election | Legislature | Number of Sessions | Date of First Opening | Date of Dissolution |
| :---: | :---: | :---: | :---: | :---: |
| June 27, 1935 | 11th. | 4 | Mar. 5, 1936 | Oct. 26, 1939 |
| Nov. 20, 1939 | 12th | 5 | Apr. 4, 1940 | July 10, 1944 |
| Aug. 28, 1944 | 13 th. | 4 | Feb. 20, 1945 | May 18, 1948 |
| June 28, 1948 | 14th. | 4 | Mar. 8, 1949 | July 16, 1952 |
| Sept. 22, 1952 June 18, 1956 | 15th. | 4 | Feb. 12, 1953 | Apr. 17, 1956 May 19, 1960 |
| June 27, 1960 | 17th. | 3 | Nov. 17, 1960 | Mar. 12, 1963 |
| Apr. 22, 1963 | 18th. | 1 |  |  |

Legislature not yet in session at Apr. 30, 1963.
17.-Twenty-Third Ministry of New Brunswick, as at Apr. 30, 1963
(Party standing at latest General Election, Apr. 22, 1963: 31 Liberal and 21 Progressive Conservative.)

| Office | Name | Date of First Appointment | Date of <br> Present Appointment |
| :---: | :---: | :---: | :---: |
| Premier and Attorney General | Hon. Louis J. Robichaud | July 12, 1960 | July 12, 1960 |
| Minister of Finance............. | Hon. L. G. DesBrisay. | July 12, 1960 | July 12, 1960 |
| Minister of Lands and Mine | Hon. H. G. Crocker. | July 12, 1960 | July 12, 1960 |
| Minister of Education | Hon. Henry G. Irwin | July 12, 1960 | July 12, 1960 |
| Minister of Public Work | Hon. Andrew F. Richard | July 12, 1960 | July 12, 1960 |
| Minister of Agriculture...... | Hon. J. Adrien Levesque | July 12, 1960 | July 12, 1960 |
| Minister of Health and Social Services | Hon. George L. Dumont. | July 12, 1960 | July 12, 1960 |
| Minister of Labour. | Hon. Kenneth J. Webber | July 12, 1960 | July 12, 1960 |
| Minister of Municipal Affairs..... | Hon. Joseph E. LeBlanc. | July 12, 1960 | July 12, 1960 |
| Chairman, New Brunswick Electric Power Commission. | Hon. Donald Harper | July 12, 1960 | July 12, 1960 |
| Minister of Youth and Welfare | Hon. William R. Duffie. | July 12, 1960 | Nov. 30, 1960 |
| Minister of Industry and Development. | Hon. Michel Fournier.. | July 12, 1960 | July 12, 1960 |

## 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. The Hon. Paul Comtois, Lieutenant-Governor at Apr. 30, 1963, was commissioned to office Oct. 6, 1961. Lieutenant-Governors from Confederation (1867) to 1959 are cited in the 1960 Year Book, p. 109.

The Legislative Council has 24 members nominated for life by the LieutenantGovernor in Council. The Legislative Assembly has 95 elected members and, like 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 Lieutenant-Governor 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 .

Each member of the Legislative Council and the Legislative Assembly receives a sessional indemnity of $\$ 6,700$, plus an expense allowance of $\$ 3,300$. In addition to this sessional indemnity and allowance, the Premier receives an annual indemnity of $\$ 12,000$, an expense allowance of $\$ 4,000$ and a lodging allowance of $\$ 2,000$; Ministers with Portfolio each receive an annual indemnity of $\$ 10,000$ plus a $\$ 5,000$ expense allowance; Ministers without Portfolio each receive an indemnity of $\$ 5,000$ plus a $\$ 2,000$ expense allowance; the Speaker of the Legislative Assembly receives an indemnity of $\$ 8,000$, an expense allowance of $\$ 1,000$ 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 $\$ 8,000$, an expense allowance of $\$ 2,000$ 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.

## 18.-Legislatures of Quebec, 1935-63, as at Apr. 30, 1963

Noтe.-Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 78, and for 1924-35 in the 1938 edition, p. 113.

| Date of Election | Legislature | Number of Sessions | Date of First Opening | Date of Dissolution |
| :---: | :---: | :---: | :---: | :---: |
| Nov. 25, 1935 | 19th | 1 | Mar. 24, 1936 | June 11, 1936 |
| Aug. 17, 1936 | 20th | 4 | Oct. 7, 1936 | Sept. 23, 1939 |
| Oct. 25, 1939 | 21st. | 5 | Feb. 20, 1940 | June 29, 1944 |
| Aug. 8, 1944 | 22nd. | 4 | Feb. 7, 1945 | June 9, 1948 |
| July 28, 1948 | 23rd | 4 | Jan. 19, 1949 | May 28, 1952 |
| July 16, 1952 | 24th. | 4 | Nov. 12, 1952 | Apr. 25, 1956 |
| June 20, 1956 | 25th. | 4 | Nov. 14, 1956 | Apr. 27, 1960 |
| June 22, 1960 | 26th | 3 | Sept. 20, 1960 | Sept. 19, 1962 |
| Nov. 15, 1962 | 27th | 1 | Jan. 15, 1963 |  |

${ }^{1}$ Life of Legislature not expired at Apr. 30, 1963.

## 19.-Twenty-Third Ministry of Quebec, as at Apr. 30, 1963

(Party standing at latest General Election, Nov. 15, 1962: 63 Liberal, 31 Union Nationale and 1 Independent.)

| Office | Name | Date of . First Appointment | Date of <br> Present Appointment |
| :---: | :---: | :---: | :---: |
| Premier, Minister of Finance and Minister of Federal-Provincial Affairs. |  |  |  |
| Attorney General and Minister of Cultural | Hon. Jean Lesage. | July 6, 1960 | Apr. 1, 1961 |
| Affairs. | Hon. Georges Lapalme. | July 6, 1960 | Apr. 1, 1961 |
| Minister of Labour | Hon. René Hamel | July 6, 1960 | July 6, 1960 |
| Minister of Youth | Hon. Paul Gérin-Lajoie | July 6, 1960 | July 6, 1960 |
| Minister of Agriculture and Colonization | Hon. Alcide Courcy. | July 6, 1960 | July 6, 1960 |
| Minister of Natural Resources. | Hon. René Lévesque. | July 6, 1960 | Apr. 1, 1961 |
| Minister of Provincial Revenue | Hon. Paul Earl. | July 6, 1960 | Apr. 1, 1961 |
| inister of Transportation and tions. | Hon. Gérard Cournoye | July 6, 1960 | July 6, 1960 |
| Minister of Roa | Hon. Bernard Pinard | July 6, 1960 | July 6, 1960 |
| Minister of Family and Social Wel | Hon. Emilien Lafrance | July 6, 1960 | July 6, 1960 |
| Provincial Secretary. | Hon. Bona Arsenault.. | July 6, 1960 | Apr. 3, 1963 |
| Minister of Health. | Hon. Alphonse Couturier | July 6, 1960 | July 6, 1960 |
| Minister of Tourism, Game and | Hon. Lionel Bertrand..... | July 6, 1960 | Apr. 3, 1963 |
| Minister of Industry and Co | Hon. Gérard D. Lévesque | July 6, 1960 | Dec. 5, 1962 |
| Minister of Lands and Fore | Hon. Lucien Cliche.. | Dec. 20, 1961 | Dec. 5, 1962 |
| Minister of Public Works | Hon. René Saint-Pierre | Mar. 28, 1961 | Mar. 28, 1961 |
| Minister of Municipal Affair | Hon. Pierre Laporte. | Dec. 5, 1962 | Dec. 5, 1962 |
| Minister without Portfolio | Hon. George C. Marler. | Oct. 8, 1960 | Oct. 8, 1960 |
| Minister without Portiol | Hon. Clatre KirklandCasgrain | Dec. 5, 1962 | Dec. 5, 1962 |
| Minister without Portfolio. | Hon. Carrier Fortin | Dec. 5, 1962 | Dec. 5, 1962 |

## 20.-Members of the Legislative Council of Quebec, as at Apr. 30, 1963

(According to seniority)

| Name | Division | $\begin{gathered} \text { Date } \\ \text { of } \\ \text { Appointment } \end{gathered}$ |
| :---: | :---: | :---: |
| R. O. Grothé. | De Salaberry. | Dec. 23, 1927 |
| Hector Laferte (Speaker) | Stadacona. | July 23, 1934 |
| J. L. Baribeau. | Shawinigan | Jan. 14, 1938 |
| Philippe Brais... | Grandville. | Feb. 16, 1940 |
| Joles Brillant. | Golfe. | Jan. 14, 1942 |
| Frank L. Connors | Mille Isles. | Jan. 14, 1942 |
| Félix Messier. | De Lanaudière. | Feb. 12, 1942 |
| Edouard Asselin | Wellington. | Jan. 23, 1946 |
| Geo. B. Foster. | Victoria. | Aug. 22, 1946 |
| Gérald Martineau | Lauzon | Aug. 22, 1946 |
| J. Olier Renaud. | Alma | Aug. 22, 1946 |
| Patrice Tardif. | De la Vallière. | July 20, 1952 |
| Joseph Boulanger. | De la Durantaye | Oct. 8, 1952 |
| Edouard Masson.. | Repentigny....... | Mar. 12, 1953 |
| Albert Bouchard | La Salle.... | Nov. 24, 1954 |
| Jean Barrette. | Sorel. | Oct. 19, 1955 |
| Emile Lesage.. | Montarville. | Aug. 1, 1956 |
| Albiny Paquette. | Rougemont. | Oct. 29, 1958 |
| John P. Rowat. | De Lorimier | Oct. 29, 1958 |
| Ernest Benoit. | Kennebec. | Apr. 8, 1959 |
| Antonio Auger | Les Laurentides | Sept. 30, 1959 |
| Oscar Grlbert. | Bedford. | Mar. 30, 1960 |
| Jean Raymond | Rigaud. | Apr. 27, 1960 |
| George C. Marler (Leader) | Inkerman | Oct. 8, 1960 |

## Subsection 6.-Ontario

The Government of Ontario consists of a Lieutenant-Governor, an Executive Council and a House of Assembly. The Hon. William Earl Rowe, Lieutenant-Governor at Apr. 30, 1963, was appointed effective Mar. 1, 1963. Lieutenant-Governors from Confederation (1867) to 1959 are cited in the 1960 Year Book, p. 112.

The House of Assembly, the single-chamber Legislature of the province, is composed of 98 members elected for a statutory term of five years. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 112.

Besides the regular departments of government, the Niagara Parks Commission, the Ontario Municipal Board, The Hydro-Electric Power Commission of Ontario, the Ontario-St. 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) each member of the Assembly is paid an annual indemnity of $\$ 5,000$ and an allowance of $\$ 2,000$ for expenses. 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. 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 receive 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, by the Executive Council Act and the Legislative Assembly Act, respectively (RSO 1960).

## 21.-Legislatures of Ontario, 1934-60, as at Apr. 30, 1963

Note.-Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 79, and for 1924-34 in the 1938 edition, p. 114.

| Date of Election | Legislature | Number of Sessions | Date of First Opening | Date of Dissolution |
| :---: | :---: | :---: | :---: | :---: |
| June 19, 1934 | 19th | 3 | Feb. 20, 1935 | Apr. 9, 1936 |
| Oct. 6, 1937 | 20th | 8 | Dec. 1, 1937 | June 30, 1943 |
| Aug. 4, 1943 | 21st. | 2 | Feb. 22, 1944 | Mar. 24, 1945 |
| 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 |
| June 9, 1955 | 25 th | 5 | Sept. 8, 1955 | May 4, 1959 |
| June 11, 1959 | 26th | 1 | Jan. 26, 1960 |  |

${ }^{1}$ Life of Legislature not expired at Apr. 30, 1963.

## 22.-Seventeenth Ministry of Ontario, as at Apr. 30, 1963

(Party standing at latest General Election, June 11, 1959: 71 Progressive Conservative, 22 Liberal and 5 Co-operative Commonwealth Federation.)
Nore.-Ministers are shown at date of original appointment as a Minister and at date of appointment to present portfolio, despite the formation of a new Ministry consequent upon the appointment of a new Premier.

| Office | Name | Date of First Appointment | Date of Present Appointment |
| :---: | :---: | :---: | :---: |
| Premier and President of the Council | Hon. John P. Robarts | Dec. 22, 1958 | Nov. 8, 1961 |
| Minister of Lands and Forests. | Hon. A. Kelso Roberts | Aug. 17, 1955 | Oct. 25, 1962 |
| Minister of Public Welfare | Hon. Louts P. Cecile. | Sept. 17, 1948 | Aug. 17, 1955 |
| Treasurer | Hon. James N. Allan. | Jan. 5, 1955 | Apr. 28, 1958 |
| Minister of Travel and Publicity | Hon. Bryan L. Cathcart. | Aug. 17, 1955 | Aug. 17, 1955 |
| Minister of Public Works. | Hon. T. Ray Connell.... | Nov. 1, 1956 | Dec. 22, 1958 |
| Minister of Health. | Hon. Matthew B. Dymond | July 18, 1957 | Dec. 22, 1958 |
| Minister of Municipal Affairs. | Hon. J. Whfrid Spooner. . | July 18, 1957 | Oct. 25, 1962 |
| Attorney General and Minister in charge of the Department of Insurance. | Hon. Frederick M. Cass. | Apr. 28, 1958 | Oct. 25, 1962 |
| Provincial Secretary and Minister of Citizenship. | Hon. John Yaremko. | Apr. 28, 1958 | May 26, 1960 |
| Minister of Energy Resources and Minister of Economics and Development............ | Hon. Robert W. Macaulay. | May 26, 1958 | $\left\{\begin{array}{lrr} \text { May } & \text { 5, } & 1959 \\ \text { Jan. } & 15, & 1962 \end{array}\right.$ |
| Minister of Mines. | Hon. George C. Wardrope. | Dec. 22, 1958 | Nov. 8, 1961 |
| Minister of Labour | Hon. H. Leslie Rowntree. | Nov. 21, 1960 | Oct. 25, 1962 |
| Minister without Portf | Hon. Allan Grossman | Nov. 21, 1960 | Nov. 21, 1960 |
| Minister of Agriculture | Hon. William A. Stewart...... | Nov. 21, 1960 | Nov. 8, 1961 |
| Minister of Highways. | Hon. Charles S. MacNaughton. | Nov. 8, 1961 | Oct. 25, 1962 |
| Minister of Reform In | Hon. Irwin Haskett. | Nov. 8, 1961 | Nov. 8, 1961 |
| Minister of Transpo | Hon. James A. C. Auld. Hon. Whliam G. Davis. | Oct. 25,1962 Oct. 25,1962 | Oct. 25,1962 Oct. 25, Oct. |
| Minister without Portfolio...................... | Hon. John R. Simonett. | Oct. 25, 1962 | Oct. 25, 1962 |

## Subsection 7.-Manitoba

In addition to a Lieutenant-Governor, Manitoba has an Executive Council at present composed of 11 members and a Legislative Assembly of 57 members elected for a statutory term of five years. The Hon. Errick F. Willis, Lieutenant-Governor at Apr. 30, 1963, was sworn in on Jan. 15, 1960. Lieutenant-Governors from Confederation (1870) to 1959 are cited in the 1960 Year Book, p. 113. Premiers since Confederation are listed in the 1960 Year Book, p. 114.

The Premier of the province is paid a salary of $\$ 12,000$ per annum and each of the other members of the Cabinet $\$ 10,000$. Members of the Legislature are each paid a sessional indemnity of $\$ 2,667$ and an expense allowance of $\$ 1,333$. The Leader of the Opposition is paid an additional amount of $\$ 3,500$ and the Speaker of the Legislature receives an amount double the indemnity and expense allowance of an individual member.

## 23.-Legislatures of Manitoba, 1936-62, as at Apr. 30, 1963

Nore.-Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 80, and for 1924-36 in the 1938 edition, p. 115.

| Date of Election | Legislature | Number of Sessions | Date of First Opening | Date of Dissolution |
| :---: | :---: | :---: | :---: | :---: |
| July 27, 1936 | 20th. | 5 | Feb. 18, 1937 | Mar. 13, 1941 |
| Apr. 22, 1941 | 21st. | 5 | Dec. 9, 1941 | Sept. 8, 1945 |
| Oct. 15, 1945 | 22nd. | 4 | Feb. 19, 1946 | Sept. 29, 1949 |
| Nov. 10, 1949 | 23 rd . | 7 | Feb. 14, 1950 | Apr. 23, 1953 |
| June 8, 1953 | 24th | 5 | Feb. 2, 1954 | Apr. 30, 1958 |
| June 16, 1958 | 25th |  | Oct. 23, 1958 | Mar. 31, 1959 |
| May 14, 1959 | 26th | 5 | June 9, 1959 | Nov. 9, 1962 |
| Dec. 14, 1962 | 27th | 1 | Feb. 28, 1963 |  |

${ }^{1}$ Life of Legislature not expired at Apr. 30, 1963.
24.-Fifteenth Ministry of Manitoba, as at Apr. 30, 1963
(Party standing at latest General Election, Dec. 14, 1962: 35 Progressive Conservative, 13 Liberal, 8 New Democratic Party and 1 Social Credit.)

| Office | Name | Date of First Appointment | Date of <br> Present Appointment |
| :---: | :---: | :---: | :---: |
| Premier and Acting Provincial Treasurer.... | Hon. Duff Rorlin.. | June 30, 1958 | June 30, 1958 |
| Provincial Secretary and Minister of Industry and Commerce. | Hon. Edward Gurney V. Evans | June 30, 1958 | $\left\{\begin{array}{lrr} \text { Dec. } & 17, & 1959 \\ \text { Aug. } & 7, & 1959 \end{array}\right.$ |
| Minister of Education. | Hon. Stewart E. McLean | June 30, 1958 | June 30, 1958 |
| Attorney-General and Minister of Public Utilities. | Hon. Sterling R. Lyon | June 30, 1958 | $\left\{\begin{array}{lll}\text { June } & 30,1958 \\ \text { Oct. } & 31,1961\end{array}\right.$ |
| Minister of Health. | Hon. George Johnson. | June 30, 1958 | June 30, 1958 |
| Minister of Welfare. | Hon. J. B. Carroll. | June 30, 1958 | Feb. 27, 1963 |
| Minister of Mines and Natural Resources.... | Hon. C. H. Witney | Aug. 7, 1959 | Aug. 7, 1959 |
| Minister of Agriculture and Conservation.... | Hon. George Hutton | Aug. 7, 1959 | Aug. 7, 1959 |
| Minister of Public Works. | Hon. Walter Weir | Oct. 31, 1961 | Nov. 5, 1962 |
| Minister of Labour. | Hon. Orie Baizley | Feb. 27, 1963 | Feb. 27, 1963 |
| Minister of Municipal Affairs. | Hon. R. G. Smellie | Feb. 27, 1963 | Feb. 27, 1963 |
| Minister without Portfolio. | Hon. A. W. Harrison | Feb. 27, 1963 | Feb. 27, 1963 |

## Subsection 8.-Saskatchewan

The Government of Saskatchewan consists of a Lieutenant-Governor, an Executive Council and a Legislative Assembly. The Hon. Robert L. Hanbidge, Lieutenant-Governor at Apr. 30, 1963, was commissioned to office Mar. 1, 1963. Lieutenant-Governors from Confederation (1905) to 1959 are cited in the 1960 Year Book, p. 115.

The statutory number of members of the Legislative Assembly is 55, elected for a maximum term of five years. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 115.

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.

## 25.-Legislatures of Saskatchewan, 1934-60, as at Apr. 30, 1963

Nors.-Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 81, and for 1924-34 in the 1938 edition, p. 116.

| Date of Election |  | Legislature | Number of Sessions | Date of First Opening | Date of Dissolution |
| :---: | :---: | :---: | :---: | :---: | :---: |
| June | 19, 1934 | 8th. | 4 | Nov. 15, 1934 | May 14, 1938 |
| June | 8, 1938 | 9th | 6 | Jan. 19, 1939 | May 10, 1944 |
| June | 15, 1944 | 10th. | 5 | Oct. 19, 1944 | May 19, 1948 |
| June | 24, 1948 | 11 th | 5 | Feb. 10, 1949 | May 7, 1952 |
| June | 11, 1952 | 12th. | 4 | Feb. 12, 1953 | Apr. 25, 1956 |
| June | 20,1956 8,1960 | 14th | ${ }_{1}^{4}$ | Feb. 14, 1957 Oct. 11, 1960 | May ${ }_{1} \mathbf{4}, 1960$ |

${ }^{1}$ Life of Legislature not expired at Apr. 30, 1963.

## 26.-Ninth Ministry of Saskatchewan, as at Apr. 30, 1963

(Party standing at latest General Election, June 8, 1960: 38 Co-operative Commonwealth Federation and 17 Liberal.)
Nork.-Ministers are shown at date of original appointment as a Minister and at date of appointment to present portfolio, despite the formation of a new Ministry consequent upon the appointment of a new Premier.

| Office | Name | Date of First Appointment | Date of Present Appointment |
| :---: | :---: | :---: | :---: |
| Premier and President of the Executive Council | Hon. W. S. Lloyd | July 10, 1944 |  |
| Provincial Treasurer............................ | Hon. J. H. Brockelbank | July 10, 1944 | Sept. 7, 1962 |
| Minister of Public Heal | Hon. A. E. Blakeney. | Aug. 1, 1960 | Sept. 7, 1962 |
| Minister of Labour and Minister of Telephones | Hon. C. C. Whlinms. | July 10, 1944 | $\begin{aligned} & \text { Nov. 13, } \\ & \text { Nuly 27, } \\ & \text { J } 2956 \end{aligned}$ |
| Minister of Agriculture | Hon. I. C. Nollet | Jan. 8, 1946 | Jan. 8, 1946 |
| Minister of Mineral Resource | Hon. A. G. Kuzink | Oct. 24, 1952 | Nov. 19, 1962 |
| Attorney General and Provincial Secretary... | Hon. R. A. Walker. | July 27, 1956 | $\left\{\begin{array}{lll} \text { July } & 27, & 1956 \\ \text { Aug. } & 30, & 1957 \end{array}\right.$ |
| Minister of Industry and Information. | Hon. R. Brown. | July 27, 1956 | Apr. 1, 1960 |
| Minister of Highways and Transportation... | Hon. C. G. Wrisis. | Aug. 31, 1956 | Aug. 1, 1960 |
| Minister of Social Welfare and Rehabilitation. | Hon. A. M. Nicholson | July 11, 1960 | July 11, 1960 |
| Minister of Education. . . . . . . . . . . . . . . . . . . | Hon. O. A. Turnbull. | July 11, 1960 | Nov. 7, 1961 |
| Minister of Public Works.................... | Hon. W. G. Davirs | Aug. 29, 1960 | Sept. 7, ${ }^{\text {7 }} 1962$ |
| Minister of Municipal Affairs <br> Minister of Co-operation and Co-operative | Hon. E. I. Wood. | Nov. 21, 1961 | Nov. 21, 1961 |
| ( Dinister of Natural Resources..................................... | Hon. F. Mrare | Sept. 7, 1962 Nov. 19, 1962 | $\begin{aligned} & \text { Sept. 7, } 1962 \\ & \text { Nov. 19, } 1962 \end{aligned}$ |

## Subsection 9.-Alberta

The Government of Alberta is composed of a Lieutenant-Governor, an Executive Council and a Legislative Assembly. There are $65^{*}$ members in the Legislative Assembly, elected for a maximum period of five years. The Hon. J. Percy Page, Lieutenant-Governor at Apr. 30, 1963, was commissioned to office Dec. 19, 1959. Lieutenant-Governors since Confederation (1905) are listed in the 1960 Year Book, p. 116. Premiers since Confederation are listed in the same edition, p. 117.

Each member of the Legislative Assembly (except the Speaker and the Deputy Speaker) receives a sessional indemnity of $\$ 3,000$ plus $\$ 1,500$ expense allowance plus $\$ 15$ for each day during the session when he is necessarily absent from his ordinary place of residence, both tax free. The Speaker's sessional indemnity is $\$ 4,750$ plus $\$ 2,250$ expense allowance and the Deputy Speaker's sessional indemnity is $\$ 4,000$ plus $\$ 2,000$ 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 $\$ 14,000$, each of the other Ministers receives $\$ 11,000$ and each member of the Opposition receives $\$ 625$; there is no Opposition Leader in the present Legislature.

[^24]
## 2\%.-Legislatures of Alberta, 1935-60, as at Apr. 30, 1963

Note.-Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 82, and for 1924-34 in the 1938 edition, p. 117.

| Date of Election | Legislature | Number of Sessions | Date of First Opening | Date of Dissolution |
| :---: | :---: | :---: | :---: | :---: |
| Aug. 22, 1935 | 8th. | 9 | Feb. 6, 1936 | Feb. 16, 1940 |
| Mar. 21, 1940 | 9 th. | 4 | Feb. 20, 1941 | July 7, 1944 |
| Aug. 8, 1944 | 10th. | 5 | Feb. 22, 1945 | July 16, 1948 |
| Aug. 17, 1948 | 11th. | 5 | Feb. 17, 1949 | June 28, 1952 |
| Aug. 5, 1952 | 12th. | 3 | Feb. 19, 1953 | May 12, 1955 |
| June 29, 1955 | 13th. | 5 | Aug. 17, 1955 | May 9, 1959 |
| June 18, 1959 | 14th. | 5 | Feb. 11, 1960 | May 9, 1963 |

## 28.-Eighth Ministry of Alberta, as at Apr. 30, $1963{ }^{1}$

(Party standing at latest General Election, June 18, 1959: 61 Social Credit, 1 Liberal, 1 Progressive Conservative, 1 Coalition and 1 Independent Social Credit.) ${ }^{1}$

| Office | Name | Date of First Appointment | Date of Present Appointment |
| :---: | :---: | :---: | :---: |
| Premier and President of Council and Attorney General. | Hon. Ernest C. Manning. | Sept. 3, 1935 | $\left\{\begin{array}{lr} \text { May } & 31, \\ \text { Aug. } & 1943 \\ \hline 1955 \end{array}\right.$ |
| Minister of Municipal Affairs. | Hon. Alfred J. Hooke. | Apr. 20, 1945 | Aug. 2, 1955 |
| Minister of Highways. | Hon. Gordon E. Taylor. | Dec. 27, 1950 | May 1, 1951 |
| Minister of Education. | Hon. Anders O. Aalborg. | Sept. 9, 1952 | Sept. 9, 1952 |
| Minister of Public Welfare. | Hon. Leonard C. Halmrast. | Jan. 3, 1953 | Oct. 15, 1962 |
| Minister of Lands and Forests. | Hon. Norman A. Willmore | Nov. 10, 1953 | Aug. 2, 1955 |
| Provincial Treasurer. | Hon. Edgar W. Hinman | Dec. 23, 1954 | Aug. 2, 1955 |
| 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............. | Hon. A. Russell Patrick | Aug. 2, 1955 | $\left\{\begin{array}{l}\text { Sept. 1, } 1959 \\ \text { Oct. 15, } 1962\end{array}\right.$ |
| Minister of Labour and Minister of Telephones. | Hon. Raymond Reierson....... | Aug. 2, 1955 | Sept. 22, 1959 |
| Minister of Health. | Hon. Dr. J. Donovan Ross. | Sept. 18, 1957 | Sept. 18, 1957 |
| Minister of Agriculture..................... | Hon. Harry E. Strom | Oct. 15, 1962 | Oct. 15, 1962 |
| Provincial Secretary.. | Hon. Ambrose Holowac | Oct. 15, 1962 | Oct. 15, 1962 |
| Minister without Portfolio. | Hon. Ira McLaughiln | Nov. 30, 1962 | Nov. 30, 1962 |
| Minister without Portfolio. | Hon. Ethel S. Winso | Nov. 30, 1962 | Nov. 30, 1962 |

[^25]
## 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, 1963, was commissioned to office Oct. 13, 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 52 members. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 118.

Each member of the Executive Council and the Legislative Assembly receives a sessional allowance of $\$ 4,000$ and $\$ 1,000$ for expenses. There is also paid to each member a living allowance of $\$ 25$ for each day's attendance at the session and for each Saturday, Sunday or holiday that intervenes between two sittings of the House; the allowance of $\$ 25$ in any session is not paid in respect of more than 40 days. Each member also 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 $\$ 400$ for telegraph and telephone expenses. In addition, the Premier receives a salary of $\$ 17,500$ and each member of the Executive Council $\$ 15,000$. The Leader of the Opposition has a special allowance of $\$ 5,000$ for expenses, the Speaker receives a special allowance of $\$ 5,000$ and the Deputy Speaker an allowance of $\$ 1,500$.

## 29.-Legislatures of British Columbia, 1937-61, as at Apr. 30, 1963

Notz.-Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 83, and for 1924-37 in the 1938 edition, p. 118.

| Date of Election | Legislature | Number of Sessions | Date of First Opening | Date of Dissolution |
| :---: | :---: | :---: | :---: | :---: |
| June 1, 1937 | 19th. | 5 | Oct. 26, 1937 | July 22, 1941 |
| Oct. 21, 1941 | 20th. | 4 | Dec. 4, 1941 | Aug. 31, 1945 |
| Oct. 25, 1945 | 21st. | 5 | Feb. 21, 1946 | Apr. 16, 1949 |
| June 15, 1949 | 22nd. | 4 | Feb. 14, 1950 | Apr. 10, 1952 |
| June 12, 1952 | 23rd. | 1 | Feb. 3, 1953 | Mar. 27, 1953 |
| June 9, 1953 | 24th. | 4 | Sept. 15, 1953 | Aug. 13, 1956 |
| Sept. 19, 1956 | 25th. | 4 | Feb. 7, 1957 | Aug. 3, 1960 |
| Sept. 12, 1960 | 26th. | 1 | Jan. 26, 1961 | 1 |

${ }^{1}$ Life of Legislature not expired at Apr. 30, 1963.

## 30.-Twenty-Sixth Ministry of British Columbia, as at Apr. 30, 1963

(Party standing at latest General Election, Sept. 12, 1960: 32 Social Credit, 16 Co-operative Commonwealth Federation, and 4 Liberal.)

| Office | Name | Date of First Appointment | Date of Present Appointment |
| :---: | :---: | :---: | :---: |
| Premier, President of the Council and Minister of Finance. | Hon. William Andrew Cecil | Aug. 1, 1952 | $\begin{cases}\text { Aug. } & \text { 1, } 1952 \\ \text { Aug. } & 1952\end{cases}$ |
|  | Bennett. |  | Feb. 15, 1954 |
| Provincial Secretary, Minister of Municipal Affairs, and Minister of Social Welfare..... | Hon. Wesley Drewett Black. | Aug. 1, 1952 | $\left\{\begin{array}{l}\text { Aug. } \\ \text { Aug. } \\ \text { 1, } \\ \text { 1, } \\ 1952\end{array}\right.$ |
| Attorney-General and Minister of Industrial |  |  | Mar. 20, 1959 |
| Development, Trade, and Commerce..... | Hon. Robert Whllam Bonner... | Aug. 1, 1952 | Mar. 28, 1957 |
| Minister of Lands, Forests and Water Resources | Hon. Ray Gillis Wiliston. | Apr. 14, 1954 | Mar. 30, 1962 |
| Minister of Agriculture................... | Hon. Francis Xavier Richier. . | Nov. 28, 1960 | Nov. 28, 1960 |
| Minister of Mines and Petroleum Resources.. | Hon. Whllam Kenneth Kiernan | Aug. 1, 1952 | Mar. 18, 1960 |
| Minister of Highways. | Hon. Philip Arthur Gaglardi.. | Aug. 1, 1952 | Mar. 15, 1955 |
| Minister of Labour and Minister of Education. Minister of Health Services and Hospital | Hon. Leslie Raymond Peterson. | Sept. 27, 1956 | Nov. 28, 1960 |
| Insurance............................ | Hon. Eric Charles Fitzgrrald Martin | Aug. 1, 1952 | Mar. 20, 1959 |
| Ministe | Hon. Wilham Neelands Chant. . | Mar. 15, 1955 | Mar. 15, 1955 |
| Minister of Recreation and Conservation and Minister of Commercial Transport.......... | Hon. Earle Cathers Westwood. | Sept. 27, 1956 | Nov. 28, 1960 |

## Subsection 11.-Yukon and Northwest Territories

Yukon Territory.-The Yukon was created a separate Territory in June 1898 (see p. 65). 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 each 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 Northern Affairs and National Resources. 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 Apr. 30, 1963 were elected in 1961 for a three-year term.

GOVERNMENT OFFTHE YUKON TERRITORY


The Northern Administration Branch, Department of Northern Affairs and National Resources, 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, including the Department of Justice, the Royal Canadian Mounted Police, the Departments of National Defence, Citizenship and Immigration, Mines and Technical Surveys, National Revenue, Transport, Post Office, Agriculture, Fisheries, and Public Works and the Unemployment Insurance Commission also maintain offices in the Yukon Territory.*

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 Northern Affairs and National Resources. As a matter of practice, the appointment is held by the Deputy Minister

[^26]of Northern Affairs and National Resources. 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 Territories 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 management of resources under federal legislation are conducted by the Northern Administration Branch of the Department of Northern Affairs and National Resources. 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 <br> (as at Apr. 30, 1963)

| Commissioner | R. G. Robertson |
| :---: | :---: |
| Deputy Commissioner. | W. G. Brown |
| Members of the Council Appointed. | W. G. Brown, D. M. Coolican, L. A. Desrochers, H. M. Jones and I. Norman Smith |
| Elected. | E. J. Gall, J. W. Goodall, P. W. Karerr and K. H. Lang |
| Officers of the CouncilSecretary. $\qquad$ | R. L. Kennedy |
| Legal Advise | E. R. Ouson |

## 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 provincial 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 districts, drainage and irrigation districts and health units) may provide services to a number of municipalities. Similarly, metropolitan government authorities provide certain services to a number of area municipalities. In some provinces, the more sparsely settled areas do not 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 officials appointed by the provincial Departments of Municipal Affairs.

[^27]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 four they may impose sales taxes on specific commodities, and in Quebec most cities have been granted the right to levy a general sales tax. Miscellaneous general revenue is derived from licences, permits, rents, concessions, franchises and fines. Most urban municipalities of any size 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 property 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. 96).

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, 1962. In Table 31 (which gives the number of each type of municipality 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 39 towns, five rural districts, three local improvement districts and 39 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 usual 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 17 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 62 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 334 villages and 1,114 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 56 cities and 171 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.

Because of the assumption by the province, on Apr. 1, 1961, of the Montreal Metropolitan Boulevard, both as to construction cost and maintenance, as a provincial highway, and the ability of the area municipalities to fulfil their own obligations, the active functions of the Montreal Metropolitan Corporation are now considerably decreased. It continues to service borrowings already contracted and to apportion 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 30 cities, 158 towns, 158 villages, 574 townships and 20 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 eight 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 34 towns, 37 villages and 111 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 commercial 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, 114 towns, 365 villages and 296 rural municipalities. The area so organized consists of most of the southern two fifths of the province; the remainder of this portion is administered for local purposes by the province in unincorporated local improvement districts. The northern three fifths is sparsely populated and without local government, although some municipal services are provided by the province through operation of the Northern Administrative Area. Municipalities are supervised by the Department of Municipal Affairs.

[^28]towns, 59 villages and 30 districts; the latter are chiefly rural municipalities, except for those adjacent to the principal cities of Victoria and Vancouver which 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 1,000 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.

Yukon and Northwest Territories.-There are two cities, Whitehorse and Dawson, and one unincorporated town, Mayo, in the Yukon Territory and two municipal districts, 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 31.

## 31.-Official Designation and Statistical Classification of Municipalities, by Province, as at Jan. 1, 1962

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Item \& Nfld. \({ }^{3}\) \& P.E.I. \& N.S. \& N.B. \& Que. \& Ont. \& Man. \& Sask. \& Alta. \& B.C. \& Total \\
\hline \multirow{10}{*}{\begin{tabular}{l}
Local municipalities. \\
Metropolitan corporations. \\
Cities. \\
Towns. \(\qquad\) \\
Villages. \\
Rural 10
\(\qquad\)
\(\qquad\) \\
Quebec and Ontario counties \\
Totals, Incorporated Municipalities.
\end{tabular}} \& \multicolumn{11}{|c|}{Official Designation \({ }^{1}\)} \\
\hline \& \begin{tabular}{|r|} 
No. \\
88 \\
\hline
\end{tabular} \& No.

25 \& No.
66 \& No. \& No. \& No. \& No. \& No.
786 \& No.
305 \& No.
125 \& No. <br>
\hline \& \& \& 66 \& 115 \& 1,676 ${ }^{5}$ \& 9416 \& 1917 \& 786 \& 305 \& 125 \& 4,318 <br>
\hline \& -2 \& $\cdots$ \& 9 \& $\cdots$ \& 56 \& 30 \& 8 \& 11 \& 10 \& 32 \& 159 <br>
\hline \& $47^{8}$ \& 7 \& 39 \& 21 \& 171 \& 158 \& 94 \& 114 \& 89 \& 4 \& 684 <br>
\hline \& $39^{9}$ \& 17 \& \& 1 \& 1334 \& 158 \& ${ }^{37}$ \& 365 \& 158 \& 59 \& 1,168 <br>
\hline \& ... \& ... \& 24 \& 874 \& 1,114 \& 59411 \& $111{ }^{12}$ \& 29613 \& 4814 \& 30 \& 2,304 <br>
\hline \& ... \& $\ldots$ \& $\ldots$ \& ... \& $75^{15}$ \& 38 \& $\ldots$ \& $\ldots$ \& $\ldots$ \& $\ldots$ \& 113 <br>
\hline \& 88 \& 25 \& 66 \& 115 \& 1,751 \& 979 \& 191 \& 786 \& 305 \& 125 \& 4,431 <br>
\hline \& \multicolumn{11}{|c|}{Statistical Clabsification ${ }^{2}$} <br>

\hline \multirow[b]{4}{*}{| Municipalities in Metropoli$\tan$ Areas ${ }^{16}$ Urban |
| :--- |
| Rural |} \& \multirow[t]{4}{*}{No.

2
2
$\ldots$} \& \multirow[t]{4}{*}{No.
$\ldots$
$\ldots$
$\ldots$} \& \multirow[t]{4}{*}{No.

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1} \& \multirow[t]{4}{*}{No. 5
8
8
2} \& \multirow[t]{4}{*}{No.

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116 \\
95 \\
21
\end{array}
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\begin{aligned}
& 74 \\
& 45 \\
& 29
\end{aligned}
$$} \& \multirow[t]{4}{*}{No.

\[
$$
\begin{array}{r}
17 \\
9 \\
8
\end{array}
$$

\]} \& \multirow[t]{4}{*}{| No. |
| :--- |
| ... |
| $\cdots$ |} \& \multirow[t]{4}{*}{\[

$$
\begin{array}{r|}
\text { No. } \\
13 \\
8 \\
5
\end{array}
$$
\]} \& \multirow[t]{4}{*}{No.

20
8
12} \& \multirow[t]{4}{*}{No.

$$
\begin{gathered}
250 \\
178 \\
788 \\
{ }_{78}^{250}
\end{gathered}
$$} <br>

\hline \& \& \& \& \& \& \& \& \& \& \& <br>
\hline \& \& \& \& \& \& \& \& \& \& \& <br>
\hline \& \& \& \& \& \& \& \& \& \& \& <br>
\hline Other urban municipalities. . \& 86 \& 25 \& 40 \& 25 \& 467 \& 302 \& 71 \& 490 \& 249 \& 87 \& 1,842 <br>

\hline \multirow[t]{3}{*}{Other rural municipalities Semi-urban. Other.} \& \multirow[b]{3}{*}{$\cdots$} \& \multirow[t]{3}{*}{\[
$$
\begin{aligned}
& \cdots \\
& \cdots \\
& \cdots
\end{aligned}
$$

\]} \& \multirow[t]{3}{*}{\[

$$
\begin{array}{r}
23 \\
\hdashline \ddot{23}
\end{array}
$$

\]} \& \multirow[t]{3}{*}{\[

$$
\begin{gathered}
85 \\
\hdashline-85
\end{gathered}
$$

\]} \& \multirow[t]{3}{*}{\[

$$
\begin{aligned}
& 1,093 \\
& 1, \dddot{093}
\end{aligned}
$$

\]} \& \multirow[t]{3}{*}{\[

$$
\begin{gathered}
565 \\
461^{17} \\
519
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| Totals, Incorporated Municipalities. $\qquad$ |} \& $\ldots$ \& $\ldots$ \& $\ldots$ \& ... \& 75 \& 38 \& $\ldots$ \& $\ldots$ \& $\ldots$ \& ... \& 113 <br>

\hline \& 88 \& 25 \& 66 \& 115 \& 1,751 \& 979 \& 191 \& 786 \& 305 \& 125 \& 4,431 <br>
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[^29]
## Section 4.-Federal and Provincial Royal Commissions

Federal Royal Commissions Established.-Royal Commissions established from Feb. 1, 1962 to Apr. 30, 1963 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 Apr. 30, 1963 and the date of going to press will be found in the Register of Official Appointments, Chapter XXVI, Part III.

Nature of Commission

Chief Commissioner

Kenneth LeM. Carter.
Sept. 25, 1962

To inquire into and report upon the incidence and effects of taxation imposed by Parliament, etc., and to make recommendations for improvements in the tax laws and their administration.

To inquire into and report upon the problems relating to marine pilotage provided in Canada, etc., and to recommend the changes, if any, that should be made.

Hon. Yves Bernier. $\qquad$

Reports of Federal Royal Commissions.-Reports of federal Royal Commissions issued during the period Jan. 1, 1962 to Apr. 30, 1963 were as follows.

Royal Commission on Transportation, established May 13, 1959:
Vol. 2, December 1961. 289p. \$2.25. (Cat. No. Z1-1959/3-2).
Vol. 3, July 1962. Ottawa, 1962. 620p. \$7.50. (Cat. No. Z1-1959/3-3).
Royal Commission on Government Organization, established Sept. 16, 1960:
Vol. 1, Management of the Public Service: Plan for management; Financial management; Personnel management; Paperwork and systems management. Ottawa, July 18, 1962. 646p. \$6. (Cat. No. Z1-1960/4-1).
Vol. 1, Abridged edition. Ottawa, July 18, 1962. \$1. (Cat. No. Z1-1960/4-1.1).
Vol. 2, Supporting services for government. October 1962. Ottawa, 1962. 436p. \$6. (Cat. No. Z1-1960/4-2).
Vol. 2, Supporting services for government:
5. Real Property. Ottawa, 1962. Pp. 23-68. 50 cents. (Cat. No. Z1-1960/4-205).
6. Purchasing and Supply. Ottawa, 1962. Pp. 73-142. 50 cents. (Cat. No. Z1-1960/4-206).
7. Transportation. Ottawa, 1962. Pp. 147-207. 50 cents. (Cat. No. Z1-1960/4-207).
8. Telecommunications. Ottawa, 1962. Pp. 213-268. 50 cents. (Cat. No. Z1-1960/4-208).
9. Printing and publishing. Ottawa, 1962. Pp. 273-307. 50 cents. (Cat. No. Z1-1960/4-209).
10. The "make or buy" problem. Ottawa, 1962. Pp. 313-359. 50 cents. (Cat. No. Z1-1960/4-210).
11. Legal services. Ottawa, 1962. Pp. 365-421. 50 cents. (Cat. No. Z1-1960/4-211).
12. Economic and statistical services. Ottawa, 1962. Pp. 17-51. 50 cents. (Cat. No. Z1-1960/4-212).
13. Public information services. Ottawa, 1962. Pp. 57-114. 50 cents. (Cat. No. Z1-1960/4-213).
14. Education services. Ottawa, 1962. Pp. 137-170. 50 cents. (Cat. No. Z1-1960/4-214).
15. Health services. Ottawa, 1962. Pp. 177-241. 50 cents. (Cat. No. Z1-1960/4-215).
16. Lending, guaranteeing and insuring activities. Ottawa, 1962. Pp. 247-297. 50 cents. (Cat. No. Z1-1960/4-216).
17. The post office. Ottawa, 1962. Pp. 303-351. 50 cents. (Cat. No. Z1-1960/4-217).
18. Miscellaneous services. Ottawa, 1962. Pp. 357-384. 50 cents. (Cat. No. Z1-1960/4-218).

Vol. 3, Supporting services for government, cont'd. Ottawa, December 3, 1962. 399p. \$7.75. (Cat. No. Z1-1960/4-3).
Vol. 4, Special areas of administration: Canadian Broadcasting Corporation; Department of National Defence; Department of External Affairs; Northern Affairs; Scientific Research and Development. Ottawa, January 21, 1963. 333p. \$7.75. (Cat. No. Z1-1960/4-4).
19. Canadian Broadcasting Corporation. Ottawa, 1963. Pp. 17-51. 50 cents. (Cat. No. Z1-1960/4419).
20. Department of National Defence. Ottawa, 1963. Pp. 57-92. 50 cents. (Cat. No. Z1-1960/4-420).
21. Department of External Affairs. Ottawa, 1963. Pp. 97-143. 50 cents. (Cat. No. Z1-1960/4-421).
22. Northern Affairs. Ottawa, 1963. Pp. 149-180. 50 cents. (Cat. No. Z1-1960/4-422).
23. Scientific Research and Development. Ottawa, 1963. Pp. 185-322. 50 cents. (Cat. No. Z1-1960) 4-423).
Vol. 5, The Organization of the Government of Canada. Ottawa, Feb. 28, 1963. \$5. (Cat. No. Z1-1960/4-5).
Report of the Committee of inquiry into the Unemployment Insurance Act, established July 17, 1961. Ottawa,
November 1982. 207p. \$2. (Cat. No. Z1-1961/1).

Provincial Royal Commissions.-The following provincial Royal Commissions were established during the period Jan. 1, 1962 to Apr. 30, 1963.

## Province and Nature of Commission

Nova Scoria
To inquire into remuneration of the medical
profession re ward patients at Victoria
General Hospital.
To inquire into municipal boundaries and repre-
sentation.
New Brunswick
To inquire into public or municipal fiscal
matters within New Brunswick.
To inquire into municipal government in the
Municipality of Saint John.

## Quebrec

To inquire into the financial administration of the Corporation du Sanatorium Ross.
To inquire into the financial administration of the Corporation du Sanatorium Bégin.
To inquire into the general administration of l'Institut Albert Prévost.

To inquire into the financial administration of l'Hôpital Général Fleury, Inc., since June 1, 1961.

To inquire into the distribution of natural gas in the province.

## Ontarto

To inquire into and report upon the conduct of and the performance of duties by the members of the Metropolitan Toronto Police Force involved in the interrogation and detention of Dr. Norbert Leiner.

## Mantroba

To inquire into the operation and activities of the Metropolitan Corporation of Greater Winnipeg and the area municipalities thereunder and to report its findings and recommendations to the Lieutenant-Governor in Council.

## Sabkatchewan

To inquire into the Mechanics' Lien Act in light of modern economic conditions with a view to the formulation of recommendations for its amendment or repeal.

To inquire into difficulties certain physicians have encountered in obtaining or retaining membership on the medical staff of hospitals or in the enjoyment of professional privileges in hospitals.

Date
Established

Commissioner or Chairman

Edward G. Byrne
Mar. 8, 1962
H. Carl Goldenberg.

May 29, 1962

His Hon. Judge Victor Chabot..... June 4, 1962
His Hon. André Regnier........... July 10, 1962

His Hon. Jean Telurer.............. July 26, 1962

His Hon. Judge Jacques Vadboncorur July 26, 1962

Hon. Dalton C. Wehs.
Feb. 1, 1962

Lorne R. Cumming.
Oct. 1, 1962

Hon. H. F. Thombon
Mar. 2, 1962

Hon. H. F. Thomson.................. July 19, 1962

## British Columbin

To inquire into and study the Workmen's Compensation Act and its administration.

# 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 purposes 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 Government 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.-In the latter part of the calendar year, at the request of the Minister of Finance, each of the several departments prepares its estimates for the following fiscal year and submits them by a specified date to the Treasury Board. This Board is a Committee of the Queen's Privy Council for Canada and consists of the Minister of Finance as chairman and five other Ministers named by the Governor in Council, with such additional members of the Privy Council as the Governor in Council may nominate to serve as alternates. A senior officer of the Department of Finance acts as secretary to the Board and the necessary staff is provided by that Department. 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.

On receipt, departmental estimates are assembled by officers of the Treasury Board, comparisons are made with the expenditures of previous years and digests of supporting data and other pertinent information are prepared. The Board reviews each departmental submission in the light of probable revenues and of governmental policy generally, usually consulting the appropriate Minister and departmental officials. Expenditure proposals may be rejected or reduced and unresolved differences of opinion may be referred to the Cabinet for decision. When the Board is satisfied with their substance and form, these estimates, known as the Main Estimates, are submitted to the Cabinet and later to the Governor General 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.

[^30]Grants in the Appropriation Acts are grants to the Crown and funds cannot be disbursed until 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 twelfth or one sixth of the total of each item in the estimates, equivalent to one or two months' supply, respectively. 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 authorized 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 municipal governments, and loans to veterans. There are also disbursements in connection with deposit and trust and insurance, pension and guaranty 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 other 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 on the previous day, 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 is a senior 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 held 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 not recorded on the statement of assets and liabilities.

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 Gazette.

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.

Though 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; reclamation and development by the Prairie Farm Rehabilitation Administration, the Maritime Marshland Rehabilitation Administration and the Agricultural Rehabilitation and Development Administration; security and price stability are provided under the Crop Insurance Act, the Prairie Farm Assistance Act and the Agricultural Stabilization Act. The Farm Credit Corporation and the Board of Grain Commissioners are responsible 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 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 through the Minister of Transport.

* As at Apr. 30, 1963; any major changes taking place between that date and the time of going to press will be carried in an Appendix to this volume.


Auditor General's Office.-This Office originated in 1878 (SC 1878, c. 7) and currently functions under the Financial Administration Act (RSC 1952, c. 116). The Auditor General is responsible 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 Governors.-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 establish 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 and reports to Parliament through the Secretary of State.

Board of Grain Commissioners.-Constituted in 1912 under the Canada Grain Act, now the Canada Grain Act, 1930 (RSC 1952, c. 25), the Board of Grain Commissioners provides general supervision over grain handling in Canada by licensing elevator operators, inspecting and weighing grain en route to 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, deterioration of any grain during storage or treatment, unfair or discriminatory operation of a grain elevator, etc. The Board publishes its regulations in the Canada Gazette and reports to Parliament through the Minister of Agriculture.

Board of Transport Commissioners.-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.

Canadian Government Specifications Board.-This is an interdepartmental body composed of the Deputy Heads of 24 Federal Government departments and agencies. The Board operates under the auspices of the National Research Council through the medium of committees in which government and industry co-operate on a voluntary basis. The Board prepares specifications in commodity fields and for materials, processes and equipment required by government agencies, and arranges for necessary testing and research. An Index of Specifications is available on request to the CGSB Secretary, National Research Council, Ottawa.

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's 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 related to the World War II effort. It also adjudicates on claims for pension under various other measures, including the Flying Accidents Compensation Order and the RCMP Continuation Act; 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.

It consists of eight to twelve Commissioners and up to five ad hoc Commissioners appointed by the Governor in Council. Its chairman has the rank and powers of a Deputy Head of a department and the Commission reports to Parliament through the Minister of Veterans Affairs.

Chief Electoral Office.-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 reports to Parliament through the Secretary of State.

Department of Citizenship and Immigration.-This Department was constituted in December 1949 (RSC 1952, c. 67) and came into existence on Jan. 18, 1950 under the Minister of Citizenship and Immigration. Most departmental work is carried on through four branches. The Canadian Citizenship Branch assists governmental and non-governmental agencies engaged or interested in facilitating the adjustment and integration of newcomers and in making Canadians conscious of their privileges and responsibilities as citizens. The Canadian Citizenship Registration

Branch administers the Canadian Citizenship Act and is the custodian of all records under that Act and all Naturalization Acts previously in force. The Immigration Branch administers the Immigration Act and Regulations and is responsible for the selection, examination and movement of immigrants, the exclusion or deportation of undesirables and the settlement or establishment of immigrants in Canada. The activities of the Indian Affairs Branch include management of all Indian affairs. Its organization consists of a headquarters office at Ottawa, a regional supervisory staff, and 89 local agencies in the field.

Civil Service Commission.-The Civil Service Commission of Canada dates from the Civil Service Act of 1908. Under this Act the Commission was given the responsibility of applying, wherever possible, the principle of appointment by merit in filling permanent positions within departmental headquarters at Ottawa, termed the "inside service". The Civil Service Act of 1918 extended the competitive system of appointments to cover the outside as well as the inside service and temporary as well as permanent appointments. It also gave the Civil Service Commission various other responsibilities in the field of personnel administration including responsibility for promotion, for classification of positions and for recommending rates of pay.

The Civil Service Act of 1961, which came into force on Apr. 1, 1962, has three main features. First, it preserves the independence of the Civil Service Commission and carries forward and strengthens all the fundamental principles of the merit system. Secondly, it clarifies the role of the Civil Service Commission in those other areas of personnel administration with which it is concerned but which do not bear directly upon the merit system. Thirdly, it confers on staff associations the right to be consulted on matters that have to do with remuneration and conditions of employment.

The Act applies to about 130,000 employees in all the departments and certain agencies of government and this constitutes the "civil service" within the legal meaning of that term. The "public service", is defined as those departments and agencies which are listed in Schedule A of the Public Service Superannuation Act and which embrace about 180,000 employees including the 130,000 under the Civil Service Act. This definition of public service does not include certain Crown corporations.

The Civil Service Commission is responsible only to Parliament and not to the executive government and reports to Parliament through the Secretary of State. It consists of three members, one of whom is chairman. Each member of the Commission is appointed by the Governor in Council for a term of ten years and has the rank and standing of a Deputy Minister. The Commission has a staff of more than 700 persons located in its headquarters at Ottawa and in its field offices at St. John's, Nfld., Halifax, N.S., Moncton, N.B., Saint John, N.B., Quebec, Que., Montreal, Que., Toronto, Ont., London, Ont., Winnipeg, Man., Regina, Sask., Saskatoon, Sask., Edmonton, Alta., Calgary, Alta., Vancouver, B.C., and Victoria, B.C.

Department of Defence Production.-This Department was established on Apr. 1, 1951 under the provisions of the Defence Production Act (RSC 1952, c. 62, as amended). Under this Act the Minister is given, with certain exceptions, authority to buy defence supplies and construct defence projects required by the Department of National Defence. The Minister may, if authorized by the Governor General in Council, undertake for an associated government anything he may undertake for the Canadian Government. In addition, all powers, duties and functions that theretofore were vested in the Minister of Trade and Commerce under any contract, agreement, lease or other writing entered into pursuant to the Department of Munitions and Supply Act, 1939, or the Defence Supplies Act, 1950, are vested in the Minister of Defence Production.

Broadly, the Department's functions are to procure military goods, to construct defence installations and to organize industry for defence as required on behalf of the Department of National Defence, other government departments, and associated governments; to promote the expansion of defence production facilities and the development of defence-supporting industries, particularly of strategic resources important for the defence of Canada and its allies; and to ensure adequate supplies of essential materials and services for defence requirements. The main procurement units of the Department are five production branches-Aircraft, Armament, Electronics, Machine Tool and Shipbuilding-and a General Purchasing Branch. Major offices for foreign procurement are located at London, England, and Washington, U.S.A.; the General Purchasing Branch has 14 district purchasing offices located throughout Canada for local or urgent procurement. In addition, there are various service branches which include Administration, Comptroller's, Economics and Statistics, Financial Adviser's, Industrial Security, Legal, and Secretary's. The Emergency Supply Planning Branch is responsible for planning economic controls for a national emergency.

The following Crown companies report to Parliament through the Minister of Defence Production: Canadian Arsenals Limited, Canadian Commercial Corporation, Crown Assets Disposal Corporation, Defence Construction (1951) Limited, and Polymer Corporation Limited. The Minister is at present the Chairman of the Committee of the Privy Council on Scientific and Industrial Research and is responsible to Parliament for the Emergency Measures Organization.

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 a census of population and agriculture of Canada as required under the Act.

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

Emergency Measures Organization.-This Organization was established in June 1957 for the purpose of co-ordinating civil emergency planning. On Sept. 1, 1959, the Department of National Defence, Health and Welfare, and Justice became responsible for specific civil defence functions and the Emergency Measures Organization for all other aspects of planning civil emergency measures.* The Organization reports to Parliament through the Minister of Defence Production.

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 who is also Legal Adviser 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 Officers, 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 76 diplomatic, consular and other missions maintained abroad by the Department. In 29 additional countries, Canada is represented by non-resident Ambassadors or High Commissioners.

The work of the Department at Ottawa is performed by 25 units, comprising 23 divisions and two sections. 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; twelve functional divisions-Communications, Consular, Defence Liaison (1), Defence Liaison (2), Disarmament, Economic, Historical, Information, Legal, Passport, Protocol and United Nations; and five administrative divisions-Administrative Services, Finance, Personnel, Registry, and Supplies and Properties. The two sections are Inspection Service and Liaison Services.

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.

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 in five principal divisions: Financial Affairs, Economic Affairs, Taxation, Federal-Provincial-Municipal Relations, and Treasury Board. The Royal Canadian Mint is a branch of the Department and the Inspector General of Banks is an officer of the Department. The Tariff Board and the Bank of Canada report to Parliament through the Minister of Finance.

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 regulations of coastal and freshwater fisheries is with the federal Department of Fisheries.

The work of the Department includes: conservation and development 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 Department 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. the Northwest Atlantic Fisheries, North Pacific Fisheries, Whaling, Great Lakes Fishery, and North Pacific Fur Seal.

Fisheries Research Board.-The Fisheries Research Board operates 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.

[^31]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 scientists, and other members are representative of the fishing industry and the Department of Fisheries.

The Board operates four biological stations and an Arctic Unit across Canada, also three technological stations with two technological application units and two oceanographic groups. It serves as the scientific arm of the Department of Fisheries and its principal objective is to increase the scope and value of Canadian fisheries through scientific research.

Department of Forestry.-Established in October 1960 from elements of the Departments of Northern Affairs and National Resources and of Agriculture, the Department of Forestry conducts comprehensive programs of research relating to forestry and the utilization of forest products, and carries out economic studies relating to forest resources and the forest industries. Through a developing information program it seeks to promote greater public understanding of the proper management, protection and use of the forest resources. Financial assistance is offered to the provinces under agreements authorized by the Governor in Council in order to expedite progress in specific forestry programs. It carries out forest surveys and provides technical advice and assistance to other agencies of the Federal Government which are responsible for the administration of forest lands. The Department co-operates with international organizations concerned with forestry and in which Canada maintains membership, and the Minister of Forestry reports to Parliament for the Eastern Rockies Forest Conservation Board.

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 Finance 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 has the status of a 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 Cooperative Credit Associations Act; and Civil Service Insurance.

Under the relevant provincial statutes the Department examines trust companies incorporated in the Provinces of Manitoba and New Brunswick and loan 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 Canada) 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, questions or matters of difference between the two countries may be referred to the Commission for decision, provided both countries consent.

The Commission 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). It provides legal services to the Government and various government departments including preparing and settling government legislation, settling instruments issued under the Great Seal of Canada, regulating and conducting litigation for or against the Crown, superintending the acquisition of property and prosecutions under federal legislation other than the Criminal Code, administering federal statutes dealing with legal matters and providing administrative services for the Supreme Court of Canada and the Exchequer Court. The Department also superintends the penitentiaries and administers the prison system of Canada and administers the provisions of Canadian anti-combine legislation.

The Commissioner of the Royal Canadian Mounted Police operates under the direction of the Minister of Justice who also reports to Parliament for the National Parole Board and the Restrictive Trade Practices Commission.

Department of 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, c. 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; reinstatement in civil employment; female employee equal pay; government annuities; government employee compensation; merchant seamen compensation; technical and vocational training assistance; vocational rehabilitation of disabled persons; annual
vacations with pay. It promotes joint consultation in industry through labour-management committees; organizes manpower utilization programs, e.g., farm labour; and operates a Women's Bureau. The Department publishes the Labour Gazette and other publications, as well as general information on labour-management, employment, manpower and related subjects.

The Canada Labour Relations Board acts on behalf of, and the National Technical and Vocational Training Advisory Council and the National Advisory Council on Rehabilitation of Disabled Persons act in an advisory capacity to the Minister of Labour, and 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, which maintains the National Employment Service, reports to Parliament through the Minister of Labour. The National Productivity Council reports through the Ministers of Labour and of Trade and Commerce.

Library of Parliament.-The Library of Parliament as such was established in 1871 (SC 1871, c. 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 responsible 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. 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 Mines and Technical Surveys.-This Department was created by an Act of Parliament (SC 1949, c. 17) which received Royal Assent on Dec. 10, 1949. Its establishment resulted from the reorganization of certain former departments. A primary function of the Department is to provide technological assistance in the development of Canada's mineral resources through investigations and research in the fields of geology, mineral dressing and metallurgy. The Department establishes the framework of surveys throughout the country that provides control for all surveying and mapping in Canada. It produces the base maps used in the development of Canada's natural resources, conducts all the charting of Canada's coastal and inland waters, and issues official sailing directions and Canadian sea and air navigation charts. The Department is under the Minister of Mines and Technical Surveys and is divided into six branches: the Surveys and Mapping Branch, the Marine Sciences Branch, the Geological Survey of Canada, the Mines Branch, the Dominion Observatories and the Geographical Branch. The Mineral Resources Division, a unit of head office, gives its whole attention to matters concerned with the economics of mineral resources development.

Major moves were made recently to implement the oceanography program: (1) the establishment of the Polar Continental Shelf Project to carry out a long-term investigation of the continental shelf lying north and west of the Canadian Arctic Archipelago and of the waters above it, together with the islands of the Archipelago and the straits and sounds between the islands; and (2) the setting up of a $\$ 4,500,000$ oceanographic institute in the Bedford Basin near Halifax with facilities for study in any phase of the science. The Department's Marine Sciences Branch was established in April 1962.

The Department administers the Explosives Act which regulates the manufacture, testing, sale, storage and importation of explosives, and the Emergency Gold Mining Assistance Act which provides cost-aid to the Canadian gold mining industry.

Boards and Commissions are: Canadian Permanent Committee on Geographical Names; Board of Examiners for Dominion Land Surveyors; the International Boundary Commission; and the Interprovincial Boundary Commissions. The Minister of Mines and Technical Surveys reports to Parliament for the Dominion Coal Board.

Department of National Defence.-The Department of National Defence was established on Jan. 1, 1923 by the Department of National Defence Act, 1922, and was an amalgamation of the Department of Militia and Defence, the Naval Service and the Air Board. The Department and the Canadian Forces (the Royal Canadian Navy, the Canadian Army and the Royal Canadian Air Force) now operate under the National Defence Act, 1950 (RSC 1952, c. 184).

In 1940 additional Ministers for Naval and Air Services were appointed and the Department was organized under a Minister of National Defence and two additional Ministers so that there was a Minister and staff for each of the Armed Services. Upon demobilization of the wartime Forces the appointment of Ministers of National Defence for Naval Services and Air Services ceased, and the Armed Forces were, in 1946, again administered by the Minister of National Defence without additional Ministers. Under the National Defence Act, the Canadian Forces are being administered solely by the Minister of National Defence and the Associate Minister of National Defence.

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, now functions under the National Defence Act. The Chairman of the Board has a status equivalent to that of a Chief of Staff of one of the Canadian Forces.

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 Trade and Commerce.

National Film Board.-The National Film Board, established in 1939, 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 welfare of the people of Canada over which the Federal Parliament has jurisdiction. It administers the Acts listed in Sect. 3, pp. 124-125, and is also responsible for: the administration of the National Health Program under which grants 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, mental health, dental health, nursing, medical rehabilitation, nutrition and hospital 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 enforcement of regulations of the International Joint Commission relating to public health; the promotion and conservation of the health of civil servants and other 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 co-ordinates 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 Catalogue, 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 1961 consisted of about 250,000 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 three members appointed by Order in Council for a ten-year period. The Board reports to Parliament through the Minister of Justice.

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 sales and excise taxes, by ports and outports. The Taxation Division is responsible for the assessment and collection of income taxes and estate taxes by 29 district offices throughout Canada.

The Minister of National Revenue is responsible to Parliament for the Tax Appeal Board and the Central Mortgage and Housing Corporation.

Department of Northern Affairs and National Resources.-The Department of Northern Affairs and National Resources was established in December 1953, superseding the Department of Resources and Development. In addition to the Administration Branch, which includes common service functions, the Department is divided into four branches: the National Parks Branch, which administers the National Parks and National Historic Parks of Canada, National Historic Sites, and wildlife matters coming within the jurisdiction of the Federal Government; the Water Resources Branch, which is responsible for the investigation of water power resources, for the administration of federal assistance to the provinces under the Canada Water Conservation Assistance Act and for federal interest in certain joint federal-provincial construction projects; 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, as well as for certain other lands and mineral rights vested in the Crown in the right of Canada; and the National Museum of Canada, which is responsible for research, publication of scientific studies, and public exhibitions in the natural history and human history fields, as well as the National Aviation Museum and the Canadian War Museum.

The Minister of Northern Affairs and National Resources is also responsible to Parliament for the Northern Canada Power Commission and the National Battlefields Commission. The Historic Sites and Monuments Board of Canada, an honorary body of recognized historians representing the various provinces, and the Advisory Committee on Northern Development and Water Use Policy, act in an advisory capacity to the Minister in their respective fields. The Deputy Minister is Commissioner of the Northwest Territories and Chairman of the Northern Canada Power Commission.

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 re-organized, developed and enlarged and certain administrative functions of the Privy Council Office and the Prime Minister's Office 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, administration of oaths of office and secrecy, and the duties of editing, registering and publication of 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; and the Office of the Prime Minister organized as a Secretariat with officers 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. In 1956 the Archives opened a large Records Centre, designed to provide economical accommodation for departmental records that are used relatively seldom. The building, equipped with over 50 miles of shelving, also serves as a sorting centre in which papers of long-term interest are picked out of obsolete files, and useless material is segregated for destruction.

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. The Dominion Archivist also administers the Government's Central Microfilm Unit, which is housed in the Records Centre.

Department of Public Printing and Stationery.-This Department, established in 1886, is responsible for supplying all requirements of printing and stationery to Parliament and departments of the Canadian Government; the cataloguing, distribution and sale of government publications; the publication of the Canada Gazette and all departmental reports, papers, etc., required to be published by authority of the Governor General in Council (RSC 1952, c. 226); and the publication of the Statutes of Canada (RSC 1952, c. 230).

The Department of Public Printing and Stationery is under the jurisdiction of the Secretary of State. The Deputy Head is the Queen's Printer and Controller of Stationery.

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 is also handled by the Department. The Department maintains district offices 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, Purchasing and Stores, Administrative Services, Economic Studies, Financial Services, Fire Prevention, Information Services, Legal Services and Personnel.

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

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. The Force is controlled and administered by the Minister of Justice.

Department of the Secretary of State.-The Secretary of State and Registrar General of Canada is the official medium of communication with the Throne through the Governor General, and is the custodian of the Great Seal of Canada and of the Privy Seal of the Governor General. He is responsible for the preparation and tabling of returns in Parliament. He administers legislation relating to patents of invention, trade marks, industrial designs, timber marking, copyright, companjes, boards of trade, the registration of trade unions, public officers, public documents and governmental and parliamentary translations. He is also the Custodian of Enemy Property.

The Secretary of State has certain responsibilities with respect to civilian decorations, precedence and ceremonial. The Committee on the use of Parliament Hill and the National War Memorial falls within his purview. He is the Minister of the Department of Public Printing and Stationery and the spokesman in Cabinet and Parliament for the Civil Service Commission, the Chief Electoral Officer, the Canadian Broadcasting Corporation, the Board of Broadcast Governors, the Atlantic Development Board, the National Film Board, the National Gallery, the National Library and the Public Archives.

Tariff Board.-Constituted in 1931 under the Tariff Board Act (SC 1931, c. 55), 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, c. 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 inquire 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 Estates Tax Act. An appeal lies from the Board to the Exchequer Court of Canada and a further appeal from that court to the Supreme Court of Canada. The Board consists of a chairman and five 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 completely separate and independent of the Department of National Revenue.

Department of Trade and Commerce.-The Department of Trade and Commerce was established by Act of Parliament on June 23, 1887, but did not function until Dec. 5, 1892, when an Order in Council to this effect was passed. Before the formation of the Department, assistance in the development of Canada's external trade was provided by eight Canadian Commercial Agents-five in the West Indies, two in Great Britain and one in France-who served on a parttime basis and were responsible to the Minister of Finance. A Canadian Commercial Agent was appointed at Sydney, Australia, in 1895, as the first full-time salaried agent of the Department.

The framework of the present Trade Commissioner Service emerged during the next decade or so, the Commercial Agents gradually giving place to career Trade Commissioners. There are now 173 Trade Commissioners serving at Headquarters and abroad in 63 posts (including Assistant Trade Commissioners and agricultural, fisheries and timber specialists). Where a Trade Commissioner is a member of a mission maintained by the Department of External Affairs, he holds diplomatic status and is known as a Minister (Commercial), Commercial Counsellor or Commercial Secretary.

The Department provides a wide range of services to Canadian business men through the Agriculture and Fisheries Branch, the Canadian Government Exhibition Commission, the Canadian Government Travel Bureau, the Commodities Branch, the Trade Services Branch, the International Trade Relations Branch, the Trade Commissioner Service, the Trade Fairs and Missions Branch and the Trade Publicity Branch. The Domestic Commerce Service of the Department assists business men through the facilities provided by the Industrial Promotion Branch, the National Design Branch, the Small Business Branch and the Standards Branch. These four Branches are concerned primarily with co-operating with industry in fostering greater industrial activity in Canada.

The following boards, commissions, Crown corporations and agencies report to Parliament through the Minister of Trade and Commerce: the Dominion Bureau of Statistics, the Export Credits Insurance Corporation, the National Design Council, the National Energy Board, the Canadian Wheat Board, the Northern Ontario Pipe Line Crown Corporation, the Northern Transportation Company Limited, Eldorado Aviation Limited and Eldorado Mining and Refining Limited. The National Productivity Council reports through the Ministers of Trade and Commerce and of Labour.

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 Service operations include aids to navigation, nautical and pilotage services, marine agencies, secondary canals, steamship inspection, floating equipment, 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 civil aviation, meteorological and telecommunications branches. The latter includes the administration and regulation of radar, radio marine and radio aeronautical aids to navigation and of communication by wire and by government telegraph and telephone.

Other services of the Department are in connection with the Government-owned companies: the Canadian National Railways, Canadian Government Railways, the Prince Edward Island, Newfoundland, and Yarmouth-Bar Harbour ferry services, and Trans-Canada Air Lines.

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

Treasury Board.-The Treasury Board was first established by Order in Council PC 3 of July 2, 1867 and was made statutory in 1869. Its powers and duties are now governed by the Financial Administration Act (RSC 1952, c. 116 as amended). Serving as a committee of the Queen's Privy Council for Canada and consisting of the Minister of Finance as Chairman and five other members
of the Privy Council, it deals with all matters relating to finance, revenues, estimates, expenditures and financial commitments, accounts and personnel establishments, referred to the Board by the Governor in Council or on which the Board considers it necessary to act under the Financial Administration Act or any other Act. The practice of having, a Board of Ministers co-ordinating financial measures and reviewing constantly the Government's spending program is unique.

The administrative staff of the Treasury Board constitutes a main division of the Department of Finance and is directed by an Assistant Deputy Minister of Finance named to be the Secretary of the Treasury Board.

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), is a statutory body responsible to the Minister 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. Ten departmental corporations are listed in Schedule B to the Act:-

> Agricultural Stabilization Board (formerly Agricultural Prices Support Board)
> Atomic Energy Control Board
> Canadian Maritime Commission
> Director of Soldier Settlement
> The Director, The Veterans' Land Act
> Dominion Coal Board
> Fisheries Prices Support Board
> National Gallery of Canada
> National Research Council
> Unemployment Insurance Commission.

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 C to the Financial Administration Act or have been subsequently added to that Schedule by the Governor in Council:-

Atomic Energy of Canada Limited<br>Canadian Arsenals Limited<br>Canadian Commercial Corporation<br>Canadian National (West Indies) Steamships Limited<br>Canadian Patents and Development Limited<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

[^32]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.

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:-

Canadian Broadcasting Corporation<br>Canadian Overseas Telecommunication Corporation<br>Central Mortgage and Housing Corporation<br>Eldorado Aviation Limited<br>Eldorado Mining and Refining Limited<br>Export Credits Insurance Corporation<br>Farm Credit Corporation (formerly Canadian Farm Loan Board)<br>National Railways, as defined in the Canadian National-Canadian Pacific Act, 1933<br>Northern Transportation Company Limited<br>Polymer Corporation Limited<br>St. Lawrence Seaway Authority<br>Cornwall International Bridge Company Limited (subsidiary to the St. Lawrence Seaway Authority)<br>Trans-Canada Air Lines.

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 establishment 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. Under a special financing arrangement, a 15-p.c. excise tax charged on radio and television sets and their parts and accessories was allocated to the revenue of the Canadian Broadcasting Corporation, but this was discontinued under the provisions of the Broadcasting Act, which came into force on Nov. 10, 1958, and since that time the Corporation has received federal financing solely by parliamentary grants.

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, which has replaced the Agricultural Prices Support Act. The Board reports to Parliament through the Minister of Agriculture.

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 Secretary of State. 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 Board.-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 Chairman of the Committee of the Privy Council on Scientific and Industrial Research (at present the Minister of Defence Production).

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 Chairman of the Committee of the Privy Council on Scientific and Industrial Research (at present the Minister of Defence Production).

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 appointed 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. 115.)

The Canada Council.-Established by Order in Council dated Apr. 15, 1957, this corporation of 21 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 by a $\$ 50,000,000$ University Capital Grants Fund and the earnings from a $\$ 50,000,000$ Endowment Fund. 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 Prime Minister. (See footnote, p. 115.)

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 plant and equipment. Among the items it now manufactures are propellants and explosives, small arms, radar equipment, optical and electronic instruments, and a wide variety of ammunition and components. Its divisions, together with the locations of their plants, are as follows: Dominion Arsenal Division (Quebec and Val Rose, Que.); Explosives Division (Valleyfield, Que.); Filling Division (St. Paul l'Ermite, Que.); Gun Ammunition Division (Lindsay, Ont.); Small Arms Division (Long Branch, Ont.); Instrument and Electronic Division (Scarborough, Ont.). The company is responsible to Parliament through the Minister of Defence Production.

Canadian Broadcasting Corporation.-The new Broadcasting Act, 1958 continues the CBC as a Crown corporation for the purpose of operating 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 a board of 11 Directors appointed by the Governor in Council and chosen to give representation to the principal geographical divisions of the country. The Corporation reports to Parliament through a Minister of the Crown (at present the Secretary of State).

The President and Vice President are full-time executives appointed for a period of seven years; the other nine Directors, including a Chairman and Vice Chairman, 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 to the Board of Directors 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 Board of Directors and establishes administrative and operating policies to control the activities of all operating units-English Networks, French Networks and Regional Broadcasting (headed by General Managers) and the International Service (headed by a Director) and of corporate staff departments, i.e., Programming, Personnel and Operations, Corporate Affairs (headed by Vice Presidents), Engineering and Technical Services, and Finance (headed by a Director and a Comptroller).

In practice, a general division of work between the President and the Vice President has been arranged whereby the attention of the President is primarily directed at the broader operating and administrative policy fields including reporting on activities to the Board of Directors 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 with Headquarters for English Networks in Toronto, for French Networks in Montreal and with Regional Headquarters 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 for the International Service in Montreal.

Canadian Commercial Corporation.-This Corporation was established on May 1, 1946 by the Canadian Commercial Corporation Act (RSC 1952, c. 35). It purchases goods and commodities in Canada for the governments of other countries. It also acts as their Canadian agent for international agencies such as the United Nations International Children's Emergency Fund and the United Nations Korean Reconstruction Agency. Other functions include arranging production and shipment of Canadian contributions of military stores to NATO countries. The Corporation also serves other departments of the Government of Canada. For instance, it arranges for the purchase and production of supplies and services which the External Aid Office is making available to other countries under the Colombo Plan. In carrying out its functions the Corporation works closely with the Department of Defence Production. It is responsible to Parliament through the Minister of Defence Production.

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 Ship Construction Assistance Regulations established by Order in Council P.C. 1961-1290 passed Sept. 8, 1961 and the Canadian Vessel Construction Assistance Act (RSC 1952, c. 43). It also administers steamship subsidies voted by Parliament. Other functions include advice to other government departments on their shipbuilding requirements, 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 Railways.-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 all 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

Crown corporation established in 1948, pursuant to authority granted in an amendment to
the Research Council Act which was passed in 1946. The primary purpose of the company is to make available to industry, through licensing arrangements, new processes developed by scientific workers of the National Research Council. Its services are equally available to government departments, publicly supported institutions and universities. The company also has crossagency arrangements with similar government agencies in other Commonwealth countries. The Board of Directors is composed of representatives from the National Research Council, from government departments and from industry and the universities. Any profits that the company may derive from licensing arrangements are available for further research and development. The Corporation reports to Parliament through the 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. 115). It reports to Parliament through the Minister of Trade and Commerce.

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 by 1956 c. $9,1957-58$ c. 18, 1958 c. $3,1959 \mathrm{c} .6,1960 \mathrm{c} .10$, and $1960-61 \mathrm{cc} .1$ and 61), the Corporation insures mortgage loans made by approved lenders for home ownership and rental housing; insures home improvement loans made by banks; makes direct loans to individual home-owners, to municipalities for construction of sewage treatment projects designed to eliminate pollution in water and soil and to universities for construction of student residences; undertakes jointly with provincial governments the assembly of land and construction of housing projects; provides financial assistance for studies to identify urban areas with blighted and substandard housing; assists municipalities in clearance and rehabilitation of substandard areas; conducts housing research; encourages community planning and owns and manages rental housing units built for war workers and veterans. The Corporation also 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 National Revenue.

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.-This company was established by Letters Patent in 1951 to take over the general undertakings of Defence Construction Limited. It is primarily responsible for the calling and review of tenders for all major construction jobs and for the supervision of work in the field. This covers five broad phases or types of work in the following categories: (1) defence projects in Canada for the Department of National Defence; (2) defence projects in France for the Department of National Defence under the NATO agreement (neither (1) nor (2) include housing projects or airfield runways); (3) maintenance and repair contracts at Department of National Defence sites throughout Canada; (4) defence construction for the United States Government in Canada; (5) advice and assistance concerning capital assistance projects of the Department of Defence Production and projects for the External Aid Office of the Department of External Affairs. It is responsible to Parliament through the Minister of Defence Production.

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 Mines and Technical Surveys. The Board administers transportation and other subventions relating to coal, including those under the Atlantic Provinces Power Development Act (SC 1957-58,
c. 25). It also administers loans authorized under the Coal Production Assistance Act (RSC 1952, c. 173, as amended). The Dominion Coal Board Act makes provision for the regulation and control of the production, distribution and use of fuel in times of national emergency.

Eastern Rockies 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. The function of the Board 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 Co-ordinating 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 the Department of Forestry.

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. (See footnote, p. 115.)

Eldorado Aviation Limited.-This company was incorporated Apr. 23, 1953 to carry air traffic, 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 Trade and Commerce.

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 uranium 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 Trade and Commerce.

Export Credits Insurance Corporation.-This Corporation commenced operations in 1945 under the Export Credits Insurance Act, 1944 (RSC 1952, c. 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 credit and political risks involved in foreign trade. The Corporation is also authorized to provide financing 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 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. 115.)

National Battlefields Commission.-This Commission was established by Act of Parliament in 1908 to preserve the historic battlefields at Quebec City. The Commission is composed of nine members, seven being appointed by the Federal Government and one each by the Provinces of Ontario and Quebec. The Commission is supported by an annual statutory grant from the Federal Government and is responsible to Parliament through the Minister of Northern Affairs and National Resources.

National Capital Commission.-This Commission is a Crown agency 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 full-time paid chairman and comprises a total of twenty members representative of the ten provinces of Canada. There is a staff of seven officials reporting to a general manager, and a permanent work force of about 600.

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 -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 and care of the national art collections. Through its Exhibition Extension Service, travelling exhibitions, educational services such as lectures and art films, guided tours of the National Gallery collections in Ottawa and other services to the general public are controlled. In addition, the National Gallery publishes art publications and reproductions which are distributed by the Queen's Printer,

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 Halifax, N.S.; Saint John, N.B.; Chicoutimi, Quebec, Trois Rivieres 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 Productivity Council.-Established by Act of Parliament (SC 1960, c. 4), the Council operates under the terms of the National Productivity Council Act assented to Dec. 20, 1960. The Council consists of 25 members, one of whom is designated Chairman, and includes five members from industry and commerce, five from organized labour, five from agriculture and primary industry, five from the general public, four officers or employees of Her Majesty, and an Executive Director.

The function of the Council is to promote and expedite continuing improvement in productive efficiency in the various aspects of Canadian economic activity and in particular to foster and promote (1) the development of improved production and distribution methods; (2) the development of improved management techniques; (3) the maintenance of good human relations in industry; (4) the use of training programs; (5) the use of re-training programs; (6) the extension of industrial research programs; and (7) the dissemination of technical information. The proceedings of the Council, which is not an agent of Her Majesty, are reported to Parliament each year through the Ministers of Trade and Commerce and Labour. (See footnote, p. 115.)

National Research Council.-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 universities and industries; sponsors Associate Committees co-ordinating research on specific problems of national interest; and develops and maintains 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. 118). 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 Chairman of the Committee of the Privy Council on Scientific and Industrial Research (at present the Minister of Defence Production).

Northern Canada Power Commission.-The Commission was established by Act of Parliament in 1948 to provide electric 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 authority to the Commission to provide similar services in Yukon Territory. The name of the Commission, formerly Northwest Territories Power Commission, was changed in 1956. The Commission is composed of a chairman and two members appointed by the Governor in Council.

The Commission operates four hydro-electric plants, two of which are located in the Northwest Territories on the Snare River near Yellowknife, and two in the Yukon Territory on the Yukon River at Whitehorse and on the Mayo River near Mayo, and diesel electric plants at Fort Smith, Fort Simpson, Fort Resolution, Aklavik and Frobisher Bay, N.W.T., and Field, B.C., and a diesel power and central heating plant and water supply and sewerage systems at Inuvik, N.W.T.; the Commission also operates, on behalf of the Department of Northern Affairs and National Resources, a small diesel electric and heating plant at Fort McPherson, N.W.T., and a central heating plant and domestic water supply system at Fort Simpson, N.W.T.

The Minister of Northern Affairs and National Resources reports to Parliament for the Commission.

Northern Ontario Pipe Line Crown Corporation.- This Corporation was established by the Northern Ontario Pipe Line Crown Corporation Act (SC 1956, c. 10) for the purpose of constructing the northern Ontario section of the all-Canadian natural gas pipeline and of leasing, with an option to purchase, this section to Trans-Canada Pipe Lines Limited. The northern Ontario section, which extends from the Manitoba-Ontario border to the vicinity of Kapuskasing, Ont., was completed on Oct. 22, 1958 and is now under lease to Trans-Canada Pipe Lines Limited. The Corporation is responsible to Parliament through the Minister of Trade and Commerce. (See footnote, p. 115.)

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. The Company is responsible to Parliament through the Minister of Trade and Commerce.

Park Steamship Company Limited.-After World War II this Company acted as an agent for Crown Assets Disposal Corporation in the sale and delivery to purchasers of government warbuilt ships. This work is completed but the Company remains available to carry out any appropriate duties. It has no staff of its own, any necessary work being done by the staff of the Canadian Maritime Commission (see p. 115). The Company reports to Parliament through the Minister of Transport.

Polymer Corporation Limited.-This Corporation was established in 1942 by Letters Patent under the Companies Act and is subject to the Government Companies Operation Act (RSC 1952, c. 133) and the Financial Administration Act (RSC 1952, c. 116). It was set up to construct and operate a synthetic rubber plant which now produces a variety of synthetic rubber products and some chemicals. The Corporation's principal plant is located at Sarnia, Ont., with specialty rubber and butyl plants in France and Belgium, respectively. The Corporation is responsible to Parliament through the Minister of Defence Production.

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 Authority is composed of a President and a Vice President and reports to Parliament through the Minister of Transport.

Trans-Canada Air Lines.-TCA came into being by Act of Parliament in 1937 (RSC 1952, c. 268) to provide for the development of a publicly owned scheduled transcontinental air service. Transatlantic air services were inaugurated by TCA on behalf of the Canadian Government during World War II and scheduled operations were commenced at the end of the War. TCA now maintains passenger, mail and commodity traffic 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. TCA is responsible 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) for the purpose of administering the Act and providing a National Employment Service. 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 after 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

Nore.-Copies of individual Acts of Parliament and amendments may be obtained from the Queen's Printer, Ottawa, at prices of from 10 cents to $\$ 1.50$ per copy according to number of pages. Where duplications of certain Acts appear in the list, parts of these Acts are administered under the Departments given.


[^33]
## 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 GOVERNMENT EMPLOYMENT

The Civil Service Commission.-As the central personnel agency of the Federal Government, the Civil Service Commission is the custodian of the merit system in the Civil Service of Canada. It is also concerned, however, with many other aspects of personnel administration.

The Civil Service Commission was first established in 1908 under the provisions of the Civil Service Amendment Act of that year which introduced the principle of selection by order of merit for positions in Ottawa. Prior to that, a Board of Examiners (established in 1882) held qualifying examinations for appointment to the service but it did not have the power to appoint. In 1918, the Civil Service Amendment Act was superseded by a Civil Service Act which had the effect, among other things, of bringing positions outside of Ottawa, as well as those at headquarters, under the jurisdiction of the Act and consequently the Commission. This Act served Canada and the civil service well for over four decades until with the passage of time it, too, was in need of substantial amendment. This was accomplished through a new Civil Service Act which received Royal Assent in September 1961 and which came into effect on Apr. 1, 1962.

The new Act applies to about 136,000 employees in all the departments and certain agencies of government and this constitutes the 'civil service' within the legal meaning of that term. The 'public service' is defined as those departments and agencies listed in Schedule A of the Public Service Superannuation Act which embrace about 190,000 employees including the 136,000 under the Civil Service Act. This definition of public service does not include certain Crown corporations-for example, the Canadian Broadcasting Corporation, the Central Mortgage and Housing Corporation, the Canadian National Railways and the Trans-Canada Air Lines.: Agencies outside the civil service make their own arrangements, in accordance with various statutes, for the selection and employment of staff.

Recruitment.-The recruitment of civil servants under the Civil Service Act is conducted by means of open competitive examinations through which every citizen has the opportunity to compete for positions in the service of his country. Examinations are held periodically as staff requirements of the civil service dictate. Ordinarily, any Canadian citizen may apply for headquarters positions at Ottawa but applicants for local positions must normally be residents of the locality in which the vacancy occurs. Competitive examinations are announced through the press and through posters displayed on the public notice boards of the larger post offices, offices of the National Employment Service, offices of the Civil Service Commission and elsewhere. The examinations may be written, oral, a demonstration of skill, or any combination of these.

The names of persons successful in civil service examinations, arranged in order of rank, are recorded on eligible lists. Examination results are formally announced by publication in the Canada Gazette and each candidate-successful or unsuccessful-is advised of his standing. Appointments are made as required from the eligible lists which usually remain valid for one year.

The rank of the various successful candidates on eligible lists is influenced by the veterans' preference. The preference is limited largely, in accordance with its definition by law, to members of the Armed Forces who have served overseas in World Wars I or II or in the Korean theatre of operations. The highest order of preference is the disability preference accorded to pensioners of the Armed Forces who, as a result of their war service, have been unable to resume their pre-war civilian occupations.

The operations of the Civil Service Commission are decentralized to a considerable degree and the Commission now has ten district offices and six sub-offices across the country. These offices have a significant measure of autonomy enabling them to give quick and efficient service to the field agencies of departments which comprise over three quarters of the civil service.

Each year the Civil Service Commission conducts about 10,000 competitions, receives about 180,000 applications and makes about 23,000 appointments, mainly to offset the
turnover occasioned by deaths, retirements, resignations and the other forms of attrition. One feature of its recruiting program is the annual selection of 600 or more university graduates. There are some 10,000 university graduates in the civil service and, of course, many more in agencies and corporations not under the Civil Service Act.

Promotion.-It is a prime feature of the Civil Service Act to create a career service. The result is that promotion, like entrance, is based on merit and a sound promotion system is in operation. Promotion competitions are of two kinds, inter-departmental and departmental. The former are open to employees of all departments and agencies and are conducted by the Civil Service Commission. The latter, the departmental competitions, are restricted to employees of one department or a portion of a department and are conducted by the departments themselves subject to audit and approval by the Commission. It is also provided in the Act that persons employed in the public service outside the civil service, and members of the Armed Forces and the Royal Canadian Mounted Police, may also be considered in promotion competitions where it is thought necessary to do so to attract persons with a high level of skill or ability to positions in the civil service. Each year approximately 6,000 promotion competitions are conducted and about $20,000 \mathrm{em}$ ployees are promoted, including 5,500 reclassifications. For those employees who feel that their qualifications have not been properly assessed, appeals are conducted under the jurisdiction of the Commission.

Position Classification.-Provision is made in the Civil Service Act for the classifying of positions in the civil service. A formal system of position classification was first instituted in 1919 and positions with like duties and responsibilities were classified alike and remunerated equally. Each position has a title, a set of tasks or duties which are proper to it in the organization in which it occurs and, arising out of these duties, a set of qualifications appropriate for their performance. Positions with duties of a similar kind are grouped together under a common title to form a class and grades within the class reflect the level of responsibility. There are some 1,800 classes and grades in the civil service and the Commission is constantly reviewing them to ensure that the specifications are accurate. Position classification is a mainspring in the Commission's primary function of recruitment, involving as it does the fixing of standards of qualification for each class of position.

Salary Determination.-It is also a responsibility of the Civil Service Commission to recommend to the Governor in Council rates of pay for each class and grade in the civil service. In order that its recommendations may be soundly based, the Commission has established a Pay Research Bureau which provides objective information on compensation and working conditions for various occupations in government, business and industry. These data are studied in relation to comparable classes in the civil service and in combination with other relevant factors-such as the need to recruit and retain sufficient staff, and in the light of the relationship of one class to another-and after this process is complete a recommendation is submitted to the Governor in Council for consideration. The Governor in Council also fixes the salaries for those employees who are not under the Civil Service Act.

Organization and Methods.-In recent years there has been an increasing awareness of the extent to which economical administration depends on the adoption of modern management techniques and devices. To meet this need the Commission has created a Management Analysis Division and an Organization Division to study problems of management in collaboration with officials directly responsible for major areas of administration. These Divisions afford practical assistance to departments and other agencies of the Government through the systematic examination of structures, operations, procedures and work methods. Their facilities are offered free of charge to all departments.

Staff Training.-In 1947 the Commission set up a Staff Development and Training Division to promote and guide a systematic service-wide training scheme. The training scheme sponsored by the Commission is a joint venture undertaken in co-operation with the various departments, most of which have parallel training divisions. The Commission's Staff Development and Training Division is primarily a co-ordinating agency. It promotes and organizes training activities, trains departmental instructors in the presentation of
courses, prepares and gives certain courses of general application to all departments, publishes booklets and other training aids, assists departments in developing training to meet specialized needs and acts as a general clearing-house for the exchange of information on training matters.

Employee Relations.-The Civil Service Act confers on appropriate staff associations the right to be consulted on matters of remuneration and conditions of employment. This consultation may be initiated by either the official or staff sides and may take three forms. On questions of remuneration, which include certain allowances as well as pay, the consultation takes place between the associations and the Minister of Finance or such members of the public service as he may designate and this may, of course, include members of the Commission. On terms and conditions of employment as enumerated in Sect. 68 (1) of the Civil Service Act (which are mainly those with a fiscal effect, such as leave), the consultation takes place between the associations and the Commission and such members of the public service as the Minister of Finance may designate. On those terms and conditions of employment that come within the exclusive jurisdiction of the Commission, the consultation takes place between the associations and the Commission alone. This form of tripartite consultation was introduced on Apr. 1, 1962 when the new Civil Service Act came into force and is designed to be consistent with the distribution of authority in the Act. It is expected to introduce a more sophisticated employee-employer relationship to the federal civil service.

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 6 cover employees in the first category and Table 7 covers employees in the second category.
1.-Total Federal Government Employees, by Province, as at Mar. 31, 1962, and Earnings for the Year Ended Mar. 31, 1962

| Item and Province or Territory | Departments | Departmental Corporations | Agency Corporations | Proprietary Corporations | Other Agencies | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Employees- | No. |  | No. | No. | No. | No. |
| Newfoundland....... | 3,905 | 226 | - | 5,062 | 4 | 9,197 |
| Prince Edward Island. | 1,307 | 58 | - 345 | ${ }^{973}$ |  | 2,338 |
| Nova Scotia.......... | 13,439 | 439 | 345 | 5,755 | 41 | 20,019 |
| New Brunswick | 6,595 | 583 | 124 | 7,140 | 15 | 14,457 |
| Quebec.. | 30,030 | 3,115 | 3,337 | 29,518 | 278 | 66,278 |
| Ontario....... | 81,269 | 7,523 | 4,677 | 33,962 | 935 | 128,366 |
| Manitoba............ | 9,682 | 674 | 60 | 14,027 | 604 | 25,047 |
| Saskatchewan. | 6,130 | 441 | 58 | 4,367 | 28 | 11,024 |
| Alberta........... | 13,212 | 593 1,233 | 37 177 | 6,578 6,331 | 78 | 20,492 26,89 |
| Yukon and Northwest Territories. Abroad. | 3,383 2,672 | 7 17 | 150 10 | 64 7,806 | 9 | 3,604 10,514 |
| Totals, Employees. . . . | 190,644 | 14,909 | 8,975 | 121,583 | 2,064 | 338,175 |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Totals, Earnings....... | 794,814 | 61,471 | 46,180 | 611,375 | 8,950 | 1,522,790 |

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

* Prepared in the Public Finance and Transportation Division, Dominion Bureau of Statistics.
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, 1962

Nore.-Excludes agency and proprietary corporations and other agencies, figures for which are given in Table 7.

| Province or Territory | Salaried | Prevailing Rate ${ }^{1}$ | Ships' Officers and Crews | Totals ${ }^{1}$ | $\begin{aligned} & \text { Casuals } \\ & \text { and } \\ & \text { Others } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. |
| Newfoundland............................ ${ }_{\text {M. }}^{\text {M. }}$ | 2,871 | 498 | 204 | 3,573 | 558 |
|  | 2,510 | 419 | 204 | 3,133 | 341 |
|  | 361 | 70 | 204 | 431 | ${ }^{31}$ |
| Prince Edward Island.......................... | 764 | 328 | 108 | 1,200 | 165 |
|  | 636 | 137 | 108 | 881 | 157 |
| F. | 128 | 15 | - | 149 | 8 |
| Nova Scotia. . . . . . . . . . . . . . . . . . . . . . . . T. $_{\text {M. }}$ | 7,993 | 3,132 | 1,004 | 12,129 | 1,749 |
|  | 6,090 | 2,478 | 1,004 | 9,567 | 1,555 |
| F. | 1,909 | 288 |  | 2,191 | 67 |
| New Brunswick.......................... ${ }_{\text {M. }}^{\text {M. }}$ | 5,451 | 957 | 136 | 6,544 | 634 |
|  | 4,345 | 758 | 136 | 5,239 | 415 |
|  | 1,106 | 182 | - | 1,288 | 124 |
| Quebec. ....................................... | 26,226 | 3,947 | 596 | 30,769 | 2,376 |
|  | 20,204 | 3,163 | 596 | 23,963 | 1,868 |
|  | 6,022 | 780 | - | 6,802 | 507 |
| Ontario.......................................... | 77,644 | 7,117 | 130 | 84,891 | 3,901 |
|  | 52,997 | 4,698 | 127 | 57,828 | 2,621 |
|  | 24,647 | 2,359 | $s$ | 27,003 | 1,270 |
| Manitoba. . . . . . . . . . . . . . . . . . . . . . . . $\mathrm{T}_{\text {M. }}^{\text {M. }}$ | 8,057 | 1,385 | 11 | 9,453 | 903 |
|  | 6,049 | 1,863 | 11 | 6,923 | ${ }_{6}^{633}$ |
|  | 2,008 | 413 | - | 2.421 | 239 |
| Saskatchewan............................ ${ }_{\text {M. }}^{\text {M. }}$ | 5,615 | 489 | - | 6,104 | 467 |
|  | 4,525 | 407 | - | 4,938 | 338 |
|  | 1,090 | 82 | - | 1,172 | 182 |
| Alberta...................................... ${ }^{\text {M. }}$ | 10,266 | 2,339 | 7 | 12,612 | 1,193 |
|  | ${ }^{7}, 661$ | 1,394 | 7 | 9,002 | ${ }^{751}$ |
|  | 2,605 | 581 | - | 2,986 | 287 |
| British Columbia.................................. | 15,353 | 2,689 | 684 | 18,726 | 1,527 |
|  | 11,398 | 1,866 | 684 | 18,948 | 1,163 |
| F. | 3,955 | 557 | - | 4,512 | 225 |
| Yukon and Northwest Territories............... ${ }_{\text {M. }}$ | 1,571 | 878 | 19 | 2,468 | 922 |
|  | 1,168 | 514 | 19 | 1,701 | 265 |
| F. | 408 | 98 | - | 601 | 45 |
| Abroad. .......................................... ${ }_{\text {M. }}^{\text {M. }}$ | 2,532 | - | - | 2,532 | 157 |
|  | 1,485 | - | - | 1,485 | 97 |
|  | 1,097 | - | - | 1.097 | 60 |
| Canada....................................... ${ }_{\text {M. }}^{\text {T. }}$ | 164,343 | 23,7591 | 2,899 | 191,001 ${ }^{1}$ | 14,552 ${ }^{2}$ |
|  | 119,018 | 16,632 | 2,896 | 138,546 | 10,228 |
|  | 45,325 | 5,219 | 3 | 50,547 | 2,943 |

[^34]${ }^{2}$ Provincial totals

## 3.-Employees in Departmental Branches, Services and Corporations and their Earnings, by Month, April 1961 to March 1962

Note.-Excludes agency and proprietary corporations and other agencies, figures for which are given in Table \%.

| Month | Salaried | Prevailing Rate | Ships' Officers and Crews | Total | $\begin{aligned} & \text { Casuals } \\ & \text { and } \\ & \text { Others } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Employees at the End of Each Month |  |  |  |  |
|  | No. | No. | No. | No. | No. |
| April 1961. | 160,435 | 23,903 | 2,908 | 187,246 | 13,180 |
| May...... | 162,082 | 24,605 | 3,026 | 189,713 | 13, 842 |
| June. | 163,698 | 26,390 | 3,212 | 193,300 | 14,502 |
| July.... | 164,536 | 27,112 | 3,225 | 194,873 | 15,097 |
| August. | 164,829 | 26,391 | 3,240 | 194,460 | 15,698 |
| September | 163,156 | 24,301 | 3,185 | 190,642 | 14,959 |
| October. | 163,362 | 23,463 | 3,197 | 190,022 | 14,111 |
| December | 162,547 | 23,281 | 3,054 | 188, 882 | 13,246 |
| January 1962 | 163,719 | 23,837 | 2,888 | 190,444 | 14,733 |
| February... | 164,084 | 23,641 | 2,847 | 190,572 | 14,995 |
| March... | 164,343 | 23,759 | 2,899 | 191,001 | 14,552 |
|  | Regular Earnings |  |  |  |  |
|  | \$ | \$ | \$ | \$ | \$ |
| April 1961. | 57,255,096 | 6,063,703 | 899,467 | 64,218,266 | 3,113,198 |
| May...... | 57,659,346 | 6,785,703 | 951,466 | 65, 396,515 | 3,569,435 |
| June. | 58,213,859 | 7,191,385 | 995, 949 | 66,401, 193 | 3,726,537 |
| July. | 58,685,192 | 7,055,012 | 1,033,347 | 66,773,551 | 3,736,669 |
| August. | 58,743,740 | 7,294,363 | 1,057,215 | 67,095,318 | 4,067,244 |
| Septembe | $58,424,597$ <br> 58,589 | $6,625,919$ $6,476,406$ | 1,044,657 | 66,099,493 | 3, 3 318, 265 |
| November | 58,556,369 | 6,559,731 | 1,034,610 | 66,150,710 | 3,352,325 |
| December | 58,510,246 | 6,443,379 | 947,196 | 65,900,821 | 3,331,476 |
| January 1962 | 59,006,144 | 6,790,395 | 946,170 | 66,742,709 | 3,631,180 |
| March.... | 59,085,557 | 6,137,040 | 923,165 | 66,145,762 | 3, 435, 830 |
|  | 59,376,011 | 6,708,469 | 943,991 | 67,028,471 | 3,923,235 |
|  | Overtime Payments Reported |  |  |  |  |
|  | \$ | \$ | \$ | \$ | \$ |
| April 1961.. | 787,801 | 209,492 | 71,020 | 1,068,313 | 68,676 |
| May. | 810,919 | 304,783 | 117,358 | 1,233,060 | 84,142 |
| June. | 662,075 | 268,494 | 121,119 | 1,051,688 | 105,571 |
| July. | 604,465 | 259,596 | 107,621 | 971,682 | 176,670 |
| August | 475,982 | 241,855 | 133,516 | 851,353 | 177,171 |
| September | 456,232 | 254,544 | 158,668 | 869,444 | 177,550 |
| October. | 674,885 | 241, 170 | 137,066 | 1,053,121 | 138,543 |
| November | 774,798 | 242,131 | $\begin{array}{r}131,991 \\ 87 \\ \hline 1\end{array}$ |  |  |
| December... | 1,006,443 | ${ }_{359}^{273,283}$ | 87,241 | $1,366,967$ $1,618,629$ | 100,778 111,436 |
| February.. |  |  | 77,288 68,012 | $1,618,629$ $1,800,586$ | 111,436 92,386 |
|  | 1,457, 57837 | 243,336 | 75,746 | 1,898,919 | 80,706 |
|  | Retroactive Payments Reported |  |  |  |  |
|  | \$ | § | \$ | \$ | \$ |
| April 1961. | 2,836 | 95,035 | 29,988 | 127,859 | 32,327 |
| May........ | 2,233 | 54,237 | 43,202 | 99,672 | 27,543 |
| June. | 6,956 | 92,919 | $5{ }^{752}$ | 108, 841 | ${ }_{28,416}$ |
| July... | 2,060 2,307 | -99,668 | 5,113 10,531 | 108,841 95,321 | 28,596 |
| September | 1,728 | 61,720 | 50,325 | 113,773 | 18,477 |
| October. | 1,615 | 56,866 | 26,642 | 85,123 | 16,347 |
| November. | 1,658 | 92,182 | 41,255 | 135,095 | 15,673 |
| December | 4,364 | 32,075 | 19,372 | 55, 811 | 11, 426 |
| January 1962 | 4,467 | 20, 331 | 2,394 3,966 | $\begin{array}{r}26,892 \\ 102 \\ \hline 892\end{array}$ | 10,220 |
| February. . | \% $\begin{array}{r}6,535 \\ 2,088,4192\end{array}$ | 92,391 90,552 | 3,966 65 | 2,179,036 | 23,307 |

March.
${ }^{1}$ Includes Christmas overtime pay of Post Office employees.
${ }^{2}$ Includes retroactive payments resulting from the salary revision effective July $1,1961$.

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. Included are employees who work within the boundaries of the metropolitan areas; those residing within those areas but working outside are excluded.
4.-Federal Employees in Metropolitan Areas, by Sex, as at Sept. 30, 1962 and Earnings for September 1962

| Area | Persons Employed at Sept. 30, 1962 |  |  |  |  | Regular Earnings September 1962 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Male | Female | Undistributed | Total | P.C. of Grand Total | Total | P.C. of Grand Total |
|  | No. | No. | No. | No. |  | \$ 000 |  |
| Metropolitan Areas. | 94,459 | 39,157 | 66 | 133,682 | 66.3 | 48,582 | 69.1 |
| Ottawa, Ont.-Hull, Que. | 29,857 | 17,587 | 5 | 47,449 | 23.5 | 18,821 | 26.8 |
| Montreal, Que. | 14,061 | 4,400 | - | 18,461 | 9.2 | 6,281 | 8.9 |
| Toronto, Ont. | 11,012 | 4,313 | - | 15,325 | 7.6 | 5,147 | 7.3 |
| Halifax, N.S. | 7,237 | 1,722 | 48 | 9,007 | 4.4 | 3,001 | 4.3 |
| Vancouver, B.C | 6,343 | 2,339 | 5 | 8,687 | 4.3 | 3,154 | 4.5 |
| Winnipeg, Man. | 4,536 | 1,689 | - | 6,225 | 3.1 | 2,219 | 3.1 |
| Victoria, B.C. | 4,098 | 1,068 | - | 5.166 | 2.6 | 1,908 | 2.7 |
| Edmonton, Alta | 3,429 | 1,561 | - | 4,990 | 2.5 | 1,739 | 2.5 |
| Quebec, Que. | 3,112 | ${ }^{888}$ | 1 | 4,001 | 2.0 | 1,392 | 2.0 |
| London, Ont.. | 2,602 | 1,256 | - | 3,858 | 1.9 | 1,270 | 1.8 |
| Calgary, Alta. | 2,215 1,960 | 751 275 | 7 | 2,966 2,242 | 1.5 | 1,031 | 1.5 |
| Saint John, N.B | 1,173 | 512 | - | 1,685 | 0.8 | 578 | 0.8 |
| Hamilton, Ont | 1,199 | 377 | - | 1,576 | 0.8 | 581 | 0.8 |
| Windsor, Ont. | 998 | 181 | - | 1,179 | 0.6 | 442 | 0.6 |
| Kitchener-Waterloo, Ont. | 399 | 109 | - | 508 | 0.2 | 190 | 0.3 |
| Sudbury, Ont. | 228 | 129 | - | 357 | 0.2 | 125 | 0.2 |
| Non-metropolitan Areas. | 53,245 | 11,555 | 3,064 | 67,864 | 33.7 | 21,722 | 30.9 |
| In Canada................. | 51,675 | 10,374 | 3,064 | 65,113 | 32.3 | 20,827 | 29.6 |
| Outside Canada | 1,570 | 1,181 | - | 2,751 | 1.4 | 895 | 1.3 |
| Grand Totals. | 147,704 | 50,712 | 3,130 | 201,546 | 100.0 | 70,304 | 100.0 |
|  | p.c. | p.c. | p.c. | p.c. |  | p.c. |  |
| Metropolitan Areas...... | 64.0 | 77.2 | 2.1 | 66.3 | $\ldots$ | 69.1 | $\ldots$ |
| Non-metropolitan Areas. | 36.0 | 22.8 | 97.9 | 33.7 | $\ldots$ | 30.9 | ... |
| In Canada. | 35.0 | 20.5 | 97.9 | 32.3 | $\ldots$ | 29.6 | $\ldots$ |
| Outside Canada. | 1.0 | 2.3 | - | 1.4 | $\ldots$ | 1.3 | $\ldots$ |
| Grand Totals | 100.0 | 100.0 | 100.0 | 100.0 | $\cdots$ | 100.0 | ... |

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.

Table 6 is an administrative analysis of departmental branches, services and corporations, showing data for these bodies as they were organized at Mar. 31, 1962. Because of periodic changes in the administrative structure of the Government, comparisons over a period of years should be based on the classification by function given in Table 5. Although most salaried staffs fluctuate little during the year, the Taxation Branch of the Department of National Revenue increases its staff considerably in March and April because of the heavy flow of income tax returns during that period, the Legislation branches employ extra staff during each session of Parliament, and several departments employ considerable numbers of students in the summer months. Prevailing rate and other types of employment generally reach a peak in numbers during summer and decline to a lower level in winter.
5.-Federal Government Employees as at Mar. 31, 1962, and Regular Earnings for the Year Ended Mar. 31, 1962, classified by Function

Note.-Excludes agency and proprietary corporations and other agencies, figures for which are given in summary form in Table 7.

| Function | Salaried |  | Prevailing Rate |  | Ships' Officers and Crews |  | Totals |  | Casuals and Others |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { Em- } \\ & \text { ployees } \end{aligned}$ | Regular Earnings | Employees | Regular Earnings | Employees | Regular Earnings | $\underset{\text { ployees }}{\text { Em- }}$ | Regular Earnings | Employees | Regular Earnings |
|  | No. | \$ | No. | \$ | No. | \$ | No. | \$ | No. | \$ |
| Defence Services. | 32,353 | 127,797,155 | 13,935 | 50,076,567 | 647 | 2,500,888 | 46,935 | 180,374,610 | 6,795 | 22,417,553 |
| Veterans Pensions and Other Benefits. | 11,469 | 45,808,747 | 1,967 | 4,499,308 | - | - | 13,436 | 50,308,055 | - | - |
| General Government. | 29,820 | 128,467,444 | 2,987 | 9,042,155 | 1 | 17,679 | 32,808 | 137,527,278 | 379 | 1,130,044 |
| Executive and administrative...................... | 26,719 | 115,455,682 | 2,981 | 9,034,963 | 1 | 17,679 | 29,701 | 124,508,324 | 319 | 1,058,568 |
|  | 989 | 2,999,194 | 6 | 7,014 | - |  | 995 | 3,006,208 | - |  |
| Research, planning and statistics................. | 2,112 | 10,012,568 | - | 178 | - | - | 2,112 | 10,012,746 | 60 | 71,476 |
| Protection of Persons and Property. . . . . . . . . . . . | 11,956 | 53,552,074 | - | - | - | - | 11,956 | 53,552,074 | 9 | 38,932 |
| Law enforcement..... . . . . . . . . . . . . . . . . . . . . . . . . . . | 201 | 1,012,279 | - | - | - | - | 201 | 1,012,279 | - |  |
| Correction. . | 2,493 | 11,069,827 | - | - | - | - | 2,493 | 11,069,827 | 9 | 34,600 |
| Police protection.. . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 8,127 | 35, 494, 060 | - | - | - | - | 8,127 | 35,494, 060 | - |  |
| Other..... . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 1,135 | 5,975,908 | - | - | - | - | 1,135 | 5,975,908 | - | 4,332 |
| Transportation and Communications............. | 10,155 | 47,744,014 | 1,009 | 3,201,848 | 1,920 | 7,876,270 | 13,084 | 58,822,132 | 1,444 | 5,360,149 |
| Airways.......................................... | 3,928 | 19,021, 901 | 472 | 1,489,198 | $\underline{-}$ | , | 4,400 | 20,511,099 | 546 | 1,987,196 |
| Highways, roads and bridges....................... | 242 | 1,519,637 | 173 | 403,386 | - | - | 415 | 1,923,023 | 95 | 170,492 |
| Railways. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 164 | 1,086,288 | 1 | - | - | - | 164 | 1,086,288 | - | - |
| Telephone, telegraph and wireless. . . . . . . . . . . . . . | 2,593 | 12,127,428 | 19 | 67,351 | 1.020 | 7870,270 | 2,612 | 12,194,779 | 55 | 329,982 |
| Waterways................ . . . . . . . . . . . . . . . . . . . . . | 2,655 | 11,414,518 | 345 | 1,241,913 | 1,920 | 7,876,270 | 4,920 | 20,532,701 | 748 | 2,872,479 |
| Other. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 573 | 2,574,242 | - | - | - |  | 573 | 2,574,242 | - |  |
| Health. | 3,050 | 12,672,996 | 504 | 1,004,566 | - | - | 3,554 | 13,677,562 | 278 | 674,629 |
| General. | 395 | 1,755,388 | 4 | 14,233 | - | - | 399 | 1,769,621 | - | 320 |
| Public health. | 677 | 3,706,936 | 51 | 154,347 | - | - | 728 | 3,861,283 | 17 | 23,280 |
| Hospital care. | 1,978 | 7,210,672 | 449 | 835,986 | - | - | 2,427 | 8,046,658 | 261 | 651,029 |


| Social Welfare | 11，018 | 44，844，767 |  | 44，545 | 4 | 13，858 | 11，037 | 44，903，170 | 1，972 | 3，509，812 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Aid to aged persons | 789 | 115，653 | － |  |  |  |  | 115，653 |  |  |
| Family allowances． | 789 | $2,815,071$ $2,045,443$ |  |  |  |  | 789 | 2， $2,045,071$ |  | 21，087 |
| National employment services | 8，840 | 35，316， 287 | 3 | 11，757 |  |  | 8，843 | 35， 328,044 | 1，894 | 3，455，957 |
| Other social welfare．．．．．．．．．．． | 952 | 4，552，313 | 12 | 32，788 | 4 | 13，858 | 988 | 4，598，959 | 66 | 31，868 |
| Recreational and Cultural Services．．．．．．．．．．．．． | 1，620 | 8，370，684 | 1，645 | 5，459，116 | － | － | 3，265 | 13，829，800 | 808 | 2，434，274 |
| Archives，art galleries，museums and libraries．．．． | 313 544 | 1，453，066 |  | 23,992 $5,435,124$ |  | 二 | 2，172 | 1，477，058 | 752 | 33,366 $2,272,934$ |
| Parks，beaches and other recreational areas．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | 544 2 | $1,635,547$ 3,482 4 | 1，628 | 5，435，124 | 二 | 二 | 2,172 2 | 8，070，701 | 752 | 2，272，934 |
| Other．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | 761 | 4，278，559 | － | － | － | － | 761 | 4，278，559 | 47 | 127， 974 |
| Education． | 1，812 | 8，003，123 | 20 | 39，429 | － | － | 1，832 | 8，042，552 | 374 | 171，107 |
| Indian and Eskimo schools and schools in N．W．T． Universities，colleges and other schools． | 1，795 | $8,913,768$ 89,355 | 20 | 39，429 | 二 | 二 | 1,815 17 | $7,953,197$ 89,355 | 374 | 171，107 |
| Natural Resources and Primary Industries．．．．．． | 13，520 | 69，137， 312 | 1，555 | 6，337，369 | 323 | 1，387，716 | 15，398 | 76，862，397 | 997 | 2，716，144 |
| Fish and game．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | 1，697 | 8，948，650 | 28 | 329， 883 | 323 | 1，387，716 | 2，048 | 10，666， 249 | 110 | 646，303 |
| Forests． | 963 | 4，986， 074 | 65 | 333，971 | － |  | 1，031 | 5，320，045 | 115 | 112，424 |
| Lands－settlement and agricult | 7，831 | 38，644，562 | 1，118 | 4，354，083 | － | － | 8,949 | 42，998，645 | 150 | 1，079，597 |
| Minerals and mines． | 1，310 | 7，893，898 | 74 | 310，925 | － | － | 1，384 | 8，204，823 |  |  |
| Water resources． | 213 | 1，169，704 | 4 | 13，206 | － | － | 217 | 1，182，910 | 13 | 78，307 |
| Other． | 1，503 | 7，494，424 | 268 | 995，301 | － | － | 1，769 | 8，489，725 | 609 | 799，513 |
| Trade and Industrial Development． | 1，198 | 5，581，196 | － | － | － | － | 1，198 | 5，581，196 | 55 | 227，511 |
| Public Service and Trading Enterprises．． | 154 | 646，661 | － | － | － | － | 154 | 646，661 | 36 | 220，096 |
| Other | 36，218 | 149，479，932 | 122 | 426，596 | 4 | 13，961 | 36，344 | 149，920，489 | 1，405 | 4，464，044 |
| Civil Defence．．．．．．．．．．．．．．． | 135 | 599， 370 | 35 | 87，413 |  |  | ${ }_{113}^{170}$ | 686，783 | － |  |
| International co－operation and assistance | 113 2,636 | ［ 5688,954 | 35 | $\overrightarrow{84}, 499$ | 4 | 13，961 | 113 2,675 | 568,954 $11,816,544$ | 62 | 38，485 |
| External Affairs．．．．．．．．．． | 2，060 | －8，819，107 | 35 | 84，499 | 4 | 13，901 | 2，060 | 8，819，107 | 130 | 94，070 |
| Bullion and coinag | 201 | 940，944 |  |  |  |  | 201 | 940，944 |  |  |
| Post Office． | 26，3951 | 101，302，2401 | 24 | 133，810 | － | － | 26，419 | 101，436，050 | $621{ }^{2}$ | 1，194，212 ${ }^{2}$ |
| Other． | 4，678 | 25，531，233 | 28 | 120，874 | － | － | 4，706 | 25，652，107 | 592 | 3，137，277 |
| Grand Totals ${ }^{\text {a }}$ ． | 164，343 ${ }^{4}$ | 702，106，105 | 23，759 | 80，131，499 | 2，899 | 11，810，372 | 191，001 | 794，047，976 | 14，552 | 43，364，295 |

# 6.-Federal Government Employees as at Mar. 31, 1962, and Regular Earnings for the Year Ended Mar. 31, 1962, classified 

 by Department and Principal Branch or ServiceNote.-Excludes agency and proprietary corporations and other agencies, figures for which are given in summary form in Table 7.

| Department and Branch or Service | Salaried |  | Prevailing Rate |  | Ships' Officers and Crews |  | Totals |  | Casuals and Others |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\underset{\text { ployees }}{\text { Em- }}$ | Regular Earnings | Employees | Regular Earnings | $\underset{\text { ployees }}{\text { Em- }}$ | Regular Earnings | Employees | Regular Earnings | Employees | Regular Earnings |
|  | No. | \$ | No. | \$ | No. | \$ | No. | § | No. | 8 |
| Agriculture. | 7,981 | 39,261,498 | 1,118 | 4,354,083 | - | - | 9,099 | 43,615,581 | 186 | 1,299,693 |
| Administration Branch | 381 | 1,852, 120 |  |  |  |  | 381 | 1,852,120 | - |  |
| Research Branch. | 2,489 | 13,488, 479 | 913 | 3,620,333 | - |  | 3,402 | 17,108,812 |  |  |
| Production and Marketing Branc | 3,236 1,035 | $15,433,953$ $4,488,115$ | 60 | 250,846 2,139 | - | - | 3,296 1,035 | $15,684,799$ $4,490,254$ | 43 38 | 132,623 279,788 |
| Land rehabilitation, irrigation and water storage projects. <br> Special | 1 792 48 | 4,488,15 | 145 | 2,139 480,765 | - | - | 1,035 937 | $4,490,254$ $4,275,841$ | 88 | 433,652 |
| Atomic Energy-Atomic Energy Control Board. . | 11 | 56,961 | - | - | - | - | 11 | 56,961 | - | - |
| Auditor General's Offlce. | 152 | 958,080 | - | - | - | - | 152 | 958,080 | - | - |
| Board of Broadcast Governors. | 31 | 192,241 | - | - | - | - | 31 | 192,241 | - | - |
| Chief Electoral Officer, Office of the | 18 | 82,947 | - | - | - | - | 18 | 82,947 | - | - |
| Citizenship and Immigration. | 4,508 | 19,543,543 | 65 | 152,383 | 4 | 13,858 | 4,577 | 19,709,784 | 495 | 228,753 |
| Departmental Administration. | 168 | 753,220 |  | 3,910 | - |  | 169 | 757,130 | - | - |
| Citizenship....... | 198 | 873,813 7892 |  |  | - | - | 198 | -873,813 |  | 25,778 |
| Indian Affairs Branch | 1,874 2,268 | r $70,8924,463$ | $\stackrel{32}{32}$ | 76,256 72,217 | 4 | 13,858 | 2,304 | 10,110,538 | 440 | 202,975 |
| Civil Service Commission. | 696 | 3,533,653 | - | - | - | - | 696 | 3,533,653 | 18 | 12,964 |
| Defence Production. | 1,485 | 7,825,200 | - | - | - | - | 1,485 | 7,825,200 | 32 | 35,346 |
| External Affairs. | 2,164 | 9,339,113 | - | - | - | - | 2,164 | 9,339,113 | 130 | 94,070 |
| Departmental Administration | 957 | 4,818,530 | - |  |  |  | 957 | 4,818,530 |  |  |
| Representation Abroad ${ }^{1}$ | 1,111 | 4,070,769 | - | - | - | - | 1,111 | 4,070,769 | 150 | 94,070 |
| External Aid Office............. | 84 | 366,837 | - | - | - | - | 84 | 366,837 | - | - |
| - Joint Con | 12 | 82,977 | - | - |  |  | 12 |  |  |  |
| Finance.............. | 5,195 | 20,344,591 | - | - | - | - | 5,195 | 20,344,591 | 132 | 271,679 |
| General AdministrationDepartmental Administration. |  |  |  |  |  |  | 250 |  |  |  |
| Comptroller of the Treasury.. | 4,488 | 16,728,787 | 二 | - | - |  | 4,488 | 16,728,787 | 130 | 268,834 |
| Administration of various Acts. | 438 | 1,941,308 | - | - | - | - | 438 | 1,941,308 |  |  |
| Contingencies and miscellaneous.. | 19 | 61,050 | - | - | - | - | 19 | 61,050 | 2 | 2,845 |
| Fisheri | 1,616 | 8,522,342 | 28 | 329,883 | 323 | 1,387,716 | 1,967 | 10,239,941 | 104 | 633,832 |
| General Services. | 1,053 | 5,282,739 | 27 | 315, 634 | 251 | 1,119,632 | 1,331 | 6,718,005 | 84 | 553,777 |



| $\stackrel{\rightharpoonup}{\circ} \stackrel{0}{6}$ | 껑응్ㅣ | $\underset{0}{0}$ | な్た్ర్ | ింon | 중아액ㅇㅇㅇ O애쌔N | た్ల్న్ | 10ベプロペががす <br>  |  | だ | 8 | N్ర్య్య |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ఱ్సి | คీ毋in | $\approx$ | on | రింo | No |  | ธิグージロ゚ズが かㅇ్ర＝6 | RiNo Noiov | － | ๙ิ์ | Bin Ho |
| ๓ | －－－ic |  |  | Ni= | ๗n n | ヘ์ ${ }^{\text {N }}$ | に゙ージゥ |  | $\cdots$ |  | かin |
| ¢్ల్ర |  | $\stackrel{\sim}{\sim}$ | $\stackrel{\text { ®ै }}{\hat{\prime}}$ |  |  |  |  がN్సగొ <br> ヘi－i |  ฑิ－iம゙न゙かへ | ¢్గి | 8 | ํํํ <br> だ～ |


| － 1 | 14，249 |
| :---: | :---: |
| 65 | 333，971 |
| 2 | 34，957 |
| 54 | 248， 394 |
| － | 10，583 |
| 9 | 40，037 |
| － | － |
| － | － |
| － | － |
| － | － |
| － | － |
| 3 | 11，757 |
| － | － |
| － | － |
| － | － |
| 3 | 11，757 |
| 6 | 7，014 |
| － | － |
| 6 | 7，014 |
| 79 | 328，775 |
| 2 | 8，196 |
| 1 | 3，258 |
| 10 | 30，814 |
| 62 | 271，915 |
| － 3 | －12，388 |
| 1 | 2，204 |
| － | － |
| 13，935 | 50，076，567 |
| 13 | 41，025 |
| 47 | 149，165 |
| 3，818 | 15，180， 024 |
| 4，794 | 18，193， 724 |
| 5，009 | 15，503，163 |
| 254 | 1，009，466 |
| － | － |
| 1 | 3，665 |
| 541 | 1，096，312 |
| 4 | 14，233 |
| 502 | y94，666 |



| Department and Branch or Service | Salaried |  | Prevailing Rate |  | Ships＇Officers and Crews |  | Totals |  | Casuals and Others |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\underset{\text { Em- }}{\text { Eloyees }}$ | Regular Earnings | $\begin{gathered} \text { Em- } \\ \text { ployees } \end{gathered}$ | Regular Earnings | $\underset{\text { ployees }}{\text { Em- }}$ | Regular Earnings | $\begin{gathered} \text { Em- } \\ \text { ployees } \end{gathered}$ | Regular Earnings | $\underset{\text { ployees }}{\text { Em- }}$ | Regular Earnings |
|  | No． | \＄ | No． | \＄ | No． | \＄ | No． | 8 | No． | \＄ |
| National Health and Welfare－concluded Welfare Branch． General． | 814 135 | $2,934,206$ 599,368 | 35 | 87，413 | 二 | 二 | 814 170 | $2,934,206$ 686,781 | 二 | 二 |
| National Research Council including the Medical Research Council． | 2，620 | 14，905，857 | － | － | － | － | 2，620 | 14，905，857 | 583 | 3，072，277 |
| National Revenue．．．．．．．．．．．．． | 14，355 | 67，116，385 | 9 | 32，138 | 1 | 17，679 | 14，365 | 67，166，202 | 二 | 二 |
| Customs and Excise Divisions | 7,417 6,920 | $35,361,136$ $31,649,982$ | $-9$ | 32，138 | 1 | 17，679 | 7,427 6,920 | $35,410,953$ $31,649,982$ | 二 | － |
| Tax Appeal Board．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | 18 | 105，267 | － | － | － | － | 18 | 105，267 | － | － |
| Northern Affairs and National Resources．．．．．．．． | 2，011 | 10，014，701 | 1，908 | 6，445，441 | － | － | 3，919 | 16，460，142 | 1，381 | 3，176，022 |
| Departmental Administration．．．．．．．．．．．．．．．．．．． Northern Co －ordination and Research．．．．．．．．． | 179 11 | 877,228 54,636 | 二 |  | － | 二 | 179 11 | 877,228 54,636 |  |  |
| National Parks Branch．． | 632 | 3，091，676 | 1，628 | 5，435，124 | － | － | 2，260 | 8，526，800 | 758 | 2，285，405 |
| Water Resources Branch． | 213 | 1，169，706 | 4 | 13，206 | － | － | 217 | 1，182，912 | 13 | 78，307 |
| Northern Administration Branch | 800 | 4，036，175 | 264 | 989，839 | － | － | 1，064 | 5，026，014 | 609 | 799，513 |
| National Museum of Canada | 75 | 417，528 | 12 | 7，272 | － |  | 87 | 424，800 | 1 | 12，658 |
| Canadian Government Travel Bureau． | 101 | 367，752 | 12 | ，272 | － | － | 101 | 367，752 | － | 139 |
| Post Office．． | 26，395 | 101，302，235 | 24 | 133，810 | － | － | 26，419 | 101，436，045 | 621 | 1，194，212 |
| Departmental Administratio | 309 | 1，519，647 | － |  | － | － |  | 1，519，647 |  |  |
| Operations．．．．．．．．． | 25，6203 ${ }_{90}$ | $97,743,7063$ <br> 491,961 | 24 | 133，810 | 二 | 二 | 25,644 90 | $97,877,516$ 491,961 | 6214 | 1，194，212 ${ }^{4}$ |
| Financial Services． | 376 | 1，546，921 | － | － | － | － | 376 | 1，546， 921 | － | － |
| Privy Council． | 228 | 1，233，357 | － | － | － | － | 228 | 1，233，357 | － | － |
| Privy Council Office． | 84 | 453，314 | － | － | － | － | 84 | 453，314 | － |  |
| Prime Minister＇s Residence．．．．．．． | $\begin{array}{r}5 \\ 7 \\ \hline\end{array}$ | 19,140 412,837 | － | 二 | 二 | 二 | $\begin{array}{r}5 \\ 74 \\ \hline\end{array}$ | 19,140 412,837 |  |  |
| Special．．．．．．．．．．．．．．．．．．．．．．．． | 65 | 348，066 | － | － | － | － | 65 | 348，066 |  |  |
| Public Archives and National Library | 164 | 709，776 | 4 | 13，055 | － | － | 168 | 722，831 | 5 | 14，493 |
| Public Archives． | 116 | 499，772 | 4 | 13，055 | － | － | 120 | 512，827 | 5 | 14，493 |
| National Library． | 48 | 210，004 | － | － | － | － | 48 | 210，004 |  |  |
| Public Printing and Stationery． | 610 | 2，738，697 | 1，161 | 4，989，653 | － | － | 1，771 | 7，728，350 | 8 | 6，598 |
| Public Works． | 6，149 | 23，553，840 | 1，997 | 4，473，564 | 123 | 888，925 | 8，269 | 28，916，329 | 490 | 2，138，451 |
| General Administration． | 1，497 | 8，185， 181 |  | 288，599 | 二 | － | 1，524 | 8，213，780 | 5 113 | 11，591 |
| Public Buildings Construction and Services．．．．．．． Harbours and Rivers Engineering Services．．．．．．． | 4,428 86 | 14，378，378 | 1,768 13 | $3,973,833$ 57,006 | 123 | 888，925 | 6，196 | $18,352,211$ $1,301,875$ | ${ }_{234}^{113}$ | 1， $1,200,632$ |


| Development Engineering Services | 138 | 634，337 | 189 | 414，126 | － | － | 327 | 1，048，463 | 138 | 188，414 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Royal Canadian Mounted Pollice． | 8，127 | 35，494，060 | － | － | － | － | 8，127 | 35，494，060 | － | － |
| Secretary of State． | 745 | 3，773，352 | － | － | － | － | 745 | 3，773，352 |  | － |
| General Services． | 431 | 2，212，253 | － | － | － | － | 431 | 2，212，253 | － | － |
| Patent and Copyright Office． | 314 | 1，561，099 | － | － | － | － | 314 | 1，561，099 | － | － |
| Trade and Commerce． | 3，676 | 17，647，461 | － | 178 | － | － | 3，676 | 17，647，639 | 115 | 298，848 |
| Departmental Administration． | 495 | 2，509，748 |  | － |  |  | 495 | 2，509，748 |  |  |
| Trade Commissioner Service． | 560 | 2，491，714 | － |  | － |  | 560 | 2，491，714 |  | － 272 |
| Exhibitions Branch | 42 407 |  | 二 | 二 | 二 | 二 | 42 407 | 211，986 | － 55 | 227，372 |
| Standards Branch．．．．．．． | 407 2,112 | $2,058,818$ $10,012,568$ | 二 | 178 | 二 | 二 | 407 2,112 | $2,058,818$ $10,012,746$ | 60 | $\overline{71,476}$ |
| National Energy Board． | 60 | 362，627 | － | － | － | － | 60 | 362，627 | － |  |
| Transport． | 10，911 | 51，008，877 | 848 | 2，849，942 | 1，739 | 6，701，410 | 13，498 | 60，560，229 | 1，124 | 4，039，330 |
| Departmental Administration． | 573 | 2，574，241 | － |  | － | － | 573 | 2，574，241 |  |  |
| Marine Services－ <br> Marine Services Administration，including Agen－ cies． | 230 | 1，031，276 |  |  | － |  | 230 | 1，031，276 |  |  |
| Aids to Navigation．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | 935 | 2，634，366 | 219 | 257，828 | 42 | 59，755 | 1，196 | 2，951，949 | 164 | 127，741 |
| Canals． | 294 | 1，128，030 | 113 | 420，384 | 18 | 65， 303 | 425 | 1，613，717 | 136 | 327，326 |
| St．Lawrence and Saguenay Rivers Ship Channels | 27 | 158，008 | － | － | 122 | 440，160 | 149 | 598， 168 | 23 | 83，793 |
| Canadian Marine Service．．．．．．．．．．．．．．．．．．．．．．．． | 55 | 339，552 | － | 506，695 | 1，557 | 6，136，192 | 1，612 | 6，982，439 | 191 | 1，132，987 |
| Marine Regulations． | 343 | 1，702，691 | － | － |  |  | 343 | 1，702，691 | － |  |
| Railway and Steamship Services | 8 | 32，160 | － | － | － | － | 8 | 32，160 | － | － |
| Air Services－ Air Services Administration． | 429 | 1，686，371 | － | － | － | － | 429 | 1，686， 371 | － | － |
| Construction Services Administration | 534 | 3，070，512 | 6 | 7，586 | － | － | 540 | 3，078，098 | 58 | 173，691 |
| Civil Aviation Branch | 2，881 | 13，820，133 | 466 | 1，481，612 | － | － | 3，347 | 15，301， 745 | 488 | 1，813，505 |
| Telecommunications and Electronics Bran | 2，593 | 12，127，427 | 19 | 67，351 | － |  | 2，612 | 12，194，778 | 55 | 329，982 |
| Meteorological Branch． | 1，741 | 9，093，951 | 25 | 108，486 | － | － | 1，766 | 9，202，437 | 9 | 50，305 |
| Air Transport Board． | 84 | 444，885 | － | － | － | － | 84 | 444，885 | － | － |
| Board of Transport Commissioners for Canada | 161 | 1，046，739 | － | － | － | － | 161 | 1，046，739 |  |  |
| Canadian Maritime Commission．． | 23 | 118，535 | － | － | － | － | 23 | 118，535 | － | － |
| Veterans Affairs | 11，469 | 45，808，746 | 1，967 | 4，499，308 | － | － | 13，436 | 50，308，054 | － | － |
| Departmental Administration | 523 | 2，101，197 |  | 9，282 | － | － | 526 | 2，110，479 | － | － |
| District Services． | 618 | 2，441，037 | 121 | 427，407 | － | － | 739 | 2，868，444 | － |  |
| Veterans Welfare Services | 736 | 3，363，963 |  |  |  |  | 736 | 3，363，963 |  |  |
| Treatment Services． | 8，168 | 30，766，970 | 1，843 | 4，062，619 | － | － | 10，011 | 34，829，589 | － |  |
| Prosthetic Services． | 217 | 939，060 | － | － | － | － | 217 | 939，060 | － |  |
| Veterans＇Bureau． | 129 | 633，313 | － | － |  |  | 129 | 633，313 | － |  |
| War Veterans Allowance Board | 24 | 137，382 | － | － | － | － | 24 | 137，382 | － | － |
| Canadian Pension Commission． | 350 | 1，953，058 | － | － | － | － | 350 | 1，953，058 |  |  |
| Soldier Settlement and Veterans＇Land Act． | 704 | 3，472，766 | － | － | － | － | 704 | 3，472，766 |  |  |
| Grand To | 164，343 ${ }^{5}$ | 702，106，105 ${ }^{5}$ | 23，759 | 80，131，499 | 2，899 | 11，810，372 | 191，001 | 794，047，976 | 14，552 | 43，364，295 |

${ }^{1}$ Includes North Atlantic Treaty Organization and Canada＇s civilian participation as a member of the International Commission for Supervision and Control in Indo－ China．${ }^{2}$ Excludes field parties－prevailing rate employees with earnings of $\$ 633,857$ ；and ships＇officers and crews with earnings of $\$ 851,489$ ．${ }^{8}$ Excludes 14,155 employees paid from postal revenues，earning $\$ 24,676,368$ ．$\quad$ Excludes Christmas helpers，earning $\$ 3,111,106$ ． Governors with earnings amounting to $\$ 139,668$ ； 334 judges，earning $\$ 4,667,144$ ；and 24 Ministers of the Crown，earning $\$ 362,658$ ．

Agency and Proprietary Corporations and Other Agencies.-The following are organizations owned by the Federal Government as at Mar. 31, 1962. Employees and earnings are shown by month in Table 7; a provincial distribution of employees and a summary of the total payroll in each of the three groups is given in Table 1, p. 130.

|  | Agency Corporations |
| :--- | :--- |
|  |  |
| Atomic Energy of Canada Limited | Defence Construction (1951) Limited |
| Canadian Arsenals Limited | National Battlefields Commission |
| Canadian Commercial Corporation | National Capital Commission |
| Canadian Patents and Development Limited* | National Harbours Board |
| Crown Assets Disposal Corporation | Northern Canada Power Commission |

Proprietary Corporations
Canadian Broadcasting Corporation Export Credits Insurance Corporation

Canadian National Railways
Canadian Overseas Telecommunication Corporation
Central Mortgage and Housing Corporation
Cornwall International Bridge Company Limited Eldorado Aviation Limited
Eldorado Mining and Refining Limited

Farm Credit Corporation
Northern Transportation Company Limited
Polymer Corporation Limited
St. Lawrence Seaway Authority
Trans-Canada Air Lines

Other Agencies
Bank of Canada
Northern Ontario Pipe Line Crown Corporation $\dagger$ Canadian Wheat Board Office of the Custodian
7.-Employees and Earnings in Agency and Proprietary Corporations and Other Agencies, by Month, Years Ended Mar. 31, 1961 and 1962

| Month | 1960-61 |  | 1961-62 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Employees | Earnings | Employees | Earnings |
|  | No. | \$'000 | No. | \$'000 |
| April. | 138,870 | 51,566 | 133,691 | 50,103 |
| May. | 142,556 | 53,758 | 137, 101 | 55,452 |
| June., | 146,039 | 54,489 | 142,139 | 63,225 |
| July. | 148,528 | 55, 836 | 146,253 | 59,705 |
| August. | 148, 879 | 56,963 | 145,914 | 58,653 |
| September | 146, 200 | 54,161 | 143, 568 | 56,131 |
| October... | 143, 104 | 53,626 | 140,501 | 56,384 |
| November. | 139,591 | 51,966 | 138,609 | 54,344 |
| December. | 135,984 | 51,582 | 134,770 | 53,428 |
| January... | 134,455 | 51,265 | 132,351 | 53,587 |
| February. | 132,820 | 48,956 | 132, 215 | 51,665 |
| March.... | 134,609 | 52,114 | 132,622 | 53,830 |

## PART V.-CANADA'S EXTERNAL RELATIONS $\ddagger$

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 an Empire to a Commonwealth. At the 1926 Conference the self-governing countries, consisting of Britain and the Dominions, were described 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

[^35]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 of each Dominion to advise the Crown in all matters relating to its own affairs". Subsequent to this important meeting, Canada's stature and status in the international community continued to grow. It exercised the powers of treaty-making and 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 can no longer be appealed to the Privy Council in London. The Supreme Court of Canada has become, therefore, the final court of appeal for all Canadian legal cases. Talks have been held between the federal Minister of Justice and the provincial Attorneys General with a view to planning a program to give Canada the sole right of amending its own Constitution-now an Act of the British Parliament, entitled "The British North America Act of 1867"-and the Government has announced that it intends to place before Parliament in due course a resolution to this end and to invite the concurrence of the provinces therein.

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 p. 107 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 1962 with respect specifically to the Commonwealth, the United Nations, and the North Atlantic Treaty Organization. International economic aid programs 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 on a detailed, monthly basis.

* Obtainable from the Queen's Printer, Ottawa, \$1 per year.


## Section 1.-Diplomatic Representation as at Jan. 31, 1963

Nore.-Changes in this listing subsequent to Jan. 31, 1963 and names of current representatives are given in Canadian Representatives Abroad and Representatives of Other Countries in Canada, published thrice yearly and obtainable from the Queen's Printer, Ottawa, price 35 cents per copy.
1.-Canadian Representation Abroad


[^36]
## 1.-Canadian Representation Abroad-continued

| Country and Year <br> Representation Established | Present Status of Representative | Address |
| :---: | :---: | :---: |
| Central African Republic...... 1962 | *Ambassador. | c/o Canadian Embassy, National Bank of Commerce and Industry Building, Yaounde, Cameroun |
| Ceylon...................... 1953 | High Commissioner | 6 Gregory's Road, Cinnamon Gardens, Colombo |
| Chad......................... 1962 | *Ambassador | c/o Canadian Embassy, National Bank of Commerce and Industry Building, Yaounde, Cameroun |
| Chile......................... 1942 | Ambassador | Agustinas 1225, 5 th floor, Santiago |
| Colombia.................... 1953 | Ambassador | Carrera 10, 16-92, 8th floor, Bog |
| Congo (Brazzaville)........... 1962 | *Ambassador | c/o Canadian Embassy, National Bank of Commerce and Industry Building, Yaounde, Cameroun |
| Congo (Leopoldville)......... 1962 | Charge d'affaires ad interim and Consul. | Building C.C.C.I., Boulevard Albert 1er, Leopoldville |
| Costa Rica................... 1961 | Ambassador | 4th floor, Edificio Banco Anglo Costarricense Avenida 2 y , Calle 3, San José |
| Cuba.......................... 1945 | Ambassador | Calle 30, No. 518, Esquina A7A, Miramar, Havana |
| Cyprus....................... 1961 | *High Commissioner | c/o Canadian Embassy, Farmer's Bldg., 8 Rehov Kaplan, Tel Aviv, Israel |
| Czechoslovakia............... 1943 | Ambassad | Mickiewiczova 6, Prague 6 |
| Dahomey.................... 1962 | *Ambassador | c/o Office of the High Commissioner for Canada, 4th floor New Barclays Bank Bldg., 40 Marina Drive, Lagos, Nigeria |
| Denmark | Ambassador | Princesse Maries Alle 2, Copenhagen |
| Dominican Republic.......... 1954 | Ambassa | Edificio Copello, 408 Calle El Conde, Santo Domingo |
| Ecuador....................... 1961 | Ambassador. | Edificio I.C.S.A., 120 Diagonal Seminario Mendr y Avenida 10 de Agosto, 3rd floor, Quito |
| El Salvador.................. 1962 | Ambassador. | c/o Canadian Embassy, Edificio Banco Anglo Costarricense, Avenida 2y, Calle 3, San José, Costa Rica |
| Finland....................... 1949 | Ambassa | Pohjois Esplanaaoikatu 25B, Helsinki |
| France........................ 1928 | Ambassador | 35 avenue Montaigne, Paris $V 1$ |
| Gabon......................... 1962 | *Ambassador | c/o Canadian Embassy, National Bank of Commerce and Industry Building, Yaounde, Cameroun |
| Germany..................... 1950 | Ambassador | Zitelmannstrasse 22, Bonn |
| Ghana.......................... 19.1973 | High Commiss | E 115/3 Independence Ave., Accra |
| Greece...................... 1943 | Ambassador <br> *Ambassador | 31, avenue Vassilissis Sofias, Athens 138 |
| Guinea........................ 1962 | *Ambassador | c/o Office of the High Commissioner for Canada, E 115/3 Independence Avenue, Accra, Ghana |
| Haiti......................... 1954 | Ambassador | Route du Canape Vert, St. Louis de Turgeau, Port-au-Prince |
| Honduras..................... 1961 | *Ambassador. | c/o Canadian Embassy, 4th floor, Edificio Banco Anglo Costarricense, Avenida 2y, Calle 3, San José, Costa Rica |
| Iceland....................... 1949 | *Ambassador. | c/o Canadian Embassy, Fridtjof Nansens Plass 5, Oslo, Norway |
| India.......................... 1947 | High Commiss | 4 Aurangzeb Road, New Delhi |
| Indonesia........................ 1953 | Ambassador.. | Djalan Budi Kemuliaan No. 6, Djakarta Bexrouke House corner of Takhte Djam- |
| Iran........................... 1958 | Ambassado | chid Avenue and Forsat Street, Tehran |
| Iraq.. ................... 1961 | *Ambassador. | c/o Canadian Embassy, Immeuble Alpha, rue Clémenceau, Beirut, Lebanon |
| Ireland........................ 1940 | Ambassad | 92 Merrion Square West, Dublin ${ }^{\text {a }}$, Aviv |
| Israel.......................... 1953 | Ambassador | Farmer's Bldg., 8 Rehov Kaplan, Tel Aviv |
| Italy.......................... 19.1962 | *Ambassador. | c/o Office of the High Commissioner for Canada, E 115/3 Independence Ave., Accra, Ghana |
| Jamaica....................... 1962 | High Commissioner | Barclay's Bank Bldg., King Street, Kingston |
| Japan......................... 1929 | Ambassador. | 16 Omote-Machi, 3-Chome, Akasaka Mi-nato-Ku, Tokyo |
| Lebanon..................................... 1945 | Ambassador. <br> *Ambassador. | Immeuble Alpha, rue Clémenceau, Beirut c/o Canadian Embassy, rue de la Science, Brussels, Belgium |

## 1.-Canadian Representation Abroad-continued

| Country and Year <br> Representation Established | Present Status of Representative | Address |
| :---: | :---: | :---: |
| Malaya......................... 1958 | High Commissioner. | Great Eastern Life Assurance Bldg., 44 Ampang Rd., Kuala Lumpur |
| Mexico........................ 1944 | Ambassad | Melchor Ocampo 463-7, Mexico 5, D |
| Morocco....................... 1962 | *Ambassado | c/o Canadian Embassy, Edificio España, Plaza de España 2, Madrid, Spain |
| Netherlands................. . 1939 | Ambassador | 5-7 Sophialaan, The Hague |
| New Zealand................. 1940 | High Commissioner | Government Life Insurance Bldg., Customhouse Quay C.I., Wellington |
| Nicaragua.................... . 1961 | *Ambassador. | c/o Canadian Embassy, 4th floor, Edificio Banco Anglo Costarricense, Avenida $2 y$, Calle 3, San José, Costa Rica |
| Niger.......................... 1962 | *Ambassador. | c/o Office of the High Commissioner for Canada, 4th floor, New Barclays Bank Bldg., 40 Marina Drive, Lagos, Nigeria |
| Nigeria........................ 1960 | High Commissioner. | 4th floor, New Barclays Bank Bldg., 40 Marina Drive, Lagos |
| Norway...................... . 1943 | Ambassador | Fridtjof Nansens Plass 5, Oslo |
| Pakistan...................... 1950 | High Commissio | Metropole Hotel, Victoria Road, Karachi |
| Panama....................... 1961 | *Ambassador. | c/o Canadian Embassy, 4th floor, Edificio Banco Anglo Costarricense, Avenida 2y, Calle 3, San José, Costa Rica |
| Paraguay...................... 1962 | *Ambassador. | c/o Canadian Embassy, Bärtolomé Mitre 478, Buenos Aires, Argentina |
| Peru........................... 1944 | Ambassador | Edificio Boza, Carabaya 831, Plaza San Martin, Lima |
| Poland........................ 1943 | Ambassador | Ulica Katowicka 31, Saska Kepa, Warsaw |
| Portugal....................... 1952 | Ambassador | Rua Marques da Fronteira No. 8, Lisbon |
| Senegal...................... 1962 | *Ambassador......... | c/o Office of the High Commissioner for Canada, 4th floor, New Barclays Bank Bldg., 40 Marina Drive, Lagos, Nigeria |
| Sierra Leone.................. 1961 | *High Commissioner. | c/o Office of the High Commissioner for Canada, 4th floor, New Barclays Bank Bldg., 40 Marina Drive, Lagos, Nigeria |
| South Africa................... 1940 | Ambassador | Suite 66, Kerry Bldg., 238 Vermeulen St. Pretoria |
| Spain........................... 1953 | Ambassador. | Edificio España, Plaza de España 2, Madrid |
| Sudan......................... 1961 | *Ambassador. | c/o Canadian Embassy, 6 Sharia Roustom Pasha, Garden City, Cairo, United Arab Republic |
| Sweden....................... 1947 | Ambassador. | Strandvagen 7-C, Stockholm |
| Switzerland.................. 1947 | Ambassador. | 88 Kirchenfeldstrasse, Berne |
| Tanganyika................... 1962 | High Commissioner | Gailey and Roberts Bldg., Independence Ave., Dar-es-Salaam |
| Thailand..................... 1961 | *Ambassador. | c/o Office of the High Commissioner for Canada, Great Eastern Life Assurance Co. Bldg., 44 Ampang Rd., Kuala Lumpur, Malaya |
| Togo.......................... 1962 | *Ambassador. | c/o Office of the High Commissioner for Canada, E 115/3 Independence Ave., Accra, Ghana |
| Trinidad and Tobago......... 1962 | High Commissioner. | 72 South Quay, Port-of-Spain, Trinidad |
| Tunisia........................ 1961 | *Ambassad | c/o Canadian Embassy, 88 Kirchenfeldstrasse, Berne, Switzerland |
| Turkey....................... . 1947 | Ambassador. | Ahmet Agaoglu Sokagi, No. 32, Cankaya, Ankara |
| Uganda....................... . 1962 | *High Commissioner. | c/o Office of the High Commissioner for Canada, Gailey and Roberts Bldg., Independence Ave., Dar-es-Salaam, Tanganyika |
| Union of Soviet Socialist Republics........................ 1943 | Ambassador. | 23 Starokonyushenny Pereulok, Moscow |
| United Arab Republic........ 1954 | Ambassado | 6 Sharia Roustom Pasha, Garden City, |
| United States of America..... 1927 | Ambassador. | 1746 Massachusetts Ave. N.W., Washington |
| Upper Volta................... 1962 | *Ambassador. | c/o Office of the High Commissioner for Canada, E 115/3 Independence Ave., Accra, Ghana |
| Uruguay...................... 1952 | Ambassador. | 1409 Avenida Agraciada, 7th floor, |
| Venezuela..................... 1952 | Ambassador | Avenida La Estancia No. 10, Ciudad |
| Yugoslavia................... . 1943 | Ambassador | Commercial Tamanaco, Caracas <br> Proliterskih Brigada 69, Belgrade |

* Dual accreditation; representative not resident in the country.


## 1.-Canadian Representation Abroad-concluded

| Country and Year <br> Representation Established | Present Status of Representative | Address |
| :---: | :---: | :---: |
| Other Missions |  |  |
| Canadian Military Mission.... 1946 | Head of Mission. . | Perthshire Block, Olympic Stadium, Head- |
| Delegation of Canada to the North Atlantic Council..... 1952 | Permanent Representative and Ambassador. | Place du Maréchal de Lattre de Tassigny, Paris XVI, France |
| Organization for Economic Cooperation and Development. 1961 | Permanent Representative..... | Place du Maréchal de Lattre de Tassigny, Paris XVI, France |
| Mission of Canada to European Communities..... 1960 | Representative and Ambassador. | 35, rue de la Science, Brussels 4 |
| Permanent Delegation of Canada to the United Nations 1948 | Permanent Representative..... | 750 Third Ave., New York, N.Y. |
| Permanent Delegation of Canada to European Office of the United Nations.......... 1948 | Permanent Representative..... | 16, Parc du Chateau Banquet, Geneva |
| Consulates |  |  |
| Brazil........................ 1947 | Consul. | Rua 7 de Abril 252, São Paulo |
| Congo (Leopoldville).......... 1960 | Chargé d'Affaires ad interim and Consul | Edifice C.C.C.I. Blvd. Albert 1er, Leopoldville |
| Germany.................... 1956 | Consul General................. | Ferdinandstrasse 69, Hamburg |
| Republic of the Philippines... 1949 | Consul General. | Third Floor, L and S Bldg., 1414 Dewey Blvd., Manila |
| United States of America..... 1948 | Consul General. | 607 Boylston St., Boston 16, Mass. ${ }^{\text {a }}$ - |
| " ..... 1947 | Consul General. | Suite 1412, Garland Bldg., 111 North Wabash Ave., Chicago, Ill. |
| ..... 1948 | Consul......................... | 1139 Penobscot Bldg., Detroit 26, Mich. |
| ..... 1953 | Consul General................. | 510 W. Sixth St., Los Angeles 14, Cal. |
| ..... 1952 | Consul General................. | Suite 1710, 225 Baronne St., New Orleans 12, La. |
| ..... 1943 | Consul General. | 680 Fifth Ave., New York, N.Y. |
| .... 1947 | Honorary Vice-Consul. | 443 Congress St., Portland, Me. ${ }^{\text {a }}$, ${ }^{\text {a }}$, Cal. |
| "، $\begin{aligned} & \text { ".... } 1948 \\ & \end{aligned}$ | Consul General................. | 1407 Mower Bldg., 7th Ave. at Olive Way, |
| "... .1961 | Consul. | Seattle 1, Wash. <br> 3 Penn Center Plaza, Philadelphia 2, Pa. |

## 2.-Representation of Other Countries in Canada

| Country and Year Representation Established | Present Status of Representative | Address |
| :---: | :---: | :---: |
| Argentina.................... 1941 | Ambassador | 211 Stewart St., Ottawa |
| Australia...................... 1940 | High Commissioner | 90 Sparks St., Ottawa |
| Austria........................ 1952 | Ambassador. | 85 Range Road, Ottawa |
| Belgium. . . . . . . . . . . . . . . . . . 1937 | Ambassador. | 168 Laurier Ave. E., Ottawa |
| Brazil......................... 1941 | Ambassador | 305 Stewart St., Ottawa |
| Britain........................ 1928 | High Commissioner | Earnscliffe, Ottawa 2300 South St |
| Burma........................ 1958 | Ambassador. | c/o Embassy of Burma, 2300 South St. N.W., Washington 8, D.C., U.S.A. |
| Cameroun.................... 1962 | Ambassador.. | c/o Embassy of Cameroun, 5420 Colorado Ave. N.W., Washington 11, D.C., U.S.A. |
| Ceylon....................... 1957 | High Commissioner | 448 Daly Ave., Ottawa |
| Chile......................... 1942 | Ambassador.. | 56 Sparks St., Ottawa |
| China.......................... 1942 | Ambassador. | 201 Wurtemburg St., Ottawa |
| Colombia. . . . . . . . . . . . . . . . . 1953 | Ambassador. | The Roxborough, Ottawa |
| Cuba.......................... 1945 | Ambassador. | 85 Range Road, Ottawa |
| Czechoslovakia............... 1942 | Ambassador. | 171 Clemow Ave., Ottawa |
| Denmark.................... 1946 | Ambassador | 446 Daly Ave., Ottawa |
| Dominican Republic.......... 1954 | Ambassador. | 85 Range Road, Ottawa |
| Ecuador....................... 1961 | Ambassador............ | Chateau Laurier Hotel, Ottawa |
| El Salvador................... 1962 | Charge d'Affaires ad inte | 54 Range Road, Ottawa 85 Range Road, Ottawa |
| Finland.................... 1948 France................... 1928 | Ambassador. | 85 Range Road, Ottawa |

2.-Representation of Other Countries in Canada-concluded

| Country and Year Representation Established | Present Status of Representative | Address |
| :---: | :---: | :---: |
| Gabon....................... . 1962 | Ambassador. | c/o Embassy of Gabon, 4900-16th St. N.W. Washington 11, D.C., U.S.A. |
| Germany...................... . 1951 | Ambassador. | 1 Waverley St., Ottawa |
| Ghana........................ 1961 | High Commissioner | 75 Albert St., Ottawa |
| Greece........................ 1942 | Ambassador. | Chateau Laurier Hotel, Ottawa |
| Guatemala.................... 1961 | Ambassador | 2220 R St. N.W., Washington 8, D.C.; U.S.A. |
| Guinea....................... . 1962 | Ambassador. | c/o Embassy of Guinea, 2112 Leroy Pl. N.W., Washington 8, D.C., U.S.A. |
| Haiti. . . . . . . . . . . . . . . . . . 1954 | Ambassador. | 150 Driveway, Ottawa |
| Iceland........................ . 1948 | Ambassado | c/o Embassy of Iceland, 1906 23rd St. N.W., Washington, D.C., U.S.A. |
| India......................... 1947 | High Commissioner. | 200 MacLaren St., Ottawa |
| Indonesia.................... 1953 | Ambassador.. | 275 MacLaren St., Ottawa |
| Iran............................. 1956 | Ambassador | 85 Range Road, Ottawa |
| Iraq........................... . 1961 | Ambassador. | 1801 P St. N.W., Washington 8, D.C., U.S.A. |
| Ireland........................ 1939 | Ambassador. | The Roxborough, Ottawa |
| Israel. . . . . . . . . . . . . . . . . . . . 1953 | Ambassador | 45 Powell Ave., Ottawa |
| Italy.......................... 1947 | Ambassador | 172 MacLaren St., Ottawa |
| Jamaica....................... . 1962 | High Commissioner | 90 Sparks St., Ottawa |
| Japan. . . . . . . . . . . . . . . . . . . 1928 | Ambassador | 75 Albert St., Ottawa |
| Lebanon. . . . . . . . . . . . . . . . . 1955 | Ambassador | The Roxborough, Ottawa |
| Luxembourg................... 1950 | Ambassador | c/o Embassy of Luxembourg, 2200 Massachusetts Ave. N.W., Washington 8, D.C., U.S.A. |
| Mexico....................... 1944 | Ambassador. | 88 Metcalfe St., Ottawa |
| Morocco....................... 1962 | Ambassador. | c/o Embassy of Morocco, 2144 Wyoming Ave. N.W., Washington 8, D.C., U.S.A. |
| Netherlands.................. 1939 | Ambassador | 12 Marlborough Ave., Ottawa |
| New Zealand.................. 1942 | High Commissione | 77 Metcalfe St., Ottawa |
| Norway...................... . 1942 | Ambassador | 140 Wellington St., Ottawa |
| Pakistan..................... 1949 | High Commissione | 505 Wilbrod St., Ottawa |
| Panama....................... . 1962 | Ambassador. | c/o Embassy of Panama, 2862 McGill Ter. N.W., Washington 8, D.C., U.S.A. |
| Peru......................... 1944 | Ambassador. | 539 Island Park Drive, Ottawa |
| Poland........................ 1942 | Ambassador | 10 Range Road, Ottawa |
| Portugal. . . . . . . . . . . . . . . . . . . 1952 | Ambassador | 285 Harmer Ave., Ottawa |
| South Africa. . . . . . . . . . . . . . . 1938 | Ambassador | 9 Rideau Gate, Ottawa |
| Spain.......................... 1953 | Ambassador | 149 Daly Ave., Ottawa |
| Sweden. . . . . . . . . . . . . . . . . . . . . 1943 | Ambassador | 140 Wellingeon St., Ottawa |
| Switzerland. . . . . . . . . . . . . . . . 1946 | Ambassador | 5 Marlborough Ave., Ottawa |
| Thailand...................... 1962 | Ambassador. | c/o Permanent Mission of Thailand to the United Nations, 20 East 82nd St., New York 28, N.Y., U.S.A. |
| Trinidad and Tobago......... 1962 | High Commissioner. | Chateau Laurier Hotel, Ottawa |
| Tunisia....................... 1957 | Ambassador. | Chateau Laurier Hotel, Ottawa |
| Turkey..................... 1944 | Ambassador. | 197 Wurtemburg St., Ottawa |
| Union of Soviet Socialist <br> Republics.................. . 1942 | Ambassador | 285 Charlotte St., Ottawa |
| United Arab Republic........ 1954 | Ambassador | The Roxborough, Ottawa |
| United States of America..... 1927 | Ambassador | 100 Wellington St., Ottawa |
| Uruguay . . . . . . . . . . . . . . . . 1948 | Charge d'Affaires ad int | The Roxborough, Ottawa |
| Venezuela.................... 1953 | Ambassador. | The Roxborough, Ottawa |
| Yugoslavia..................... 1942 | Ambassador | 12 Blackburn Ave., Ottawa |

## Section 2.-International Activities, 1962

## Subsection 1.-Canada and Commonwealth Relations

Membership in the Commonwealth is one of the cornerstones upon which Canadian foreign policy is built, for Canada supports the extension and development of a strong Commonwealth of Nations and believes that no other association throughout the world has a greater influence for good. Commonwealth membership allows Canada to enjoy an especially close, if perhaps undefinable, relationship with a group of important nations which, despite a diversity of ethnic, economic, racial, religious, cultural and political backgrounds, find usefulness in shared ideals and traditions. Exchanges taking place
between Commonwealth countries are characterized by a readiness to understand if not always to agree. Consultations and exchanges of views are the very lifeblood of the Commonwealth; these exchanges are continuous, not only in the capitals of Commonwealth countries but in other capitals, at the United Nations and at international gatherings.

In addition to these continuing consultations at many levels, two special Commonwealth meetings were held in 1962. In January, the Second Commonwealth Educational Conference was convened in New Delhi. Its purpose was to examine in retrospect the general operation of the Commonwealth Education Program inaugurated at the Oxford Conference in July 1959 and to study certain aspects relating to its extension or modification. The Prime Ministers of the Commonwealth met in London in September, the eleventh of a series of Prime Ministers' Meetings which have been held at intervals since the end of the Second World War. While the Prime Ministers held discussions on many important international questions, the central theme at their 1962 meeting was the European Common Market and the economic implications for the Commonwealth should Britain's application for membership in this association be accepted.

During 1962, membership of the Commonwealth increased from 13 to 16 members. Jamaica and the unitary state of Trinidad and Tobago became members when their independence was achieved in August, and the meeting of Commonwealth Prime Ministers agreed that Uganda should be admitted to membership after attaining independence in October. By the end of the year, Canada had High Commissioners accredited to all member countries of the Commonwealth, including the three newly admitted countries.

Canada's overseas aid for developing countries continued to be directed, in the main, to Commonwealth countries through the Colombo Plan, the Canada-West Indies Aid Program and the Special Commonwealth African Aid Program (SCAAP). Canada's total contribution under the Colombo Plan since the Plan's inception exceeds $\$ 380,000,000$; the aid to the West Indies is expected to reach some $\$ 10,000,000$ over the period 1958-63 and Canada has pledged aid to Commonwealth countries in Africa through SCAAP to a total of $\$ 10,500,000$ for the period 1960-63. In 1962, Canada also extended technical assistance to British Guiana and British Honduras amounting to $\$ 120,000$ and to the French-speaking African states in the amount of $\$ 300,000$.

Canada is also an active participant in the Commonwealth Scholarship and Fellowship Plan. At the end of 1962 there were approximately 220 Commonwealth students in Canada under this Plan and many Canadians were studying in other Commonwealth countries. Canada has also played a significant part in the training and provision of teachers for service in Commonwealth countries and has assisted in plans for co-operation in technical education. As of the end of November, 119 Canadian teachers were serving under Canadian Government educational aid programs in the less-developed countries of Southeast Asia, Africa and the Caribbean area.

Any chronicle of Commonwealth events for the year 1962 must include the visits paid to Canada in May and June by H. M. the Queen Mother, H. R. H. Prince Philip, and H. R. H. the Princess Royal. Other Commonwealth visitors during the year were President Mohammed Ayub Khan of Pakistan; the Prime Minister of Britain, the Rt. Hon. Harold Macmillan; the Lord Privy Seal, the Rt. Hon. Edward Heath; the Deputy Prime Minister of Australia, the Rt. Hon. John McEwen; the Premier of the Eastern Region of Nigeria, Dr. M. I. Okpara; the Minister of Justice and Attorney General of Nigeria, Dr. T. O. Elias; the Paramount Chief of Basutoland, H. H. Motoltlehi Moshoeshoe II; the Minister of Finance of India, Mr. Morarji Desai; the Minister of Works and Surveys of Nigeria, the Hon. I. Wada; the Minister of Communications and Works of St. Vincent, the Hon. C. L. Tannis; and the Minister of Health of Nigeria, Dr. M. A. Majekodunmi.

## Subsection 2.-Canada and the United Nations

During 1962, the United Nations contributed significantly to the maintenance of international peace and security. Through the Organization's auspices, an agreement was reached on the political future of West New Guinea which involved the establishment
of a small United Nations force, including a Canadian component, in the territory to facilitate the transition from Netherlands to Indonesian control. The ability of the United Nations to provide a seat for discussion of the Cuban crisis and the part that the Acting Secretary-General played in the negotiations enhanced the prestige of the Organization and encouraged the appointment of U Thant as Secretary-General for a five-year term.

The United Nations General Assembly met three times during the year: at resumed parts of the sixteenth session which were convened in January to discuss Angola, Cuba, the future of Ruanda-Urundi, British Guiana and Southern Rhodesia; in June to approve termination of Belgium trusteeship and Rwanda's and Burundi's accession to independence; and at the commencement of the seventeenth session on Sept. 18. At the seventeenth session, the Canadian Delegation, working with a large representative group of other delegations, helped to maintain the momentum which enabled the Assembly to complete its lengthy agenda consisting of political affairs, economic and social questions, issues of international law and administrative and budgetary matters by Dec. 20, without resort to a resumed session.

For several years, Canada has actively sought a solution to the grave problem of United Nations financing which has resulted from the refusal of certain member states to pay their assessed share of the costs of United Nations peace-keeping operations in the Congo (ONUC) and in the Middle East (UNEF). On July 20, 1962, the International Court of Justice confirmed the view of Canada and other states with its opinion that these peace-keeping costs should be treated as legal expenses of the Organization. At the seventeenth session, on the Canadian Delegation's initiative, the Assembly confirmed the Court's opinion and directed that a working group should meet early in 1963 to endeavour to find an acceptable method for financing United Nations peace-keeping activities.

Colonial issues predominated during the seventeenth session due to the influence of the African-Asian bloc of nations which was fortified by the addition of six new member states-Algeria, Burundi, Rwanda, Uganda, Jamaica and Trinidad and Tobago. During the debate on the report of the Special Committee of Seventeen on Colonialism, the Canadian Delegate, in a firmly worded speech, declared that the Assembly's Declaration on Colonialism should apply universally, including those areas where the Soviet Union dominates subject peoples.

With regard to issues on nuclear tests and disarmament, the Canadian Delegation contributed several constructive suggestions to a resolution which sought to end all nuclear tests by Jan. 1, 1963, and the Delegation participated in the adoption of a resolution on general and complete disarmament which fully reflected Canadian views. On the subject of atomic radiation, the Canadian Delegation continued to focus international attention on the hazards to health resulting from the increasing pollution of the air by radioactivity. A Canadian resolution, co-sponsored by 42 member states, which proposed that efforts to study and report on radioactivity should continue, was adopted by the Assembly. On the issue of outer space, Canada joined with the United States and other delegations in submitting a resolution which was adopted, in a modified form, by the Assembly. The main purpose of this resolution was to ensure that efforts toward promoting technical cooperation in the exploration of outer space would be continued.

At the seventeenth session, the Assembly adopted a number of resolutions on economic questions. The Canadian and Peruvian Delegations were instrumental in reconciling differences among member states regarding the timing of the United Nations Conference on Trade and Development. Canada also initiated a resolution calling on dilatory countries to contribute to the World Food Program which went into effect on Jan. 1, 1963, due to important Canadian initiatives effected at the fifteenth and sixteenth sessions.

Beginning in January 1963, Canada became a member of the United Nations Commission on Human Rights. The Canadian Delegation played an important part in the consideration of questions of human and social rights during the seventeenth session. The Delegation introduced a resolution which resulted in the renewal of the mandate of the

United Nations High Commissioner for Refugees for a period of five years. Canada also co-sponsored resolutions dealing with the United Nations Children's Fund, the Declaration of Human Rights and the Single Convention on Narcotic Drugs.

Through consultations behind the scenes during the seventeenth session, the Canadian Delegation affected important changes which enabled the Assembly to give unanimous approval to a resolution, drafted by India and co-sponsored by Canada and 18 other member states, regarding the proposal to designate a year of international co-operation.

With regard to the issues concerning international law, Canada took the lead in the debate on the important item dealing with the principles of international law concerning friendly relations and co-operation among states. The Canadian Delegation introduced a resolution calling for the affirmation of the rule of law and designating the United Nations Charter as the fundamental statement of principles underlying friendly relations. A compromise resolution, embodying many elements of the Canadian resolution, was adopted unanimously by the General Assembly.

Canadian Financial Contributions to the United Nations.-Canada's assessed share of the costs of United Nations peace-keeping operations in the Congo and the Middle East amounted to approximately $\$ 4,341,000$ in 1962 . Canada's share of the remaining expenses of the United Nations in 1962 was 3.2 p.c. of a net budget of $\$ 68,082,690$ or some $\$ 2,181,000$. During the year, Canada contributed to other programs of the United Nations, to the Specialized Agencies, to the International Atomic Energy Agency and to the United Nations Association in Canada as follows:-

| Special Programs- | \$ |
| :---: | :---: |
| Expanded Program of Technical Assistance. | 2,150,000 |
| Special Fund. | 2,350,000 |
| United Nations High Commissioner for Refugees. | 290,000 |
| United Nations Children's Fund. | 800,000 |
| United Nations Relief and Works Agency. | 1,000,000 |
| Specialized Agencies- |  |
| Food and Agriculture Organization. | 626,000 |
| International Civil Aviation Organization. | 180,000 |
| International Labour Organization. | 394,000 |
| Inter-Governmental Maritime Consultative Organization. | 9,000 |
| United Nations Educational, Scientific and Cultural Organi | 489,000 |
| World Health Organization. | 712,000 |
| Universal Postal Union..... | 18,000 |
| World Meteorological Organization. | 15,000 |
| International Telecommunication Union. | 126,000 |
| Others- |  |
| International Atomic Energy Agency. | 219,000 |
| United Nations Association in* ${ }^{\text {P Canada }}$ | 12,000 |
| Total. | 9,390,000 |

Specialized Agencies.-Canada is a member of each of the 12 Specialized Agencies of the United Nations. These Agencies are bodies with wide international responsibilities established by intergovernmental agreement, which act in relationship with the United Nations in order to carry out the terms of the Charter. Co-ordination of the activities of the Specialized Agencies is promoted by the Administrative Committee on Co-ordination established by the Economic and Social Council. Canada is also a member of the International Atomic Energy Agency which, while not a Specialized Agency, plans its activities with them and co-operates in its work with the Administrative Committee on Co-ordination.

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 25 -member 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 Disposal, 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.

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".

Total membership in the Organization at the end of 1962 was 113 states and three associate members. 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 at the Headquarters of the Organization in Paris in November and December 1962. It approved a budget of $\$ 39,000,000$, nearly one third of which is to be devoted to the educational needs of the developing countries. The Canadian assessment rate is 2.98 p.c. (See also Sect. 5 of Part II of the Education and Research Chapter of this volume.)

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 capital is not available on reasonable terms 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. The subscribed capital is $\$ 20,485,000,000$ (U.S.). Paid-up subscriptions amount to $\$ 2,049,000,000$, of which Canada's share is $\$ 75,000,000$. The Bank's first loans were for European postwar reconstruction, but in 1948 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. By June 1962 the Bank had made 321 loans totalling over $\$ 6,500,000,000$ to finance about 700 projects in 60 countries or territories. Some $\$ 4,800,000,000$ of this had been disbursed, of which amount $\$ 1,874,000,000$ had been repaid to the Bank or sold to other investors.

International Civil Aviation Organization.-The International Civil Aviation Organization (ICAO), with headquarters in Montreal, is the only Specialized Agency of the United Nations with headquarters in Canada. Canada is a member of the 27-nation Council which meets in almost continuous session in Montreal, and was represented at the fourteenth session of the Assembly held in Rome in August and September 1962.

International Development Association.-The IDA, a new affiliate of the IBRD, was established in September 1960 to meet the situation of a growing number of lessdeveloped 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. As of June 30, 1962, paid-up subscriptions amounted to $\$ 917,000,000$, of which Canada's share was $\$ 37,800,000$ (U.S.). IDA began operations in November 1960 and extended its first development credit in May 1961. By the end of June 1962, it had extended a total of 22 development credits amounting to $\$ 235,000,000$ to 11 countries in Africa, Asia, the Middle East and the Western Hemisphere.

The 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. Canada has subscribed $\$ 3,520,000$ to the capital of the Corporation.

International Labour Organization.-The International Labour Organization (ILO) was originally associated with the League of Nations and became a Specialized Agency of the United Nations in 1946. It brings together representatives of governments, employers and workers from member states in an attempt to promote social justice by improving working and living conditions in all parts of the world. To further this goal, meetings are held usually on an annual basis, the latest of which took place in Geneva in June of 1962. ILO is responsible for the execution of a number of training projects which are financed by the United Nations Special Fund.

Inter-Governmental Maritime Consultative Organization.-Canada, as a member of the Inter-Governmental Maritime Consultative Organization (IMCO) with headquarters in London, England, was represented at the sixth and seventh sessions of the Council held in London during 1962 and at an important Conference for the Prevention of the Pollution of the Sea by Oil held in London under IMCO auspices during March and April of that year.

International Monetary Fund.-The International Monetary Fund, set up 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. Included in these purposes are 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 resources of the Fund, which now amounts to some $\$ 15,200,000,000$. Canada has been represented on the Fund's Board of Executive Directors since 1945.

International Telecommunication Union.-Canada is a member of the International Telecommunication Union (ITU), a Specialized Agency of the United Nations, which traces its origin to the International Telegraph Convention of 1865 and the International Radio Telegraph Convention of 1906. The Administrative Council of the ITU met in Geneva in the spring of 1962; Canada was represented at that meeting and at meetings of subsidiary bodies which took place during the year.

Universal Postal Union.-One of the oldest and largest of the Specialized Agencies, the Universal Postal Union (UPU), 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 meets every five years to review the Universal Postal Convention and its subsidiary instruments. In the interim, activities of the Union are carried on by an Executive and Liaison Committee, a Consultative Committee on Postal Studies and an International Bureau. At the Congress held in Ottawa in 1958, Canada was elected to the Executive and Liaison Committee. The fifteenth Congress was held in New Delhi in 1962.

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 United Nations, having a membership of 108. Functioning through the World Health Assembly (an organization composed of an Executive Board, a Secretariat and six Regional Committees), WHO acts as a directing 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 fourteenth World Health Assembly was held in Geneva in MayJune 1962. (See also the item "International Health" in Subsection 5, Section 1, Part I of the Public Health, Welfare and Social Security Chapter of this volume.)

World Meteorological Organization.-Canada is a member of the World Meteorological Organization (WMO), a Specialized Agency of the United Nations since 1951 but developed from the International Meteorological Organization, which was founded in 1878. The Director of Meteorological Services, Department of Transport, an elected member of the Executive Committee of WMO, attended the fourteenth session of the Executive Committee held in Geneva in June 1962. Canada acted as host for meetings of one of WMO's important subsidiary bodies, the Commission for Agricultural Meteorology, which held its third session in Toronto in July 1962.

The International Atomic Energy Agency.-Formed in 1957, the International Atomic Energy Agency (IAEA) is an autonomous international organization under the aegis of the United Nations. The Agency was given a mandate to seek to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world in a variety of ways.

Because Canada is considered to be one of the five members most advanced in nuclear technology, including the production of source materials, this country has served on the Board of Governors since the inception of the Agency. The latest meeting of the IAEA General Conference was held at headquarters in Vienna in September-October 1962.

The 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 individual capacities. 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, Mr. Marcel Cadieux, Deputy Under-Secretary of State for External Affairs and Legal Adviser to the Department of External Affairs of Canada, was elected to membership of this Commission. The 25 countries whose nations form, at present, the International Law Commission are: Afghanistan, Austria, Brazil, Cameroun, Canada, China, Dahomey, Ecuador, Finland, France, Britain, India, Iraq, Israel, Italy, Japan, Mexico, Nigeria, Poland, 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*

There were two Ministerial Meetings during 1962 and meetings of the Permanent Representatives of the North Atlantic Council were held continuously throughout the year. Mr. George Ignatieff succeeded Mr. Jules Léger as Permanent Representative, Canada, in July.

The annual spring meeting of Foreign Ministers of the NATO Alliance was held at Athens, Greece, in May and was attended also by Defence Ministers who met separately on May 3. The Ministers discussed the most recent developments in the Berlin situation

[^37]and reaffirmed that general and complete disarmament under effective international control remained the best means of ensuring lasting peace and security. They noted with satisfaction the position taken by the Western powers at the Geneva Disarmament Conference in order to achieve this goal. The Council noted the progress toward closer co-operation in defence policy and welcomed confirmation by the United States that it will continue to make available the nuclear weapons necessary for NATO defence, concerting with its allies on basic plans and arrangements with regard to these weapons. In addition, both the British and United States Governments gave firm assurances that their strategic forces would continue to provide defence against threats to the Alliance beyond the capability of NATO committed forces to deal with. It was also decided to set up special procedures to enable all members of the Alliance to exchange information concerning the role of nuclear weapons in NATO defence. At their separate meeting, the Defence Ministers made a number of recommendations for improving co-operation in sharing within the Alliance the burden of research, development and production of military equipment. The Council reviewed the development of political consultation within the Alliance and noted the steady and encouraging progress made over the previous twelve months in deepening and developing the processes of consultation.

The annual Ministerial Meeting convened in Paris in December, attended by a Canadian Delegation led by the Secretary of State for External Affairs and the Minister of National Defence. In reviewing the international situation, the sound and vigorous state of the alliance was noted. The Ministers agreed that recent attempts by the Soviet Union to tilt the balance of forces against the West by secretly stationing nuclear missiles in Cuba had brought the world to the verge of war and that this peril was only avoided by the firmness and restraint of the United States supported by the alliance and other free nations. The Ministers concluded that constant vigilance of purpose and a spirit of interdependence as well as a readiness to examine any reasonable possibility of reducing international tension must continue to guide the policies of the alliance and that it was a prerequisite of any progress toward equitable settlement of international issues that NATO should maintain its defensive strength. At the same time, the Ministers reaffirmed that general and complete disarmament under effective international control continued to be a question of major concern and they expressed hope that the Soviet attitude which has so far frustrated concrete agreement on any of the key questions at issue would change.

The Ministers agreed that it was necessary to increase the effectiveness of conventional forces. They further agreed that adequate and balanced forces, both nuclear and conventional, were necessary to provide the alliance with the widest possible range of response to whatever threat might be directed against its security. They recognized that a sustained effort will be required to provide and improve these forces. The Ministers invited the Permanent Council to review procedures in order to secure a closer alignment between NATO military requirements and national force plans as well as an equitable sharing of the common defence burden. At the invitation of the Canadian Government it was agreed to hold the next Ministerial Meeting in Ottawa in May 1963.

Permanent representatives of the member countries met between Ministerial Meetings to consider the international, political, economic and military developments of concern to the alliance, review the defence plans of members, deal with expenditures on commonly financed military installations (infrastructure), and study the measures required to provide peacetime readiness and civil defence. Military exercises were held to prove the readiness of the army, naval and air forces assigned to NATO commands.

Canadian Contributions to NATO.-Support for NATO during 1962 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. 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 throughout 1962. This program, while decreasing in magnitude with the changing conditions and the increasing ability of the European members to meet their individual defence requirements, continues to play a vital role in strengthening NATO forces.

## 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 held at Colombo, Ceylon, Jan. 9-14, 1950. Although the Colombo Plan was initiated by Commonwealth governments, it is not exclusively a Commonwealth program. It is designed to assist in the economic development and raising of living standards of all countries and territories in the general area of South and Southeast Asia. Its membership now includes Australia, Bhutan, Burma, Cambodia, Canada, Ceylon, India, Indonesia, Japan, Laos, Malaya, Nepal, New Zealand, North Borneo, Pakistan, the Philippines, Sarawak, Singapore, South Korea, Thailand, Britain and Viet Nam, as well as the United States, which is also engaged in a substantial program of economic aid in the same region. South Korea and Bhutan were admitted to membership in 1962.

The Colombo Plan is supervised by a Consultative Committee composed of Ministers of the member countries, who meet once a year to review projects, exchange views on policy matters and prepare an annual report. It is, as its name implies, a consultative body; no collective policy decisions binding member countries are taken at its meetings. A Council for Technical Co-operation, on which Canada is represented, meets regularly in Ceylon to develop the technical co-operation program of the Colombo Plan. Colombo Plan Day was celebrated throughout member countries on July 1, 1961 to commemorate the tenth year of Colombo Plan operations.

From the inception of the Plan in 1950 through April 1962, Canada made available a total of $\$ 381,670,000$ for capital and technical assistance projects in South and Southeast Asia. Parliament appropriated $\$ 50,000,000$ for Canadian participation in the Colombo Plan in 1961-62.

While ten countries are now receiving capital assistance from Canada, the largest contributions have so far been made to India, Pakistan and Ceylon. The Canadian contribution has consisted primarily of direct assistance to various development projects, including equipment for multi-purpose irrigation and hydro-electric projects, powergenerating plants, construction and fisheries projects and resources surveys, 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, flour and butter, from the local 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 October 1962 more than 2,000 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. Nearly 250 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 in the installation and operation of capital equipment.

The Consultative Committee of the Colombo Plan held annual meetings at Singapore in 1955, at Wellington in 1956, at Saigon in 1957, at Seattle in 1958, at Jogjakarta in 1959, at Tokyo in 1960, at Kuala Lumpur in 1961 and at Melbourne in 1962. At the

Jogjakarta meeting it was agreed that the Colombo Plan should be extended for another five years from June 1961. 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.

Canada-West Indies Aid Program.-On the formation of the Federation of the West Indies in 1958, Canada undertook a $\$ 10,000,000$ program of economic and technical assistance over the period from 1958-63. The first major project in this program was the provision of two passenger-cargo ships for inter-island transportation at a cost of approximately $\$ 6,000,000$. The vessels were commissioned in the summer of 1961 and handed over to the West Indies Government. Tools and equipment valued at $\$ 28,000$ have been supplied to a technical school at St. Kitts, a dock costing approximately $\$ 1,000,000$ is under construction at St. Vincent, port equipment valued at $\$ 435,000$ is being supplied to various islands, a residence for students is being constructed at the University College of the West Indies in Trinidad, and schools, warehouses and water systems are under construction on several of the smaller islands.

Up to Oct. 31, 1962, training programs had been arranged for 43 individuals from the West Indies in different fields, including public administration, information services, fisheries, etc. The 33 Canadian experts who undertook assignments during this period went to Trinidad, Jamaica, St. Lucia, St. Vincent and St. Kitts. They included teachers, soil surveyors and advisers in statistics, legal drafting, housing, films, radio broadcasting, postal services and harbour management.

Commonwealth Technical Assistance Program.-At the Commonwealth Trade and Economic Conference held in Montreal in September 1958, Canada announced a decision to provide funds for technical assistance to Commonwealth countries outside the Colombo Plan area, with particular emphasis on the African territories. By the end of March 1962, Canada had made available $\$ 1,250,000$ to this program. Ghana and Nigeria received the greatest amount of aid, although some assistance was extended also to British Guiana, British Honduras, Uganda, Hong Kong and Sierra Leone. The Commonwealth countries in Africa are now eligible for Canadian assistance under a new Special Commonwealth African Aid Program described below.

By Oct. 31, 1962, 59 training programs had been arranged since the inception of the plan, the chief fields being agriculture, co-operatives, mining, geology, engineering, public and business administration, health and social welfare. Twenty-five Canadians had undertaken advisory assignments in Ghana, Nigeria, Uganda, British Guiana and British Honduras in education, public information, public administration, law and agriculture.

Special Commonwealth African Aid Program.-At a meeting of the Commonwealth Economic Consultative Committee in London in September 1960, it was agreed that a program of economic and technical assistance for Commonwealth countries and territories in Africa should be launched. Canada undertook to provide a contribution of $\$ 10,500,000$ to this program over a period of three years beginning with the year ended Mar. 31, 1962.

By Oct. 31, 1962, training programs had been arranged in Canada for 103 Africans under this plan and 106 Canadian teachers and other advisers had been sent to Commonwealth countries in Africa, including Gambia, Ghana, Kenya, Mauritius, Nigeria, Sierra Leone, Tanganyika and Uganda. In addition, an aerial survey and mapping project had been undertaken in Nigeria at a cost of $\$ 1,350,000$.

Educational Assistance to French-Speaking States in Africa.-In April 1961, the Canadian Government announced that it proposed to offer assistance in the educational field to French-speaking states in Africa, and Parliament subsequently appropriated $\$ 300,000$ for this purpose for the year ended Mar. 31, 1962. By the end of 1962, some

13 French-speaking Canadian teachers had been sent to Africa under this program, a supply of paper had been provided for a textbook production centre in Cameroun and other projects were under way.

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 Program of Technical Assistance, Canada also assists by arranging 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 Oct. 31, 1962, approximately 2,000 individuals had come to Canada through the various agencies from more than 100 different 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 underdeveloped countries.

Organization.-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 an officer known as the Director General of External Aid Programs. The Director General is directly responsible to the Secretary of State for External Affairs for all matters connected with Canadian external assistance programs, including the Colombo Plan, the Canada-West Indies Aid Program, the Special Commonwealth African Aid Program, the Commonwealth Technical Assistance Program, the Commonwealth Scholarship and Fellowship Plan and the Program for French-Speaking African States as well as for operational liaison with aid programs administered by the United Nations and other international agencies.

## CHAPTER III.-POPULATION

## CONSPEGTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing $p .1$ of this volume.

## Section 1.-Census of Population

This Section presents only a limited summary of the voluminous data on population recorded by the 1961 Census of Canada, with certain comparable data from earlier censuses. More detailed information is 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 and Public Relations Division of the Dominion Bureau of Statistics.

Additional 1961 Census data on population may be found in the respective subjectmatter chapters of this volume: on immigration and citizenship in Chapter IV; on schooling in Chapter VII; and on the labour force in Chapter XVI. Summary information on housing is given in Chapter XV. (See Index.)

## Subsection 1.-Growth and Movement of Population*

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 amounted to an estimated $1,000,000$. 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 ,

[^38]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.c. 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. While 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. While 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.

## 1.-Numerical Distribution of Population by Province, and Percentage Change from Preceding Census, Decennial Census Years 1901-61

Noтe.-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 | 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 |  |  |  |  |  |  |
| Nfld.. | 1 | 1 | ${ }^{1}$ | ${ }^{1}$ | 1 | 1 | 26.7 |
| P.E.I. | -5.3 | -9.2 | -5.5 | -0.7 | 8.0 | 3.6 | 6.3 |
| N.S. | 2.0 | 7.1 | 6.4 | -2.1 | 12.7 | 11.2 | 14.7 |
| N.B. | 3.1 | 6.3 | 10.2 | 5.2 | 12.0 | 12.7 | 15.9 |
| Que. | 10.8 | 21.6 | 17.7 | 21.8 | 15.9 | 21.7 | 29.7 |
|  | 3.2 | 15.8 | 16.1 | 17.0 | 10.4 | 21.4 | 35.6 |
| Man. | 67.3 | 80.8 | 32.2 | 14.8 | 4.2 | 6.4 | 18.7 |
| Sask. | - | 439.5 | 53.8 | 21.7 | -2.8 | -7.2 | 11.2 |
| Alta |  | 412.6 | 57.2 | 24.3 | 8.8 | 18.0 | 41.8 |
| B.C. | 82.0 | 119.7 | 33.7 | 32.3 | 17.8 | 42.5 | 39.8 |
| Y.T. |  | $-68.7$ | -51.2 | 1.8 | 16.2 | 85.1 | 60.8 |
| N.W.T | -79.7 | -67.7 | 25.1 | 14.4 | 29.1 | 33.1 | 43.7 |
| Canada | 11.1 | 34.2 | 21.9 | 18.1 | 10.9 | 21.8 | 30.2 |

[^39]2.-Factors in the Growth of Population, 1951-61

| Province or Territory | Population 1951 Census | Births | Deaths | Natural Increase | Immigration | Actual Increase | Net Migration | Population 1961 Census |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. | No. | No. |
| Nfld. | 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 | 104,629 |
| N.S. | 642,584 | 187,571 | 59,278 | 128,293 | 19,148 | 94,423 | $-33,870$ | 737,007 |
| N.B. | 515,697 | 165,299 | 45,838 | 119,461 | 9,718 | 82,239 | -37,222 | 597,936 |
| Que. | 4,055,681 | 1,348,440 | 350, 140 | 998,300 | 325, 329 | 1,203,530 | 205,230 | 5,259,211 |
|  | 4,597,542 | 1,426,211 | 472,718 | 953,493 | 817,292 | 1,638,550 | 685,057 | 6,236,092 |
| Man. | 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 |
| B.C. | 1,165,210 | 355,736 | 131,945 | 223,791 | 155,052 | 463,872 | 240,081 | 1,629,082 |
| Y.T. and N.W.T | 25,100 | 12,889 | 3,855 | 9,034 | 1,084 | 12,526 | 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 Increase |  |  | Population Increase according to Census |  |  | Net Migration |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1941-51 | 1951-56 | 1956-61 | 1941-51 | 1951-56 | 1956-61 | 1941-51 | 1951-56 | 1956-61 |
| Nfld. |  | 51,851 | 59,145 |  | 53,658 | 42,779 |  | +1,807 | -16,366 |
| P.E.I. | 15,802 | 8,959 | 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 | 76,006 | 46,797 | 73,499 | 71,646 | -60,713 | -185 | -4,360 |
| Sask | 135, 106 | 86,030 | 86,294 | -64,264 | 48,937 | 44,516 | -199,370 | $-37,093$ | -41,778 |
| Alta. | 150,303 | 120,961 | 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 |
| Canada ${ }^{\text {a }}$ | 1,972,394 | 1,473,211 | 1,674,987 | 2,141,358 | 2,071,362 | 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. While 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 1950's. 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. The density of each county and census division is given in DBS Census Report 1.1-11 (Catalogue No. $92-540$ ) and the density in each of the five largest metropolitan areas is shown on the insert facing p. 162.
4.-Land Area and Density of Population, by Province, Census Years 1951, 1956 and 1961

| Province or Territory | Land Area | Population 1951 |  | Population 1956 |  | Population 1961 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Total | Per Sq. Mile | Total | Per Sq. Mile | Total |  |
|  | sq. miles | No. | No. | No. | No. | No. | No. |
| Newfoundland (incl. Labrador)..... | 143,045 | 361,416 | 2.53 | 415,074 | 2.90 | 457,853 | 3.20 |
| Prince Edward Island............... | 2,184 | 98,429 | 45.07 | 99,285 | 45.46 | 104,629 | 47.91 |
| Nova Scotia....................... | 20,402 | 642,584 | 31.50 | 694,717 | 34.05 | 737,007 | 36.12 |
| New Brunswick..................... | 27,835 | 515,697 | 18.53 | 554,616 | 19.93 | 597, 936 | 21.48 |
| Quebec. | 523,860 | 4,055,681 | 7.74 | 4,628,378 | 8.84 | 5,259,211 | 10.04 |
| Ontario. | 344,092 | 4,597,542 | 13.36 | 5,404,933 | 15.71 | 6,236,092 | 18.12 |
| Manitoba | 211,775 | 776,541 | 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 |
| Alberta. | 248,800 | 939,501 | 3.78 | 1,123,116 | 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 (Exclusive of the Territories) | 2,101,454 | 13,984,329 | 6.65 | 16,049,288 | 7.64 | 18,200,621 | 8.66 |
| Yukon Territory | 205,346 | 9,096 | 0.04 | 12,190 | 0.06 | 14,628 | 0.07 |
| Northwest Territories | 1,253,438 | 16,004 | 0.01 | 19,313 | 0.02 | 22,998 | 0.02 |
| Canada | 3,560,238 | 14,009,429 | 3.93 | 16,080,791 | 4.52 | 18,238,247 | 5.12 |

## 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 by Farm and Non-farm, and Urban Population classified by Size Group, by Province, Census 1961

| Province or Territory | Rural |  |  | Urban |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Farm ${ }^{1}$ | 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 | - | 232,020 |
| Prince Edward Island..... | 34,514 | 36,206 | 70,720 | 15,591 | 18,318 | 8,102 |  | 33,909 |
| Nova Scotia............... | 56,832 | 279,663 | 336,495 | 75,163 | 49,065 | - | 276,284 | 400,512 |
| New Brunswic | 62,265 | 257,658 | 319,923 | 80,287 | 61,815 | 135,911 |  | 278,013 |
| Quebec. | 564,826 | 787, 981 | 1,352,807 | 606,355 | 277,549 | 384,628 | 2,637,872 | 3,906,404 |
| Ontario. | 505,699 | 906,864 | 1,412,563 | 631,870 | 297, 834 | 934,870 | 2,958,955 | 4,823,529 |
| Manitobs. | 171,472 | 161,407 | 332,879 | 71,995 | 51,100 |  | 465,712 | 588,807 |
| Saskatchewan. | 304,672 | 222,418 | 527,090 | 109,076 | 48,142 | 128,732 | 112,141 | 398,091 |
| Alberta. | 285,823 | 202,910 | 488,733 | 158,319 | 44,096 | 35,454 | 605,342 | 843,211 |
| British Columbis | 77,540 | 369,617 | 447,157 | 161,256 | 152,978 | - | 867,691 | 1,181,925 |
| Yukon Territory... | 47 | 9,550 | 19,597 | 5,031 | - |  |  | 5,031 |
| Northwest Territories. | 18 | 14,042 | 14,060 | 8,938 | - | - | - | 8,938 |
| Canada | 2,072,785 | 3,465,072 | 5,537,857 | 2,022,495 | 1,049,111 | 1,704,787 | 7,923,997 | 12,700,390 |

${ }^{1}$ Excludes 55,615 persons living on farms in localities classed as urban.

## Subsection 4.-Populations of Incorporated Urban Centres and Metropolitan Areas

The population of all incorporated urban centres 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 urban 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.-Population of Incorporated Urban Centres, classified by Size Group, Census Years 1951, 1956 and 1961

| Size Group | 1951 |  |  | 1956 |  |  | 1961 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Urban Centres | Population | P.C. of Total Population | Urban Centres | Population | P.C. of Total Population | Urban Centres | Population | P.C. of Total Population |
| Over 500,000.. | No. 2 | $\begin{gathered} \text { No. } \\ 1,697,274 \end{gathered}$ | 12.1 | No. 2 | $\begin{gathered} \text { No. } \\ 1,777,145 \end{gathered}$ | 11.1 | No. | $\begin{gathered} \text { No. } \\ 1,863,469 \end{gathered}$ | 10.2 |
| Between- <br> 400,000 and 500,000 .. <br> 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 | 720,077 | 5.1 | 117 | 830,289 | 5.2 | 132 | 932,936 | 5.1 |
| 3,000 and $5,000 . \cdot$ | 119 | 457,492 | 3.3 | 130 | 497, 818 | 3.1 | 151 465 | 579,201 793,465 | 3.2 4.4 |
| 1,000 and 3,000.. | 409 | 698,092 | 5.0 | 450 | 772,013 | 4.8 | 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 | 7,941,222 | 56.7 | 1,873 | 9,286,126 | 57.7 | 1,961 | 11,068,848 | 60.7 |

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 1961 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. | 1854 | 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, Nfld. | 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 | 54,941 |
| Windsor, Ont. | 1892 | 120,049 | 121,980 | 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 <br> (Areas as of 1961)

| Census Metropolitan Area | 1951 | 1956 | 1961 | $\underset{\substack{\text { Increase } \\ \text { 1951-61 }}}{\text { P.C. }}$ |
| :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. |  |
| Calgary, Alta. | 142,315 | 201,022 | 279,062 | 96.1 |
| Edmonton, Alt | 176,782 | 254,800 | 337, 568 | 91.0 |
| Halifax, N.S. | 133,931 | 164,200 | 183,946 | 37.3 |
| Hamilton, Ont. | 280,293 | 338,294 | 395, 189 | 41.0 |
| Kitchener, Ont. | 107,474 | 128,722 | 154,864 | 4.1 |
| London, Ont. | 128,977 | 154,453 | 181,283 | ${ }_{43}^{40.6}$ |
| Montreal, Que. | 1,471,851 | 1,745,001 | 2,109,509 | 43.3 46.9 |
| Ottawa, Ont. | 292,476 | 345,460 | 429,750 357,568 | 46.9 29.4 |
| Quebec, Que.... | 276,242 78 | 311,604 86,015 | 357,563 | 29.0 |
| Saint John, N.B. | 78,337 68,620 | 86,015 79,153 | 95,563 90,838 | 22.0 32.4 |
| Sudbury, Ont.. | 73,826 | 97,945 | 110,694 | 49.9 |
| Toronto, Ont. | 1,210,353 | 1,502,253 | 1,824,481 | 50.7 |
| Vancouver, B.C | 561,960 | 665,017 | 790, 165 | 40.6 |
| Victoria, B.C. | 113,207 | 133,829 | 154,152 | 36.2 |
| Windsor, Ont. | 163,618 | 185, 865 | 193,365 | ${ }_{33.2}^{18.2}$ |
| Winnipeg, Man. | 356,813 | 412,248 | 475,989 | 33.4 |


 LAREGEST METREOPGILTAN AREAS $1951-1961$


MONTREAL


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 the two census years 1956 and 1961. Each population figure is for the boundary in effect at the time of the respective census.

## 9.-Incorporated Cities, Towns and Villages having Populations of $\mathbf{1 , 0 0 0}$ or Over in 1961, by Province, Census Years 1956 and 1961

Nork.-Population totals are based on areas as incorporated at each of these dates; a change in municipal boundary since the preceding census is indicated by an asterisk (*). Urban centres are designated in this table by the following abbreviations: $c .=$ city, $\mathrm{t} .=$ town, and $\mathrm{v} .=$ village.

| Province and Incorporated Centre | 1956 | 1961 | Province and Incorporated Centre | 1956 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. |  | No. | No. |
| Newfoundland- |  |  | Nova Scotia-concluded |  |  |
| Bay Roberts, t . | 1,306 | 1,328 | Louisburg, t........ | 1,314 | 1,417 |
| Botwood, t. |  | 3,680 | Lunenburg, t. | 2,859 | 3,056 |
| Burgeo, t... | 1,138 | 1,454 | Mahone Bay, t. | 1,109 | 1,103 |
| Burin, t. | 1,116 | 1,144 | Middleton, t. . | 1,769 | 1,921 |
| Carbonear, | 3,955 | 4,234 | Mulgrave, t . | 1,227 | 1,145 |
| Catalina, t. |  | 1,110 | New Glasgow, t. | 9,998 | 9,782 |
| Channel-Port aux Basques, t | 3,320 | 4,141 | New Waterford, t . | 10,381 | 10,592 |
| Clarenville, t................. | 1,195 | 1,541 | North Sydney, t . | 8,125 | 8,657 |
| Corner Brook, | 23,225 | 25,185 | Oxford, t.. | 1,545 | 1,471 |
| Deer Lake, t . | 3,481 | 3,998 | Parrsboro, t. | 1,849 | 1,834 |
| Fogo, t . | 1,184 | 1,152 | Pictou, t. | 4,564 | 4,534 |
| Fortune, | 1,194 | 1,360 | Port Hawkesbury, t. | 1,078 | 1,346* |
| Freshwater, | 1,048 | 1,396 | Shelburne, t....... | 2,337 | 2,408 |
| Gander, t. |  | 5,725 | Springhill, t. | 7,348 | 5,836 |
| Glovertown | 604 | 1,197* | Stellarton, | 5,445 | 5,327 |
| Grand Bank, | 2,430 | 2,703* | Stewiacke, t | 1,024 | 1,042 |
| Harbour Breton, |  | 1.076 | Sydney, c... | 32,162 | 33,617 |
| Harbour Grace, | 2,545 | 2,650 | Sydney Mines, | 8,731 | 9,122 |
| Lewisporte, t | 2,076 | 2,702 | Trenton, t . | 3,240 | 3,140 |
| Marystown, t | 1,460 | 1,691 | Truro, t. | 12,250 | 12,421 |
| Mount Pearl, t | 1,979 | 2,785 | Westville, t | 4,247 | 4,159 |
| Placentia, t. | 1,233 | 1,610 | Windsor, t | 3,651 | 3, 823 |
| St. Anthony, | 1,761 | 1,820 | Wolfville, t | 2,497 | 2,413 |
| St. John's, c | 57,078 | 63,633 | Yarmouth, t. | 8,095 | 8,636 |
| St. Lawrence, | 1,837 | 2,095 |  |  |  |
| Stephenville. | 3,762 | 6,043 |  |  |  |
| Stephenville Crossing, t. . . . . . . . |  | 2,209 | New Brunswick- |  |  |
| Wabana, t. | 7,873* | 8,026 | Bathurst, t. | 5,267 | 5,494** |
| Wesleyville, | 1,313 | 1,285 | Campbellton, c. | 8,389 |  |
| Windsor, t... | 4,520 | 5,505 | Chatham, t... Dalhousie, t. | 6,332 | $\mathbf{7 , 1 0 9}$ $\mathbf{5 , 8 5 6}$ |
|  |  |  | Dieppe, t.... | 3,876* | 4,032 |
| Prince Edward Island- |  |  | Edmundston, c | 11,997 | 12,791 |
| Charlottetown, c. | 16,707 | 18,318* | Fredericton, c. | 18,303 | 19,683 |
| Montague, t . | 1,152 | 1,126 | Grand Falls, t | 3,672 | 3,983 |
| Parkdale, v | 1,422 | 1,735 | Hartland, t . | 1,022 | 1,025 |
| St. Eleanors, |  | 1,002 | Lancaster, c . | 12,371 | 13,848 3,233 |
| Sherwood, v | 1,449 | 1,580 1,537 | Marysville, | 2,538 | 3,233 1,892 |
| Souris, t ....... | 1,449 | 1,537 8,611 | Milltown, | 36,003* | 43,892* |
| Summerside, |  |  | Newcastle, t | 4,670 | 5,236 |
|  |  |  | Oromocto, t | 661 | 12,170* |
| Nova Scotia- |  |  | St. Andrews, | 1,534 | 1,531 |
| Amberst, t...................... | 10,301 | 10,788 | St. George, t | 1,322 | 1,133 |
| Antigonish, t....................... | 3,592* | 4,344 | Saint John, | 52,491 | 55,153 |
| Berwick, t. | 1,134 | 1,282 | St. Leonard, t. |  |  |
| Bridgetown, t. | 1,041 | 1,043 | St. Stephen, | 3,481 | $1,380 *$ 3,038 |
| Bridgewater, C . | 4,445 | 4,497 1,151 | Shediac, t. | 2,849 2,173 | 3,038 2,159 |
| Canso, t...... | 1,261 21,093 | $\stackrel{1,151}{ }{ }^{46,966^{*}}$ | Shediac, t. | 1,1762 | 1,631 |
| Digby, t... | 2,145* | 2,308 | Sussex, t. | 3,403 | 3,457 |
| Dominion, t . | 2,964 | 2,099 | Woodstock, t.................... | 4,308 | 4,305 |
| Glace Bay, t | 24,416 | 24,186 |  |  |  |
| Halifax, c.. | 93,301 | 92,511 |  |  |  |
| Hantsport, t | 1,298 | 1,381 | Quebee- |  |  |
| Inverness, t. | 2,026 ${ }_{4}$ | 2,109 4 | Acton Vale, t. .................... | $\stackrel{3,547}{10,822^{*}}$ | 13,309* |
| Liverpool | 3,500 | 3,712* | Amos, t............................... | 5,145 | 6,080 |
| Lockeport, t. . | 1,207 | 1,231 | Amqui, v. | 3,247 | 3,659 |

9.-Incorporated Cities, Towns and Villages having Populations of $\mathbf{1 , 0 0 0}$ or Over in 1961, by Province, Census Years 1956 and 1961 -continued

| Province and Incorporated Centre | 1956 | 1961 | Province and Incorporated Centre | 1956 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. |  | No. | No. |
| Quebec-continued |  |  | Quebec-continued |  |  |
| Anjou, t. | 2,140 | 9,511 | Disraëli, v........ | 2,473 | 3,079 |
| Arthabaska, | 2,399* | 2,977 | Dolbeau, t. | 5,079 | 6,052 |
| Arvida, c... | 12,919 | 14,460 | Dollard des Ormeaux, t........... |  | 1,248 |
| Asbestos, | $8,969^{*}$ | 11,083* | Donnacona, t..................... | 4,147 | 4,812* |
| Auteuil, t. |  | 2,603 | Dorion, t. | 3,089* | 4,996* |
| Ayersville, v | 2,348 | 2,957 | Dorval, c | 14,055** | 18,592* |
| Aylmer, t. | 5,294 | 6,286 | Drummondville, c............... | $26,284^{*}$ | 27, ${ }^{\text {209* }}$ |
| Bagotville, t | 4,822 | 5,629 | Drummondville W., v. | 1,606 | 2,057 |
| Baie Comeau, $t$ | 4,332 | 7,956* | Duvernay, t.. |  | 10,939 |
| Baie de Shawinig | 1,137 | 1,085 | East Angus, t.... | 4,239 | 4,756 |
| Baie d'Urfé, t. | 1,838* | 3,549 | East Broughton Station, | 1,060 | 1, 136 |
| Baie St. Paul, | 4,052 | 4,674 | Fabreville, t... |  | 5, $213^{*}$ |
| Barraute, | 1,081 | 1,199 | Farnham, c. | 5,843* | 6,354 |
| Beaconsfield, | 5,496 | 10,064 | Ferme Neuve, | 1,891 | 1,971 |
| Beauceville, t | 1,459* | 1,645* | Forestville, t | 1,117 | 1,529 |
| Beauceville E | 1,740* | 1,920 | Fort Chambly, | 1,885 | 1,987 |
| Beauharnois, | 6,774 | 8,704** | Fort Coulonge, | 1,633 | 1,823 |
| Beauport, t. | 6,735* | 9,192* | Gagnon, t. |  | 1,900 |
| Beaupré, | 2,381 | ${ }_{2}^{2,587}$ | Gaspe, t... | 2,194 8,423 |  |
| Bedford | ${ }_{1}^{2,272}$ | 2,855* | Gatineau, | 8,423 9,964 | 13,022** 10,129* |
| Beebe Plain, | $\stackrel{1}{1,363}{ }^{3} 966^{*}$ | 1,363 | Giffard, c. <br> Granby, | $\begin{array}{r}9,964 \\ 27 \\ \hline 1095\end{array}$ | 10,129** $31,463^{*}$ |
| Beloeil, t. | 3, ${ }_{2}, 436{ }^{\text {a }}$ | 6,283 2,706 | Granby, c....... | 1,024 | 1,176 |
| Berthierville, | 3,504 | 3,708* | Grand'Mère, c. | 14,023 | 15,806 |
| Bic, y... | 1,142 | 1,177 | Greenfield Park, | 4,417 | 7,807* |
| Black Lake, | 3,685 | 4,180 | Grenville, v | 1,277 | 1,330 |
| Bois des Filion, | 1,648 | 2,499 | Hampstead, | 4,355 | 4,557 |
| Boucherville, | ${ }_{3,911}{ }^{\text {a }}$ | 7,403 3,344 | Hauterive, t......... | 1,214 | 5,980 |
| Bourlamaque, | 3,018 2,316 | 2,726 | Hudson, v.......... | 1,549 | 1,671 |
| Bromptonville, <br> Brossard, t.... | 2,316 | 2,726 3,778 | Hudson, Heights, | 1,289 | 1,540 |
| Brownsburg, | 3,412 | 3,617 | Hull, c......... | 49,243* | 56, 929 * |
| Buckingham, | 6,781* | 7,421* | Huntingdon, | 2,995* | 3,134 |
| Cabano, v | 2,350 | 2,695 1,077 | berville, |  |  |
| Cadillac, t... | 1,281 1,029 | 1,077 1,024 | Ile Perrot, Isle Maligne | 1,761* | 3,106 2,070 |
| Camphell's Ca | 1,029 | 1,050 | Jacques Cartier, | 33,132 | 40,807* |
| Cap Chat, | 1,954 | 2,035 | Joliette, c.... | 16,940* | 18,088 |
| Cap de la Madeleine, | 22,943 | 26,925 | Jonquière, c. | 25,550* | 28,588* |
| Causapscal, v. | 2,957 | 3,463* | Kénogami, c. | 11,309* | 11,816 |
| Chambly, t | 2,817 | 3,737* | Knowlton, $\mathbf{v}$ | 1,328 | 1,396 |
| Chambord, | 1,091 | $\frac{1}{3}, 188$ | Labelle, v.... | 1,150 | 1,224 |
| Chandler, | 3,338* | 3,406 | Lac au Saumon, |  | 2,297 |
| Chapais, t.... Charlemagne, | 2,428 | 2,363 | Lachine, c | 34,494 | 38,630* |
| Charlesbourg, | 8,202 | 14, 308* | Lachute, t. | 6,911 | 7,560 |
| Charny, v. | 3,639 | 4,189 | Lac Mégantic, | 6,864 | 7,015 |
| Château d'Eau, | 918 | 1,057 | Lacolle, v..... | 1,141 | 1,187* |
| Châteauguay, t.. | 3,265 | 7,570 | Laflèche, c. | 9,958 | 10,984* |
| Châteauguay Centre, t............ |  | 7,591 | Lafontaine, v . |  | 1,556 |
| Châteauguay Heights, t......... | 1,146 | 1,231 4 | La Guadeloupe, | 1,487 | 2,580 |
| Chibougamau, t. Chicoutimi | r $\begin{array}{r}1,262 \\ 24,878\end{array}$ | $\begin{array}{r}\text { 4,765 } \\ 31,657 \\ \\ \\ \hline\end{array}$ | L'Annonciatio | 2,783* | 1,042* |
| Chicoutimi' N | 6,446* | 11,229* | La Pérade, v | 1,282 | 1,184 |
| Chomedey, c. ${ }^{3}$. | 16,677 | 30,445 | La Petite Rivi | 1,353 | 4,707 |
| Chute aux Outardes, v.. | 923 | 1,336 | La Prairie, t. | 5,372 | 7,328* |
| Clermont, v........... | 2,628 | 3,114 | La Providence, v. | 3,826* | 4,251 |
| Coaticook, t . | 6,492 | 6,906 | LaSalle, c. | $\stackrel{18,973}{ }{ }^{155}$ | 30,904 3,944 |
| Contrecour, | 1,662 | 2,007 | La Sarre, t... | ${ }_{3,683}$ | 4,448* |
| Cookshire, t. | 1,315 5,914 | ${ }_{1}^{1}{ }^{1}, 2686^{*}$ | La Station du Coteau, v. | 3,683 | 1,032 |
| Courville, t. | 3,772 | 4,670 | La Tuque, t............ | 11,096 | 13,023 |
| Cowansville, | 5,242 | 7,050* | Laurentides, | 1,513 | 1,698* |
| Crabtree, | 1.103 | 1,313 | Lauzon, c.......... | 10,255 | 11, 233 |
| Danville, t. | 2,296 | $\stackrel{2}{2}, 562$ | Laval des Rapides, t . | 11,248 3,818 | 5,440* |
| Delson, t. | 2,814 | 1,970 | Lavaltrie, v | 917 | 1,034 |
| Deschaillons sur St. Laurent, v. | 1,266 | 1,283 | LeMoyne, t | 5,662 | 8,057* |
| Deschambault, | 1,002 | 1,056 | Lennoxrille, | 3,149 | 3,699 2,663 |
| Deschênes, v | 1,680 | 2,090 | L'Epiph |  | 2,663 |

For footnotes, see end of table, p. 169.
9.-Incorporated Cities, Towns and Villages having Populations of $\mathbf{1 , 0 0 0}$ or Over in 1961, by Province, Census Years 1956 and 1961-continued

| Province and Incorporated Centre | 1956 | 1961 | Province and Incorporated Centre | 1956 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. |  | No. | No. |
| Quebec-continued |  |  | Quebec-continued |  |  |
| Lery, t . | 1,573 | 1,957 | Rimouski E., v......... | 1,209 | 1,581 |
| Les Saules, t |  | 4,098 | Rivière des Prairies, t............ | 6,806 | 10,054* |
| Levis, c...... | 13,644 | 15,112 | Rivière du Loup, c............... | 9,964 | 10,835 |
| Liniçre, | 1,149 | 1,269 | Rivière du Moulin, v............. | 4,138 | 4,386 |
| L'Isletville, | 1,051 | 1,184 | Robertsonville, v.................. | 1,030 | 1,156 |
| L'Isle Verte, | 1,456 | 1,517 | Roberval, c. | 6,648 | 7,739* |
| Longueuil, c. | 14,332 | 24,131* | Rock Island, | 1,608 | 1,608* |
| Loretteville, | 4,957 | 6,522 | Rosemere, t..................... |  | 6,158 |
| Louiseville, | 4,392 | 4,138 | Rouyn, c. | 17,076* | 18,716 |
| Luceville, v | 1,265 | 1,419 | Roxboro, | 1,910* | 6,298* |
| Macamic, | 1,388 | 1,614 | Ste. Adèle, | 1,309 | 1,331 |
| Magog, | 12,720* | 13,139 | St. Agapitville, | 1,079 | 1,117 |
| Malartic | 6,818 | 6,998 | Ste. Agathe des Monts, t.......... | 5,173 | 5,725 |
| Maniwaki, | 5,399* | 6,349 | St. Ambroise, v........ | 1,305 | 1,576 |
| Maple Grov | 1,115 | 1,412 | St. André Aveliin | 923 | 1,066 |
| Marieville, | 3,478* | 3,809 | St. André E., v |  | 1,183 |
| Masson, | 1,656 | 1,933 | Ste. Anne de Beaupré, | 1,865 | 1,878 |
| Matane, | 8,069 | 9,190* | Ste. Anne de Bellevue, t. | 3,647 | 4,044 |
| McMasterville, | 1,738 | 2,075* | Ste. Anne de la Pocatière, v..... |  | 3,086 |
| Melocheville, | 1,422 | 1,666 | St. Anselme, | 1,086 | 1,131 |
| Mistassini, t. | 2,912 | 3,461 | St. Antoine des Laurentides, v... | 2,092 | 3,005 |
| Montebello, | 1,287 | 1,486* | St. Basile S., v.................... | 1,635* | 1,709 |
| Mont Joli, t | 6,179 | 6,178* | St. Bruno, v | 913 | 1,158 |
| Mont Laurier | 5,486 | 5,859 | St. Bruno de Montar |  | 6,760 |
| Montmagny, | 6,405 | 6,850 | St. Casimir, v. | 1,447 | 1,386 |
| Montmorency | 6,077 | 5,985 | St. Césaire, | 1,739 | 2,097 |
| Montreal, c. | 1,109,439* | 1,191,062* | St. Coeur de M | 1,282 | 1,302 |
| Montreal E. | 4,607 | 5,884 | Ste. Croix, v. | 1,241 | 1,363 |
| Montreal N., | 25,407 | 48,433 | St. Cyrille, v | 1,198 | 1,138 |
| Montreal W | 4,370* | 6,446 | St. Denis, v | 944 | 1,063 |
| Mount Royal, | 16,990* | 21,182 | Ste. Dorothée | 1,158 | 5,297* |
| Murdochville, | 1,694 | 2,951 | St. Elzear, t. | 2,589 | 4,150 |
| Napierville, v | 1,510* | 1,812 | St. Emile, v. | 1,645 | 1,806 |
| Naudville, t | 2,894* | 4,475 | St. Eustache, | 3,740* | 5, 463* |
| Nicolet, | 3,771 | 4,441* | St. Eustache sur le Lac | 5,830* | 7,274 |
| Noranda, | 10,323 | 11,477 | St. Félicien, t. | 4,152* | 5,133 |
| Normandin | 1,918 | 1,838 | Ste. Félicité | 812 | 1,057 |
| Notre Dame de Lorette | 3,464 | 3,961 | St. Félix de Valois, | 1,323 | 1,399 |
| Notre Dame d'Hébertville, | 1,542 | 1,604 | Ste. Foy, | 14,615 | 29,716* |
| Notre Dame de Portneuf, v | 1,251 | 1,380 | St. François, t. |  | 5,122* |
| Notre Dame du Lac, | 1,512 | 1,695 | St. Fulgence, v | 1,054 | 1,094 |
| Omerville, v | 907 | 1,094 | St. Gabriel de Brandon, | 3,265* | 3,425 |
| Ormstown, | 1,347 | 1,527 | Ste. Geneviève, t . | 2,041 | 2,397 |
| Orsainville, |  | 4,236 | St. Georges (Beauce Co.), t...... | 3,197 | 4,082* |
| Outremont, | 29,990 | 30,753 | St. Georges (Champlain Co.), v. | 1,454* | 1,775* |
| Papineauvil | 1,141 | 1,300 | St. Georges W., t................ | 3,643 | ${ }^{4,755}$ |
| Parent, v | 1,443 | 1,298 | St. Germain de Grantham, v.... | 919 | 1,015 |
| Pierrefonds, |  | 12,171* | St. Hilaire, v... | 2,000 | 2,911 |
| Pierreville, v | 1,589 | 1,559 | St. Honoré, v. | 891 | 1,009 |
| Pincourt, t | 1,437 | 2,685 | St. Hubert, t. |  | 14,380 |
| Plessisville | 5,829 | 6,570 | St. Hyacinthe, | 20,439* | 22,354 |
| Pointe au Pic, | 1,220 | 1,333 | St. Jacques, v | 1,979 | 2,038 |
| Pointe aux Trembles, | 11,981 | 21,926 | St. Jean, c. | 24,367* | 26,988 |
| Pointe Claire, c. | 15,208* | 22,709 | St. Jean de Boischatel, | 1,461 | 1,576 |
| Pointe Gatineau, | 6,175 | 8,854 | St. Jean Eudes, v. | 2,560 | 2,873 |
| Pont Rouge, v | 2,631 | 2,988 | St. Jérôme (Lac St. Jean Co.), v. | 1,505 | 1,962 |
| Pont Viau, c | 8,218 | 16,077* | St. Jérôme (Terrebonne Co.), c... | 20,645 | 24,546* |
| Port Alfred, | 7,968* | $9,066{ }^{*}$ | St. Joseph (Beauce Co.), v....... | 2,484 | 2,484 |
| Port Cartier, |  | 3,458 | St. Joseph (St. Hyacinthe Co.), v. | 2,708 | 3,799 |
| Préville, t | 496 | 1,001 | St. Joseph de la Rivière Bleue, v. | 1,481 | 1,540 |
| Price, v. | 3,140 | 3,094 | St. Joseph de Sorel, t. | 3,571 | 3,588 |
| Princeville, | 2,841 | 3,174 | St. Jovite, v | 1,613 | 2,692* |
| Quebec, | 170,703 | 171,979 | St. Lambert, c | 12,224 | 14,531 |
| Quebec W., | 7,945 | 8,733 | St. Laurent, c. | 38,291* | 49,805* |
| Rawdon, v | 2,049 | 2,388 | St. Léonard de Port Maurice, t... | 925 | 4,893 |
| Repentigny, |  | 9,139 | St. Marc des Carrières, v......... | 2,457 | 2,622 |
| Richelieu, | 1,398 | 1,612 | Ste. Marie, t. | 3,094 | 3,662 |
| Richmond, | 3,849 | 4,072 | St. Michel, c. | 24,706 | 55,978 |
| Rigaud, t.... | 1,784 | 17,990 17 | St. Noetl, v...................... | ${ }_{1}^{1,027 *}$ | 1,124 |
| Rimouski, t . | 14,630 | 17,739 | St. Pacôme, v |  | 1,242 |

For footnote, see end of table, p. 169.
9.-Incorporated Cities, Towns and Villages having Populations of $\mathbf{1 , 0 0 0}$ or Over in 1961, by Province, Census Years 1956 and 1961-continued

| Province and Incorporated Centre | 1956 | 1961 | Province and Incorporated Centre | 1956 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. |  | No. | No. |
| Quebec-concluded |  |  | Ontario-continued |  |  |
| St. Pascal, v...... | 1,962 | 2,144 | Almonte, t . | 2,960 | 3,267 |
| St. Pie, v... | 1,228 | 1,434 | Amherstburg, t. . . . . . . . . . . . . . | 4,099 | 4,452 |
| St. Pierre, | 5,276* | 6,795* | Arnprior, t....................... | 5,137* | 5,474 |
| St. Raphael, | 1,059 | 1,134 | Arthur, v......................... | 1,124 | 1,200 |
| St. Raymond, | 3,502 | 3,931 | Athens, $\mathbf{v}$ | 935 | 1,015 |
| St. Redempteur, | 872 | 1,035* | Aurora, t......................... | 3,957 | 8,791** |
| St. Rémi, t. | 2,303 | 2,276 | Aylmer, t | 4,201* | 4,705* |
| Ste. Rosalie, | 1,142* | 1,255 | Ayr, v. | 939 | 1,016 |
| Ste. Rose, t . | 5,378* | 7,571* | Bancroft, v | 1,669** | 2,615** |
| St. Sauveur des Monts, | 1,316* | 1,702* | Barrie, c. | 16,851* | 21,169* |
| St. Siméon, v. | 1,114 | 1,197 | Barry's Bay, | 1,366 | 1,439 |
| Ste. Thècle, | 1,499 | 2,009* | Beamsville, v | 2,198 | 2,537 |
| Ste. Thérèse, | 8,266 | 11,771* | Beaverton, v | ${ }_{1}^{1,099}$ | 1,217 |
| St. Timothée, | 688 | 1,003 | Belle River, | 1,814* | 1,854 |
| St. Tite, t. | 3,183 | 3,250 | Belleville, c. | 20,605 | 30,655** |
| St. Ulric, | 980 | 1,021 | Blenheim, t | 2,844 | 3,151* |
| St. Vincent de Paul, t | 6,784 | 11,214 | Blind River, t | $3,633^{*}$ | 4,093* |
| St. Zacharie, v....... |  | 1,361 | Bobcaygeon, | 1,242 | 1,210 |
| Sacré Coeur de Jésus, | ${ }_{2} 896$ | 1,108 | Bolton, v. | 1,093 6,544 | 7,104** |
| Sayabec, v... | 2,281 | 2,314 | Bowmanvile | 2,849 | 2,927 |
| Scheffervilue, | 1,347 | 1,038 | Bradford, t. | 2,010 | 2,342 |
| Senneterre, | 2,197 | 3,246* | Brampton, t | 12,587* | 18,467* |
| Senneville, v | 979 | 1,262 | Brantford, $\mathbf{c}$ | 51,869* | 55,201* |
| Sept Iles, c. | 5,592 | 14, 196* | Bridgeport, v | 1,402 | 1,672* |
| Shawbridge, | 680 | 1,034 | Brighton, | $\stackrel{2,182}{ }$ | $\stackrel{\text { 2,403 }}{\text { 17 }}$ |
| Shawinigan, c | 28,597* | 32,169* | Brockville, | 13,885** | 17,744** |
| Shawinigan S. | 10,947* | 12,683 | Burlington, | ${ }_{2,078}$ | 47, 2 2 |
| Sillery, c... | 13,154 | 14,109* | Cannington, v | 926 | 1,024 |
| Sorel, c. | 16,476 | 17,147 | Capreol, t. | 2,394 | 3,003* |
| Stanstead Plain | 1,134 | 1,116 | Cardinal, v | 1,994* | 1,944 |
| Sutton, v...... | 1,407 | 1,755* | Carleton Place, | 4,790* | 4,796 |
| Tadoussac, | 1,066 | 1,083 | Casselman, v | 1,241 | 1,277 |
| Temiscaming | 2,694 | 2,517 | Chalk River, | ${ }^{9886}$ | 1,135 |
| Templeton, | 2,475 | ${ }_{6}^{2,965}$ | Chatham, c. | 22,262* | 29,826** |
| Terrebonne, t... | 4,097 19,511 | - ${ }^{6,207} \times 6$ | Chesley, t. | 1,629 | 1,697 |
| Thetford Mines, | - 2,324 | 3,310 | Chesterville, | 1,169 | 1,248 |
| Tracy, t . | 6,542 | 8,171 | Chippawa, | 2,039* | 3,256 |
| Tring Jonction, | 1,083* | 1,214 | Clinton, t. | 2,896** | $3,491 *$ |
| Trois Pistoles, t | 4,039 | 4,349 | Cobalt, t. | 2,367* | 2,209 ${ }^{\text {a }}$ |
| Trois Rivières, | $50,483^{*}$ | 53,477** | Cobourg, | 9,399 3,695 | 10,646** |
| Val David, v | 1,016 | 1,118** | Cochrane, t. | 3,695 1,240 | 1,336 |
| Val d'Or, t.. | ${ }^{9,876}{ }^{1} 340^{*}$ | 10,983* | Collingrne, | 7,978 | 8,385 |
| Vallee Jonction, | 23,540** | 27, ${ }^{1,297}$ | Coniston, | 2,478 | 2,692* |
| Valley field (Sala | $\begin{array}{r}1,140 \\ \hline 1\end{array}$ | 27,290 | Conper Cliff, | $3,801 *$ | 3,600 |
| Varennes, v | 2,047 | 2,240* | Cornwall, c. | 18,158 | 43,639* |
| Verchères, | 1,412 | 1,768 | Crystal Beach, | 1,850 | 1,886 |
| Verdun, | 78,262* | 78,317 | Deep River, |  | ${ }_{3,377}$ |
| Victoriaville, | 16,031* | 18,720* | Delhi, t. | 3,002* | 3,427* |
| Ville Marie, | 1,409 | 1,710 | Deseronto, | 1,260 | 2,346 |
| Villeneuve, | 2,248 | 1,484 2,487 | Dryden, | 4,428** | 5,728* |
| Waterloo, t | 4,266 | 4,543 | Dundas, t . | 9,507** | 12,912* |
| Waterville, | 1,373 | 1,330 | Dunnville, t | 4,776* | 5,181 |
| Weedon Centre, | 1,287 | 1,426 | Durham, t . | 2,067 | 2,180 |
| Westmount, c. | 24,800 | 25,012 | Eastview, t.5 | 19,283 | 24,555 |
| Windsor, t. | 5,886* | 6,589 | Eganville, |  |  |
| Yamachiche, v. | 900 | 1,186* | Elmira, t | 2,916* | 1,486 |
|  |  |  | Englehart, t. | 1,705 | 1,786 |
| Ontario- |  |  | Erin, v... | 885 | 1,005 |
| Acton, | 3,578* | 4,144* | Espanola, t . |  | 5,353 3,428 |
| Ajax, t . | 5,683 | 7,755 | Essex, t. | 3,348 | 3,428 3,047 |
| Alexandria, | 2,487 | 2,597* | Exeter, t... | 1,137 | 1,359 |
| Alfred, v Alision, | 1,2526* | 2,884** | Fergus, t..... | 3,677 | 3,831 |

For footnotes, see end of table, p. 169.

## 9.-Incorporated Cities, Towns and Villages having Populations of $\mathbf{1 , 0 0 0}$ or Over in 1961, by Province, Census Years 1956 and 1961-continued

| Province and Incorporated Centre | 1956 | 1961 | Province and Incorporated Centre | 1956 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. |  | No. | No. |
| Ontario-continued |  |  | Ontario-continued |  |  |
| Fonthill, $\mathbf{v}$. | 1,872 | 2,324* | New Toronto, t.................. | 11,560 | 13,384 |
| Forest, t. | 2,035 | 2,188 | Niagara, | 2,740 | 2,712 |
| Forest Hill, | 19,480 | 20,489 | Niagara Falls, c. | 23,563 | 22,351 |
| Fort Erie, t....................... | 8,632 | 9,027* | North Bay, c.. | 21,020* | 23,781 |
| Fort Frances, t.................... | 9,005 | 9,481 | Norwich, v... | 1,611 | 1,703 |
| Fort William, c | 39,464 | 45,214 | Norwood, v | 1,017 | 1,060 |
| Frankford, v. | 1,491 | 1,642 | Oakville, | 9,983 | 10,366 |
| Galt, c..... | 23,738* | 27, $830 *$ | Orangeville, | 3,887 | 4,593 |
| Gananoque, | 4,981 | 5,096 | Orillia, t. | 13,857 | 15,345* |
| Georgetown, | 5,942* | 10,298 | Oshawa, c | 50,412 | 62,415 |
| Geraldton, t | 3,263 | 3,375 | Ottawa, c. | 222,129 | 268,206 |
| Glencoc, $\mathbf{v}$ | 1,044 | 1,156 | Owen Sound, | 16,976 | 17,421* |
| Goderich, t. | 5, 886* | 6,411 | Palmerston | 1,550 | 1,554 |
| Gravenhurst, | 3,014 | 3,077 | Paris, t. | 5,504* | 5,820* |
| Grimsby, t....................... | $3,80{ }^{*}$ | 5,148* | Parkhill, t | 1,043 | 1,169 |
| Guelph, c. | 33,860 * | 39, $838 *$ | Parry Sound, | 5,378 | 6,004 |
| Hagersville, | 1,964 | 2,075 | Pembroke, | 15,434 | 16,791* |
| Haileybury, | 2,654 | 2,638 | Penetanguishene, | 5,420 | 5,340 |
| Hamilton, | 239,625* | 273,991* | Perth, t.... | 5,145* | 5,360 |
| Hanover, t | 3,943 | 4,401* | Petawaw | 1 | 4,509 |
| Harriston, | 1,592 | 1,631 | Peterborough, | 42,698* | 47,185* |
| Harrow, t. | 1,851 | 1,787 | Petrolia, t . | 3,426 | 3,708 |
| Havelock, | 1,205 | 1,260 | Pickering, | 1,150 | 1,755 |
| Hawkesbury | 7,929 | 8,661 | Picton, t. | 4,998 | 4,862 |
| Hearst, t. | 2,214 | 2,373 | Point Edward, | 2,558 | 2,744 |
| Hespeler, | $3,876 *$ | 4,519* | Port Arthur, c. | 38,136 | 45,276 |
| Huntsville, | 3,051 | 3,189 | Port Colborne, | 14,028* | 14,886 |
| Ingersoll, t . | 6,811 | 6,874 | Port Credit, | 6,350 | 7,203* |
| Iroquois, | 1,078 | 1,136 | Port Dover, | 2,790* | 3,064* |
| Iroquois Falls, | 1,478 | 1,681 | Port Elgin, t. | 1,597 | 1,632 |
| Kapuskasing, | 5,463* | 6,870 | Port Hope, t | 7,522* | 8,091* |
| Keewatin, t | 1,949 | 2,197 | Port McNicoll, | 932 | 1,053 |
| Kemptville, v.6................... | 1,730 | 1,959 | Port Perry, v .. | 2,121 | 2,262 |
| Kenora, t. | 10,278 | 10,904 | Port Stanley, | 1,480 | 1,460* |
| Kincardine, | 2,667 | 2,841 | Powassan, | 935 | 1,064 |
| Kingston, c. | 48,618** | 53,526 | Prescott, t | 4,920** | 5,366 |
| Kingsville, t | 2,884* | 3,041 | Preston, t. | 9,387* | 11,577* |
| Kitchener, c | 59,562* | 74,485* | Rainy Rive | 1,354 | 1,168 |
| Lakefield, v | 1,938 | 2,167** | Renfrew, t. | 8,634 | 8,935 |
| Leamington, t..................... | 7, 856** | 9,030* | Richmond, | 894 | 1,215 |
| Leaside, t........................ | 16,538* | 18,579 | Richmond Hill, t | 6,677* | 16,446* |
| Levack, t . | 2,929* | 3,178 | Ridgetown, t. | 2,483* | 2,603* |
| Lindsay, t | 10,110 | 11,399* | Riverside, t . | 13,335 | 18,089 |
| Listowel, t . | 3,644 | 4,002 | Rockcliffe Park, | 2,097 | 2,084 |
| Little Current, t | 1,514 | 1,527 | Rockland, t. | 2,757 | 3,037 |
| Lively, t. | 2,840 | 3,211 | Rodney, $\mathbf{v}$ | 1,026 | 1,041 |
| London, c. | 101,693* | 169,569* | St. Catharines, | 39,708* | 84,472* |
| Long Branch, | 10,249* | 11,039* | St. Clair Beach | , 834 | 1,460* |
| L'Orignal, | 1,067 | 1,189 | St. Mary's, t. | 4,185 | 4,482 |
| Lucknow, | , 962 | 1,031 | St. Thomas, c | 19,129* | 22,469* |
| Madoc, | 1,325 | 1,347 | Sarnia, c..... | 43,447 | 50,976 |
| Markdale, | 986 | 1,090 | Sault Ste. Marie, | 37,329 | 43,088* |
| Markham, | 2,873* | 4,294 | Seaforth, t. | 2,128 | 2,255 |
| Marmora, | 1,428* | 1,381 | Shelburne, v | 1,245 |  |
| Massey, t . | 1,068 | 1,324 | Simcoe, t. | $8,078{ }^{*}$ | 8,754* |
| Mattawa, | 3,208 | 3,314 | Sioux Lookout, | 2,504 | 2,453 |
| Meaford, t . | 3,643* | 3,834* | Smiths Falls, t . | 8,967* | 9,603* |
| Midland, t . | 8,250 | 8,656 | Smooth Rock Falls, t | 1,104 | 1,131 |
| Milton, t. | 4,294* | 5,629* | Southampton, t. | 1,640 | 1,818 |
| Milverton, | 1,070 | 1,111 | South River, v. | 995 | 1,044 |
| Mimico, t | 13,687 | 18,212 | Stayner, t. | 1,429 | 1,671 |
| Mitchell, | 2,146 | 2,247 | Stirling, v | 1,191 | 1,315 |
| Morrisburg, | 2,131 | 1,820 | Stittsville, v |  | 1,508 |
| Mount Fores | 2,438 | 2,623 | Stoney Creek, t | 4,506* | 6,043 |
| Napanee, t. | 4,273 | 4,500 | Stouff ville, v. | 2,307* | 3,188 |
| Newcastle, v | 1,098 | 1,272 | Stratford, c. | 19,972* | 20,467* |
| New Hamburg, | 1,939* | 2,181 | Strathroy, t. | 4,240 | 5,150 |
| New Liskeard, t . | 4,619 | 4,896 | Streetsville, v | 2,648* | 5,056* |
| Newmarket, t. | 7,368 | 8,932* | Sturgeon Falls, t . | 5,874 | 6,288 |

For footnotes, see end of table, p. 169.

## 9.-Incorporated Cities, Towns and Villages having Populations of 1,000 or Over in 1961, by Province, Census Years 1956 and 1961 -continued

| Province and Incorporated Centre | 1956 | 1961 | Province and Incorporated Centre | 1956 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. |  | No. | No. |
| Ontario-concluded |  |  | Manitoba-concluded |  |  |
| Sudbury, c. | 46,482 | 80,120* | Virden, t. | 3,225 | 2,708 |
| Sutton, v... | 1,310 | 1,470* | West Kildonan, c. |  | 20,077 |
| Swansea, | 8,595 | 9,628 | Winkler, t. | 1,634 | 2,529* |
| Tavistock, | 1,155 | 1,232 | Winnipeg, | 255,093* | 265,429* |
| Tecumseh, | 4,209 | 4,476 |  |  |  |
| Thamesville, | 1,074* | 1,054 | Saskatchewan- |  |  |
| Thessalon, t . | 1,716 | 1,725 | Assiniboia, t........................ | 2,027 | 2,491* |
| Thornbury, | 1,037 | 1,097 | Battleford, t | 1,498 | 1,627 |
| Thorold, t. | 8,053 | 8,633 | Biggar, t......................... | 2,424 | ${ }^{2,702}$ |
| Tilbury, t. | 3,138 | 3,030 | Broadview, | 978 | 1, $008{ }^{*}$ |
| Tillsonburg, | 6,216 27,551 | 6,600 29,270 | Canora, t. | 1,873 1,659 | 2,117 1,729 |
| Timmins, T | 27,551 | 29,270 672,407 | Creighton, | $\begin{array}{r}1,659 \\ \hline 748\end{array}$ | ${ }_{1}^{1,729}{ }^{\text {1 }}$ |
| Trenton, | 11,492* | 13,183* | Estevan, c. | 5,264 | 7,728* |
| Tweed, | 1,634 | 1,791 | Eston, t | 1,625* | 1,695* |
| Uxbridge | 2,065 | 2,316 | Flin Flon, t . |  |  |
| Vankleek Hill, | 1,647 | 1,735 | Fort Qu'Appelle, | 1,130 | 1,521 |
| Victoria Harbo | 1,012 | 1,066 | Gravelbourg, t . | 1,434 | 1,499 |
| Walkerton, t. | 3,698* | 3,851 | Grenfell, t. | 1,080* | 1,256 |
| Wallaceburg, | 7, 892* | 7,881 | Gull Lake, | 1,052 | 1,038 |
| Waterdown, | 1,754 | 1,844 | Herbert, t... | ${ }^{958}$ | 1,008 |
| Waterford, t | 1,908 16373 | 2,221** | Hudson Bay, | 1,421 2,916 | 1,601 |
| Waterloo, c. | 16,373 1,217 | 21,366* | Humboldt, t. | 2,916 | 3,245 1,802 |
| Watiord, | 16,405 | 36,079* | Kamsack, t. | 2,843* | 2,968 |
| Wellington, | 1,077 | 1,064 | Kerrobert, t . | 1,037 | 1,220 |
| West Lorne, | 1,088 | 1,070 | Kindersley, t . | 2,572 | 2,990 |
| Weston, t . | 9,543* | 9,715 | Leader, t.. | 1,085* | 1,211 |
| Wheatley, | 1,196 | 1,362 | Lloydminster, c. (Sask. and |  |  |
| Whitby, t. | 9,995 1,954 | 14,685 2,138 | Maple Creek, t . | 1,974 | 2,291 |
| Wiarton, t | 1,938 | 1,429 | Meadow Lake, t . | 2,477 | 2,803 |
| Windsor, c. | 121,980 | 114,367* | Melfort, t. . . | 3,322 | 4,039 |
| Wingham, t | 2,766 | 2,922 | Melville, c. | 4,948 | 5,191 |
| Woodbridge, v | 1,958 | 2,315 | Moose Jaw, | 29,603* | 33,206* |
| Woodstock, c. | 18,347* | 20,486 | Moosomin, | 1,390 | 1,781 |
|  |  |  | Nipawin, | 3,337 | 3,836** |
| Manitoba- |  |  | North Battleford, | 8,924 |  |
| Altona, t.. | 1,698 | 2,026 | Outlook, O | 885 783 | 1,340* |
| Beauséjour, | 1,523 | 1,770 1,303 | Oxbow, t.... | \% 20,366 | 24,168* |
| Boissevain, | 24,796 | 28,166 | Radville, t. | 1,087 | 1,067 |
| Brooklands, | 3,941 | 4,369 | Regina, c.. | $89,755^{*}$ | 112,141* |
| Carberry, | 1,065 | 1,113 | Rosetown, | 1,268 | 1,264* |
| Carman, t. <br> Dauphin | 1,884 | 7,930 | Rosthern, S | 72,858* | 95,526* |
| East Kildonan, |  | 27,305 | Shaunavon, t | 1,959 | 2,154 |
| Flin Flon, t. (Man. and Sask.)... | 10,234 | 11,104 | Shell brook, t. | ${ }^{907}{ }^{\text {² }}$ | 1,042 |
| Gimli, t.. | 1,660 | 1,841 | Swift Current, | 10,612 2,104 | 12,186 2,402 |
| Grandview, | 1, 963 | 1,057 1,729 | Tisdale, t. | 1,607 | 1,902 |
| Melita, t. | 1,926 | 1,038 | Wadena, t. | 1,154 | 1,311 |
| Minnedosa | 2,306 | 2,211 | Watrous, t. | 1,340 | 1,461 |
| Morden, t | 2,237* | 2,793 | Weyburn, | 7,684* | 9,101 |
| Morris, t. | 1,260 | 1,370 | Wilkie, t.. | 1,630 | 1,612 |
| Neepawa, t . | 3,109 | 3,197 | Wolseley, t | 1,001 1 | 1,031 |
| Portage la Prairie, c. | 10,525 | 12,388* | Wynyard, t . | 1,522 | 9,995 |
| Rivers, t . | 1,422 | 1,574 | Yorkton, c. | 8,256 | ,995 |
| Roblin, $\mathbf{v}$ Russell | 1,173 | 1,363 | Alberta- |  |  |
| St. Boniface, | 28,851 | 37,600 | Athabasca, t. | 1,293 | 1,487 |
| St. James, c. | 26,502 | 33,977 | Barrhead, t. | 1,610* | 2,286* |
| Selkirk, t | 7,413 | 8,576 | Bellevue, v. |  | 9,041 |
| Souris, t.... | 1,759 | 1,849* | Black Diamond, t.. | ,991* | 1,043 |
| Steinbach, | 2,688 | 1,420 | Black Diamond, t | 1,973* | 1,980 |
| Swan River | 2,644 | 3,163 | Bonnyville, t. | 1,495* | 1,736 |
| The Pas, t . | 3,971 | 4,671* | Bow Island, $t$. | 1, ${ }^{1} 217$ | $1,122 *$ |
| Transcona, t | 8,312 | 14,248 ${ }^{\text {1,627 }}$ | Bowness, | 2.320* | 2,827 |

For footnotes, see end of table.
9.-Incorporated Cities, Towns and Villages having Populations of 1,000 or Over in 1961, by Province, Census Years 1956 and 1961-concluded

| Province and Incorporated Centre | 1956 | 1961 | Province and Incorporated Centre | 1956 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. |  | No. | No. |
| Alberta-concluded |  |  | British Columbia- |  |  |
| Calgary, | 181,780* | 249,641* | Alberni, c. | 3,947 | 4,616 |
| Camrose, | 5,817 | 6,939* | Armstrong, | 1,197 | 1,288 |
| Cardston, t | 2,607 | 2,801 | Burns Lake, v | 1,016 | 1,041* |
| Castor, t. | 958 | 1,025 | Campbell River, | 3,069* | 3,737 |
| Claresholm, | 2,431 | 2,143 | Castlegar, v... | 1,705 | 2,253* |
| Coaldale, t. | 2,327* | 2,592 | Chilliwack, c. | 7,297 | 8,259 |
| Cold Lake, t | 1,097 | 1,307 | Comox, v.... | 1,151* | 1,756 |
| Coleman, t | 1,566 | 1,713 | Courtenay, c. | 3,025 | 3,485 |
| Devon, t. | 1,429* | 1,418* | Cranbrook, | 4,562* | 5,549 |
| Didsbury, | 1,227 | 1,254* | Creston, v. | 1,844* | 2,460* |
| Drayton Valley, | 2,588 | 3,854* | Cumberland, | 1,039 | 1,303* |
| Drumheller, c. | 2,632* | 2,931 | Dawson Creek, | 7,531* | 10,946* |
| Edmonton, c. | 226,002* | 281,027* | Duncan, c.. | 3,247 | 3,726* |
| Edson, t. | 2,560 | 3,198 | Enderby, c. | 965 | 1,075 |
| Fairview, t | 1,260* | 1,506 | Fernie, | 2,808* | 2,661 |
| Forest Lawn, | 3,150* | 12,263* | Fort St. James, | 615 | 1,081 |
| Fort Macleod, t | 2,103 | 2,490 | Fort St. John, t. | 1,908 | 3,619* |
| Fort Saskatchewan, | 2,582* | 2,972* | Fruitvale, v | 870 | 1,032 |
| Grand Centre, t . | 1 | 1,493 | Gibson's Landing, v | 990 | 1,091 |
| Grande Prairie, | 6,302** | 8,352* | Golden, v... |  | 1,776 |
| Grimshaw, t . | 904* | 1,095* | Grand Forks, | 1,995 | 2,347 |
| Hanna, t . | 2,327 | 2,645 | Hope, v | 2,226 | 2,751 |
| High Prairie, | 1,743* | 1,756* | Kamloops, c. | 9,096* | 10,076* |
| High River, t | 2,102 | 2,276 | Kelowna, c.. | 9,181 | 13,188* |
| Hinton, t. |  | 3,529 | Kimberley, | 5,774 | 6,013* |
| Innisfail, t. | 1,883* | 2,270* | Kinnaird, v . | 1,305 | 2,123* |
| Jasper Place, t | 15,957 | 30,530 | Ladysmith, | 2,107 | 2,173 |
| Lac La Biche, | 967 | 1,314* | Lake Cowichan, | 1,949 | 2,149* |
| Lacombe, t | 2,747 | 3,029* | Langley, c. | 2,131 | 2,365 |
| Leduc, t . | 2,008* | 2,356* | Lillooet, $\mathbf{v}$. | 1,083* | 1,304* |
| Lethbridge, c | 29,462* | $35,454 *$ | Marysville, | 930 | 1,057 |
| Lloydminster, |  |  | Merritt, v.... | 1,790 | 3,039 |
| Magrath, t . | 1,382 | 1,338 | Mission City, t | 3,010 | 3,251* |
| McLennan, t. | 1,092* | 1,078* | Nanaimo, c. | 12,705* | 14,135 |
| McMurray | 1,110 | 1,186 | Nelson, c. | 7,226 | 7,074 |
| Medicine Hat, | 20,826* | 24,484* | New Westminster, c. | 31,665 | 33,654 |
| Montgomery |  | 5,077 | North Kamloops, v. | 4,398* | 6,456* |
| Nanton, t . | 1,047 | 1,054 | North Vancouver, c . | 19,951 | 23,656 |
| Okotoks, | 764 | 1,043* | Oliver, v..... | 1,147 | 1,774* |
| Olds, t . | 1,980 | 2,433 | Osoyoos, v | 860 | 1,022 |
| Peace River, | 2,034* | 2,543* | Parksville, v | 1,112* | 1,183 |
| Pincher Cr | 1,729 | 2,961* | Penticton, c.. | 11,894 | 13,859 |
| Ponoka, t . | 3,387 | 3,938 | Port Alberni, c. | 10,373 | 11,560 |
| Provost, t. | 878 | 1,022* | Port Coquitlam, c. | 4,632 | 8,111 |
| Raymond, | 2,399 | 2,362* | Port Moody, c. | 2,713 | 4,789 |
| Redcliff, t | 2,001 | 2,221 | Prince George, c. | 10,563* | 13,877* |
| Red Deer, | 12,338** | 19,612* | Prince Rupert, c. | 10,498 | 11,987 |
| Redwater, | 1,065* | 1,135 | Princton, v... | 2,245 | 2,163 |
| Rimbey, t. | 980* | 1,266 | Quesnel, t... | 4,384* | 4,673* |
| Rocky Mountain House, | 1,285 | 2,360* | Revelstoke, c | 3,469 | 3,624 |
| St. Albert, t. | 1,320 | 4,059 | Rossland, c. | 4,344 | 4,354 |
| St. Paul, t | 2,229* | 2,823 | Salmon Arm, | 1,344 | 1,506* |
| Stettler | 3,359 | 3,638* | Sidney, v. | 1,371 | 1,558* |
| Stony Plain, t | 1,098 | 1,311 | Smithers, v. | 1,962 | 2,487 |
| Sylvan Lake, | 1,114 | 1,381 | Squamish, v | 1,292* | 1,557* |
| Taber, t. | 3,688 | 3,951 | Trail, c.. | 11,395 | 11,580 |
| Three Hills, | 1,095** | 1,491 | Vancouver, c | 365, 844* | 384,522 |
| Valleyview, | 973 | 1,077 | Vanderhoof, | 1,085* | 1,460 |
| Vegreville, | 2,574 | 2,908 | Vernon, c. | 8,998 | 10,250* |
| Vermilion, | 2,196 | 2,449 | Victoria, c. | 54,584 | 54,941 |
| Viking, t. | 897* | 1,043* | Warfield, v | 2,051 | 2,212 |
| Vulcan, t. | 1,204 | 1, $310^{*}$ | White Rock |  | 6,453 |
| Wainwright, | 2,653 | 3,351 | Williams Lak | 1,790* | 2,120* |
| Westlock, t. Wetaskiwin | $1,136 *$ $4,476{ }^{*}$ | $\stackrel{1}{1,838} \mathbf{5} \mathbf{3} \mathbf{3}$ |  |  |  |
| Whitecourt, | 1 | 1,054 | Whitehorse, c. | 2,570 | 5,031 |

[^40] municipality of St. Martin (Renaud).
a city on Jan. 1, 1963.

[^41] Saskatchewan.

## 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

| Province or Territory | 1951 |  |  | 1956 |  |  | 1961 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Males | Females | Males to 100 Females | Males | Females | Males to 100 Females | Males | Females | $\begin{array}{\|c\|c\|} \text { Males } \\ \text { to } 100 \\ \text { Females } \end{array}$ |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| Newfoundland.. | 185,143 | 176,273 | 105 | 213,905 | 201,169 | 106 | 234,924 | 222,929 | 105 |
| Prince Edward Island........ | 50,218 | 48,211 | 104 | 50,510 | 48,775 | 104 | 53,357 | 51,272 | 104 |
| Nova Scotia.... | 324,955 | 317,629 | 102 | 353,182 | 341,535 | 103 | 374,244 | 362,763 | 103 |
| New Brunswick | 259,211 | 256,486 | 101 | 279,590 | 275,026 | 102 | 302,440 | 295,496 | 102 |
| Quebec.. | 2,022,127 | 2,033,554 | 99 | 2,317,677 | 2,310,701 | 100 | 2,631,856 | 2,627,355 | 100 |
| Ontario......... | 2,314,170 | 2,283,372 | 101 | 2,721,519 | 2,683,414 | 101 | 3,134,528 | 3,101,564 | 101 |
| Manitoba. | 394,818 | 381,723 | 103 | 432,478 | 417,562 | 104 | 468,503 | 453,183 | 103 |
| Saskatchewan. . | 434,568 | 397, 160 | 109 | 458,428 | 422,237 | 109 | 479,564 | 445,617 | 108 |
| Alberta......... | 492,192 | 447, 309 | 110 | 585,921 | 537,195 | 109 | 689,383 | 642,561 | 107 |
| British Columbia..... | 596,961 | 568,249 | 105 | 720,516 | 677,948 | 106 | 829,094 | 799,988 | 104 |
| Yukon Territory | 5,457 | 3,639 | 150 | 6,924 | 5,266 | 131 | 8,178 | 6,450 | 127 |
| Northwest Territories.... | 9,053 | 6,951 | 130 | 11,229 | 8,084 | 139 | 12,822 | 10,176 | 126 |
| Canada.... | 7,088,873 | 6,920,556 | 102 | 8,151,879 | 7,928,912 | 103 | 9,218,893 | 9,019,354 | 102 |

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 1930's. 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 1961

| Age Group | 1951 |  | 1956 |  | 1961 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Male | Female | Male | Female | Male | Female |
|  | No. | No. | No. | No. | No. | No. |
| 0-4 years | 879,063 | 843,046 | 1,011,835 | 971,728 | 1,154, 091 | 1,102,310 |
| 5-9 ${ }^{\text {a }}$ | 713,873 | 683,952 | 919;952 | 887,101 | 1,063,840 | 1,015,682 |
| 10-14 " | 575,122 | 555,661 | 732,032 | 702,562 | 948,160 | 907,839 |
| 15-19 | 532,180 | 525,792 | 586,635 | 575,666 | 729,035 | 703,524 |
| 20-24 " | 537,535 | 551,106 | 567,179 | 561,931 | 587,139 | 596,507 |
| 25-29 " | 552, 812 | 578,403 | 605,836 | 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 | 322,195 | 381,835 | 351,215 | 442,909 | 420,279 |
| 55-59 " | 292,564 | 278,126 | 321,973 | 307,271 | 362,145 | 343,690 |
| 60-64 " | 264,324 | 241, 828 | 265,652 | 259,265 | 292,569 | 291,066 |
| 65-69 " | 228,076 | 205,421 | 237,551 | 226,562 | 239, 685 | 247,417 |
| 70-74 " | 160,398 | 154,674 | 187,490 | 183,218 | 196,076 | 206,099 |
| 75-79 " | 94,130 | 94,261 | 113,550 | 113,948 | 134,186 | 140,051 |
| 80-84 " | 45,963 | 50,828 | 55,636 | 61,460 | 69,046 | 77,771 |
| 85-89 " | 17,539 | 22,060 | 21,688 | 26,670 | 27,178 | 33,606 |
| 90 years or over | 5,197 | 7,726 | 6,295 | 9,870 | 7,946 | 12,093 |
| Tota | 7,088,873 | 6,920,556 | 8,151,879 | 7,928,912 | 9,218,893 | 9,019,354 |

12.-Age Distribution of the Population, by Province, Census 1961

| Province or Territory | $\begin{gathered} 0-4 \\ \text { Years } \end{gathered}$ | $\begin{gathered} 5-9 \\ \text { Years } \end{gathered}$ | $\begin{aligned} & 10-14 \\ & \text { Years } \end{aligned}$ | $\begin{aligned} & 15-19 \\ & \text { Years } \end{aligned}$ | $\begin{aligned} & 20-24 \\ & \text { Years } \end{aligned}$ | $\begin{aligned} & 25-34 \\ & \text { Years } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. |
| Newfoundland. | 67,695 | 64,404 | 59,464 | 43,829 | 30,238 | 52,290 |
| Prince Edward Island. | 13,221 | 12,216 | 12,264 | 8,875 | 6,344 | 11,049 |
| Nova Scotia.. | 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 | 593,037 | 436,883 | 386,966 | 882,476 |
| Manitoba. | 107,574 | 101, 382 | 91,150 | 70,808 | 59,007 | 117,317 |
| Saskatchewan | 113,755 | 106,886 | 94,273 | 72,864 | 56,996 | 113,556 |
| Alberta. | 179,888 | 159,053 | 130,383 | 99,004 | 89,154 | 192,571 |
| British Columbia | 186,793 | 171,661 | 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 | 2,079,522 | 1,855,999 | 1,432,559 | 1,183,646 | 2,481,107 |
|  | 35-44 <br> Years | $\begin{aligned} & \text { 45-54 } \\ & \text { Years } \end{aligned}$ | $\begin{aligned} & 55-64 \\ & \text { Years } \end{aligned}$ | $\begin{aligned} & \text { 65-69 } \\ & \text { Years } \end{aligned}$ | $\begin{aligned} & 70+ \\ & \text { Years } \end{aligned}$ | Total |
|  | No. | No. | No. | No. | No. | No. |
| Newfoundland. | 48,964 | 39,343 | 24,731 | 9,684 | 17,211 | 457, 853 |
| Prince Edward Island. | 11,407 | 10,501 | 7,822 | 3,582 | 7,348 | 104,629 |
| Nova Scotia.......... | 89,618 | 75, 881 | 50,897 | 21,341 | 42, 076 | 737, 007 |
| New Brunswick | 69, 809 | 56,676 |  |  | 30,701 189 |  |
| Quebec.. | 665,734 86653 | 511,334 670,544 | 339,563 | 116,923 180,063 | 189,378 328,010 | 5, $6,236,2992$ |
| Ontario.. | 866,563 120,774 | 670,544 100,500 | 476,838 69,886 | 180,063 28,169 | 1828,010 55,119 | 6, 2321,686 |
| 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 |
| Northwest Territories. | 2,629 | 1,682 | 923 | 260 | 334 | 22,998 |
| Canada. | 2,389,885 | 1,878,504 | 1,289,470 | 487,102 | 904,052 | 18,238,247 |

## 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 low, the expected birth rate will be low. In 1961, 62.9 p.c. of all married females were in the $15-44$ age group compared with 64.3 p.c. in 1956, 61.2 p.c. in 1941 and 63.5 p.c. 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 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


## Subsection 7.-Ethnic Groups and Birthplaces

Ethnic Group.-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

${ }^{1}$ Excludes Newfoundland. ${ }^{2}$ Includes 35,416 half-breeds.
Birthplace.-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

| Country | $1941{ }^{1}$ | 1951 | 1961 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | p.c. |
| Canada................................................. | 9,487,808 | 11,949,518 | 15,393,984 | 84.4 |
| British Isles. | 960,1252 | 912,482 | 969,715 | 5.3 |
| Other Commonwealth.................................. | 43,644 | 20,567 | 47,887 | 0.3 |
| Europe. | 653,705 | 801,618 | 1,468,058 | 8.0 |
| Austria......... | 50,713 | 37,598 | 70,192 | 0.4 |
| Czechoslovakia | 25,564 13 | 29,546 | 35,743 | 0.2 |
| Germany | 28,479 | 42,693 | 189,131 | 1.0 |
| Greece.. | 5,871 | 8,594 | 38,017 | 0.2 |
| Hungary. | 31,813 | 32,929 | 72,900 | 0.4 |
| Italy.... | 40,432 | 57,789 | 258,071 | 1.4 |
| Netherlands | 9,923 | 41,457 | 135,033 | 0.7 |
| Poland. | 155,400 | 164,474 | 171,467 | 0.9 |
| Scandinavian countries ${ }^{3}$ | 72,473 | 64,522 | 74,616 | 0.4 |
| Union of Soviet Socialist Republics | 124,402 | 188,292 | 186,653 | 1.0 |
| Yugoslavia.......................... | 17,416 | 20,912 | 50,826 | 0.3 |
| Other European. | 77,424 | 97,162 | 149,306 | 0.8 |
| Asia. | 44,443 | 37,145 | 57,761 | 0.3 |
| China O Aser | 29,095 | 24,166 | 36,724 | 0.2 |
|  |  |  |  |  |
| United States.. | 312,473 | 282,010 | 283,908 | 1.6 |
| Other countries. | 3,512 | 6,089 | 16,934 | 0.1 |
| Totals. | 11,506,6554 | 14,009,429 | 18,238,247 | 100.0 |

${ }^{1}$ Excludes Newfoundland. ${ }_{4}$ Includes persons whose birthplace was not stated. ${ }^{2}$ Includes Denmark, Iceland
orway and Sweden.
16.-Province of Birth of Canadian-Born Persons, Census Years 1941, 1951 and 1961

| Province | 1941 | 1951 | 1961 | Province or Territory | 1941. | 1951 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. |  | No. | No. | No. |
| Nfld. |  | 397,623 | 497,591 | Sask. | 667,832 | 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 | 783,848 |  | 335,554 | 514,651 | 843,596 |
| N.B. | 463,127 | 549,984 | -655,066 | Yukon and N.W.T.. | 12,267 | 16,654 | 26,028 |
| Ont. | 3,123,810 | 3,645, 074 | 4,667,159 |  |  |  |  |
| Man. | 570,349 | 699,587 | 878,369 | Canada. | 9,487,808 ${ }^{1}$ | 11,949,518 | 15,393,984 |

${ }^{1}$ Includes persons 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 by 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 Church of Canada. | 1,754,368 | 2,060,720 | 2,409,068 | 13.2 |
| Baptist......... | 484,465 | 517, 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 | 204,836 | 254,368 | 1.4 |
| Lutheran. | 401,836 | 444, 923 | 662,744 | 3.6 |
| Mennonite ${ }^{1}$. | 111,554 | 125,938 | 152,452 | 0.8 |
| Mormon.. | 25,328 | 32,888 | 50,016 | 0.3 |
| Pentecostal. | 57,742 | 95,131 | 143,877 | 0.8 |
| Presbyterian | 830,597 | 781,747 | 818,558 | 4.5 |
| Roman Catholic | 4,806,431 | 6,069,496 | 8,342,826 | 45.7 |
| Salvation Army | 33,609 | 70,275 | 92,054 | 0.5 |
| Ukrainian (Greek) 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 | 317,303 | 531,287 | 2.9 |
| Totals | 11,506,655 ${ }^{3}$ | 14,009,429 | 18,238,247 | 100.0 |

${ }^{1}$ Includes "Hutterites".
${ }^{2}$ Includes "Other Greek Catholic".
${ }^{3}$ Exclusive of Newfoundland.

## 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. Of the two "official languages" in Canada, the proportion speaking English only in 1961 was 67.4 p.c., French only 19.1 p.c., both English and French 12.2 p.c. and neither English nor French 1.3 p.c. Table 18 shows the distribution of official language by province.

## 18.-Population Speaking One, Both or Neither of the Official Languages, by Province, Census 1961

| Province or Territory | English Only | French Only | English and <br> French | Neither <br> English <br> French |
| :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. |
| Newfoundland. | 450,945 | 522 | 5,299 | 1,087 |
| Prince Edward Island. | 95,296 | 1,219 | 7,938 | 176 |
| Nova Scotia. | 684,805 | 5,938 | 44,987 | 1,277 |
| New Brunswick | 370,922 | 112,054 | 113,495 | 1,465 |
| Quebec...... | 608,635 | 3,254,850 | 1,338,878 | 56,848 |
| Ontario. | 5,548,766 | 95,236 | 493,270 | 98,820 |
| Manitoba. | 825,955 | 7,954 | 68,368 | 19,409 |
| Saskatchewan | 865,821 | 3,853 | 42,074 | 13,433 |
| Alberta. | 1,253, 824 | 5,534 | 56,920 | 15,666 |
| British Columbia | 1,552,560 | 2,559 | 57,504 | 16,459 |
| Yukon Territory. | 13,679 | 38 109 | 1825 | 86 7,721 |
| Northwest Territories. | 13,554 | 109 | 1,614 | 7,721 |
| Canada | 12,284,762 | 3,489,866 | 2,231,172 | 232,447 |

The proportion of the population 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). Table 19 shows the numerical and percentage distribution by mother tongue for Canada in 1961.
19.-Mother Tongues of the Population, Census 1961

| Mother Tongue | Number | Percentage of Total | Mother Tongue | 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-Croatian. | 28,866 | 0.16 |
| Ukrainian. | 361,496 | 1.98 | Japanese.... | 17,856 | 0.10 |
| Italian. | 339,626 | 1.86 | Lithuanian. | 14,997 | 0.08 |
| Netherlands. . . . | 170,177 | 0.93 | Flemish. | 14,304 | 0.08 |
| Indian and Eskimo | 166,531 | 0.91 | Lettish.. | 14,062 | 0.08 |
| Polish. | 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 |
| Chinese. | 49,099 | 0.27 | Icelandic. | 8,993 | 0.05 |
| Finnish. | 44,785 | 0.25 | Gaelic. | 7,533 | 0.04 |
| Russian. | 42,903 | 0.24 | Welsh. | 3,040 | 0.02 |
| Slovak. | 42,546 | 0.23 | Ot | 48,758 | 0.27 |
| Norwegian | 40,054 | 0.22 | Canada | 18,238,247 | 100.00 |

## Subsection 10.-Households and Families

This Subsection contains a summary of the principal 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. 156).

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.

[^42]
## 20.-Households and Persons per Household, by Province, Census Years 1951, 1956 and 1961

| Province or Territory | Households |  |  | Average Persons per Household |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1951 | 1956 | 1961 | 1951 | 1956 | 1961 |
|  | No. | No. | No. | No. | No. | No. |
| Newfoundland. | 70,980 | 78,808 | 87,940 | 5.0 | 5.1 | 5.0 |
| Prince Edward Island | 22,454 | 22,682 | 23,942 | 4.3 | 4.2 | 4.2 |
| Nova Scotia.. | 149,555 | 162,854 | 175, 341 | 4.2 | 4.1 | 4.0 |
| New Brunswick | 114,007 | 120,475 | 132,715 | 4.4 | 4.5 | 4.4 |
| Quebec....... | 858,784 | 1,001,264 | 1,191,469 | 4.6 | 4.4 | 4.2 |
| Ontario.. | 1,181,126 | 1,392,491 | 1,640, 881 | 3.8 | 3.8 | 3.7 |
| Manitoba...... | 202,398 | 217,964 | 239,754 | 3.7 | 3.7 | 3.7 |
| Saskatchewan. | 221,456 | 233,664 | 245, 424 | 3.7 | 3.6 | 3.6 |
| Alberta....... | 250, 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 | .. | 6,994 | 7,920 | .. | 3.8 | 4.2 |
| Canad | 3,409,284 ${ }^{1}$ | 3,923,646 | 4,554,736 | $4.0{ }^{1}$ | 3.9 | 3.9 |

[^43]Table 21 shows that in 1961 there was a higher proportion of one- and two-person households than a decade previously and a correspondingly lower proportion of the largestsized households.
21.-Households classified by Number of Persons, Census Years 1951, 1956 and 1961

| Persons per Household | Households |  |  | Percentages of Total |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $1951{ }^{1}$ | 1956 | 1961 | $1951{ }^{1}$ | 1956 | 1961 |
|  | No. | No. | No. |  |  |  |
| 1 person.. | 252,436 | 308,613 | 424,750 | 7.4 | 7.9 | 9.3 |
| ${ }_{3}^{2}$ persons. | 711,110 | 855, 109 | 1,012,068 | 20.9 | 21.9 | 22.2 |
| 3 " | 688,025 | 739,390 | 809,182 | 20.2 | 18.8 | 17.8 |
| 4 ¢ " | 645,512 439873 | 742,363 | ${ }_{604} 83,912$ | 18.9 | 18.9 | 18.4 |
| 6 " | 268,238 | 314,040 | 372,914 | 7.9 | 8.0 | 18.3 |
| 7 " | 158,900 | 180,603 | 209,247 | 4.7 | 4.6 | 4.6 |
| 8-9 " | 154,540 | 169,723 | 189,447 | 4.5 | 4.3 | 4.2 |
| 10 or more persons. | 90,650 | 95,984 | 95,955 | 2.7 | 2.4 | 2.1 |
| Totals, Households. | 3,409,284 | 3,923,646 | 4,554,736 | 100.0 | 100.0 | 100.0 |
| Average Persons per Household.. | 4.0 | 3.9 | 3.9 | ... | .. | ... |

${ }^{1}$ Exclusive of the Yukon and Northwest Territories.
Table 22 gives two classifications of households. The first is by the number of families* they include. While the proportion of one-family households has remained relatively stable since 1951, that of doubled-up families shows a fairly sharp drop from 6.7 p.c. in 1951 to 3.7 p.c. in 1961, a possible indication of an easing in the housing situation. The proportion of non-family households has increased slightly over the ten-year period-from 11.3 p.c. to 13.3 p.c.

The second classification is by number of lodgers. The percentage of households with lodgers has continued to decrease but at a much slower pace between 1956 and 1961 than during the previous five-year period.

[^44]22.-Households classified by Number of Families and by Number of
Lodgers, Census Years 1951,1956 and 1961

| Families or Lodgers | 1951 |  | 1956 |  | 1961 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | $\begin{aligned} & \text { P.C. of } \\ & \text { Total } \end{aligned}$ | No. | $\begin{aligned} & \text { P.C. of } \\ & \text { Total } \end{aligned}$ | No. | $\begin{aligned} & \text { P.C. of } \\ & \text { Total } \end{aligned}$ |
| Households with- |  |  |  |  |  |  |
| 0 family.... | 385,010 | 11.3 | 459,420 | 11.7 | 605,801 3,780 | 13.3 83 |
| 1 family..... | 2,794,860 | 82.0 | 3,259,499 | 83.1 5.2 | $3,780,992$ 167,943 | 83.0 3.7 |
| $2+$ families. | 229,425 | 6.7 | 204,727 | 5.2 | 167,943 | 3.7 |
| 0 lodger. | 3,081,085 | 90.4 | 3,610,238 | 92.0 | 4,210,953 | 92.4 |
| 1 lodger.. | 171,310 | 5.0 | 162,067 | 4.1 | 207,518 | 4.6 |
| 2 lodgers. | 73,480 | 2.2 | 68,950 | 1.8 | 67,237 69,028 | 1.5 1.5 |
| $3+$ lodgers. | 83,420 | 2.4 | 82,391 | 2.1 | 69,028 | 1.5 |

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 23.
23.-Families and Persons per Family, by Province, Census Years 1951, 1956 and 1961

| Province or Territory | Families |  |  | Average Persons per Family |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1951 | 1956 | 1961 | 1951 | 1956 | 1961 |
|  | No. | No. | No. | No. | No. | No. |
| Newfoundland............................ | 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 |
| Manitoba.. | 191,268 | 204,414 | 215,831 | 3.6 | 3.6 | 3.7 |
| Saskatchewan.. | 196,188 | 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 |
| Yukon and Northwest Territories......... | 4,839 | 5,893 | 7,060 | 3.9 | 4.1 | 4.3 |
| Canada.......................... | 3,287,384 | 3,711,500 | 4,147,444 | 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. Table 24 shows the 1961 distribution of families according to type.

## 24.-Families classified by Type and by Province, Census 1961

| Province or Territory | $\left\|\begin{array}{c} \text { Maintaining } \\ \text { Own } \\ \text { Household } \end{array}\right\|$ | Not Maintaining Own Household |  |  |  | Total Families |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Related | Lodging | Other | Total |  |
|  | No. | No. | No. | No. | No. | No. |
| Newfoundland. | 81,068 | 6,996 | 1,139 | 64 | 8,199 | 89,267 |
| Prince Edward Island. | 20,294 | 1,455 | 177 | 43 | 1,675 | 21,969 |
| Nova Scotia. | 149,876 | 9,626 | 2,012 | 380 | 12,018 | 161,894 |
| New Brunswick. | 116,446 | 7,032 | 970 | 205 | 8,207 | 124,653 |
| Quebec. | 1,051,891 | 42,777 | 8,222 | 932 | 51,931 | 1,103,822 |
| Ontario. | 1,405,131 | 61,376 | 43,500 | 1,471 | 106,347 | 1,511,478 |
| Manitoba. | 204,406 | 6,030 | 4,702 | 693 | 11,425 | 215,831 |
| Saskatchewan. | 204,612 | 4,385 | 2,154 | 625 | 7,164 | 211,776 |
| Alberta. | 293,609 | 7,197 | 3,431 | 1,434 | 12,062 | 305,671 |
| British Columbia. | 377,596 | 9,836 | 5,973 | 518 | 16,427 | 394,023 |
| Yukon and Northwest Territories... | 6,600 | 310 | 136 | 14 | 460 | 7,060 |
| Canada.................... | 3,911,529 | 157,120 | 72,416 | 6,379 | 235,915 | 4,147,444 |

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 25, 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.
25.-Children Living at Home classified by Age Group and by Province, Census 1961

| Province or Territory | Under <br> 6 Years | $\begin{gathered} 6-14 \\ \text { Years } \end{gathered}$ | 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 Island.... | 15,550 | 21,563 | 6,626 | 4,465 | 3,606 | 600 | 47,345 |
| Nova Scotia............. | 107,627 | 144,950 | 45,611 | 32,907 | 23,000 | 4,036 | 321,188 |
| New Brunswick.......... | 93,231 | 131,102 | 39,668 | 27,329 | 19,745 | 3,660 | 283,747 |
| Quebec.................. | 789,382 | 1,042,937 | 353,764 | 209,975 | 240,275 | 34,464 | 2,426,358 |
| Ontario.................. | 874,318 | 1,111,981 | 321,482 | 245,421 | 179,622 | 45,625 | 2,487,403 |
| Manitoba. | 127,250 | 169,016 | 51,530 | 39,156 | 26,775 | 5,883 | 374,571 |
| Saskatchewan ........... | 134,502 | 176,645 | 53,033 | 41,991 | 23,396 | 5,736 | 387,576 |
| Alberta.................. | 212,114 | 250,672 | 70,686 | 57,259 | 32,882 | 8,351 | 566,354 |
| British Columbia........ | 220,347 | 281,698 | 83,272 | 68,346 | 42,081 | 11,714 | 627,398 |
| Yukon and Northwest Territories............. | 7,158 | 6,985 | 1,554 | 861 | 826 | 91 | 16,523 |
| Canada.......... | 2,661,724 | 3,446,569 | 1,059,808 | 748,714 | 609,036 | 121,682 | 7,777,137 |

In Table 26, families are classified by age of family head and in Table 27 they are divided into two groups-those consisting of a husband and wife with or without children, which included 92 p.c. of all families in 1961, and those consisting of one parent only with one or more children. The latter group is classified further according to the marital status and sex of the family head; widowed heads comprised three fifths of the group.
26.-Families classified by Age of Head and by Province, Census 1961

| Province or Territory | Under 35 Years | $\begin{aligned} & 35-44 \\ & \text { Years } \end{aligned}$ | $\begin{aligned} & 45-54 \\ & \text { Years } \end{aligned}$ | $\begin{aligned} & 55-64 \\ & \text { Years } \end{aligned}$ | 65 Years or Over | Total Families |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. |
| Newfoundland. | 24,886 | 22,014 | 19,010 | 11,784 | 11,573 | 89,267 |
| Prince Edward Island. | 5,025 | 4,716 | 4,735 | 3,364 | 4,129 | 21,969 |
| Nova Scotia. | 42,537 | 39,003 | 34,716 | 21,632 | 24,006 | 161,894 |
| New Brunswick | 32,085 | 30,708 | 26,454 | 16,998 | 18,408 | 124,653 |
| Quebec. | 312,469 | 288,173 | 233,214 | 150,472 | 119,494 | 1,103,822 |
| Ontario. | 425,113 | 390,093 | 312,500 | 206,638 | 177,134 | 1,511,478 |
| Manitoba. | 54,220 | 52,224 | 45,868 | 30,946 | 32,573 | 215,831 |
| Saskatchewan. | 51,471 | 49,743 | 44,532 | 30,754 | 35,276 | 211,776 |
| Alberta. | 93,062 | 77,061 | 60,072 | 39,648 | 35,828 | 305,671 |
| British Columbia | 101,434 | 97,652 | 85,131 | 52,320 | 57,486 | 394,023 |
| Yukon and Northwest Territories... | 2,859 | 1,936 | 1,247 | 653 | 365 | 7,060 |
| Canada | 1,145,161 | 1,053,323 | 867,479 | 565,209 | 516,272 | 4,147,444 |

27.-Families classified by Marital Status and Sex of Family Head, by Province, Census 1961

| Province <br> or Territory | Families with Husband and Wife at Home | Families with Only One Parent at Home |  |  |  |  |  |  |  | Total Families |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Widowed Head |  | Married Head |  | Divorced Head |  | Total ${ }^{1}$ |  |  |
|  |  | Male | Female | Male | Female | Male | Female | Male | Female |  |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| Newfoundland.. | 80,916 | 1,496 | 4,426 | 621 | 1,489 | 7 | 34 | 2,224 | 6,127 | 89,267 |
| Prince Edward Island......... | 19,601 | 335 | 1,206 | 165 | 541 | 6 | 26 | 540 | 1,828 | 21,969 |
| Nova Scotia.... | 144,326 | 2,174 | 8,560 | 1,436 | 4,214 | 125 | 388 | 3,955 | 13,613 | 161,894 |
| New Brunswick. | 112,901 | 1,572 | 6,050 | 871 | 2,569 | 78 | 315 | 2,620 | 9,132 | 124,653 |
| Quebec.......... | 1,008,004 | 14,511 | 53,097 | 7,709 | 17,423 | 211 | 1,205 | 23,073 | 72,745 | 1,103,822 |
| Ontario. | 1,392,346 | 12,566 | 56,454 | 9,946 | 31,121 | 1,016 | 5,404 | 24,333 | 94,799 | 1,511,478 |
| Manitoba....... | 197,146 | 2,086 | 9,267 | 1,267 | 4,578 | 125 | 708 | 3,647 | 15,038 | 215,831 |
| Saskatchewan .. | 194,708 | 2,174 | 8,627 | 1,276 | 3,633 | 106 | 470 | 3,732 | 13,336 | 211,776 |
| Alberta......... | 282,350 | 2,294 | 10,271 | 1,832 | 6,046 | 363 | 1,554 | 4,689 | 18,632 | 305,671 |
| British Columbia..... | 361,394 | 2,828 | 13,315 | 2,465 | 9,335 | 587 | 2,877 | 6,158 | 26,471 | 394,023 |
| Yukon and <br> Northwest <br> Territories... | 6,334 | 118 | 230 | 91 | 171 | 7 | 24 | 232 | 494 | 7,060 |
| Canada..... | 3,800,026 | 42,154 | 171,503 | 27,679 | 81,120 | 2,631 | 13,005 | 75,203 | 272,215 | 4,147,444 |

${ }^{1}$ Includes a few families with heads never married.

## Section 2.-Intercensal Surveys

Intercensal estimates of the populations of Canada and of the provinces have many uses. They are necessary to the calculation of costs of certain economic and social legislation. Business, educational and welfare organizations utilize population estimates in planning future development. They constitute a base for vital statistics rates, per capita figures of production and trade, and other analyses. They also have been found useful for estimating labour force and other population characteristics of data collected in sample surveys.

Estimates are constructed for the total population of Canada and for each province and become available about the date to which they apply-June 1 of each year. Population estimates by province are also available on a quarter-year basis. The estimates of population begin with the preceding census counts, to which are added the births of the intervening census year or years and from which the deaths are subtracted; immigrants are added and emigrants subtracted. No complete information is available on emigration. The DBS receives yearly from the United States the number of persons who gave Canada as country of last permanent residence before entering the United States as immigrants (see Chapter on Immigration and Citizenship, Part I, Section 3) and from the RegistrarGeneral of Britain the number of emigrants from Canada arriving by sea to take up permanent residence in that country. Such data, however, are not available from other countries but, as indicated by partial data from United Nations sources, the proportion of total emigrants to all other countries is small. Family allowance statistics showing the number of migrant families by provinces are used in estimating interprovincial shifts in population (see Table 3, p. 159).

The following statement shows the data used in preparing the revised population estimates for the years 1957 to 1960 and the annual estimate for 1962. The next succeeding census serves as a basis for revision of the annual estimates of each intercensal period.


[^45]
## 28.-Annual Estimates of Population, by Province, as at June 1, 1951-63

Note. - At every census the previous post-censal estimates, made at June 1 each year, are adjusted to the newly recorded population figures. Figures for 1951, 1956 and 1961 are census figures. Figures for 1867-1904 will be found in the 1936 Year Book, p. 141; for 1905-30 in the 1946 edition, p. 127; for 1931-40 in the 1952-53 edition, p. 143; and for 1941-50 in the 1961 edition, p. 165. Figures for 1867-1951 will also be found in Census of Canada 1951, Vol. X, Appendix A-4.

| Year | Nfld. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Yukon | N.W.T. | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | '000 | '000 | ' 000 | '000 | '000 | '000 | '000 | '000 | '000 | '000 | '000 | '000 | '000 |
| 1951. | 361 | 98 | 643 | 516 | 4,056 | 4,598 | 776 | 832 | 939 | 1,165 | 9 | 16 | 14,009 |
| 1952. | 374 | 100 | 653 | 526 | 4,174 | 4,788 | 798 809 | 843 | 1.073 | 1,205 | 9 | 16 | 14,845 |
| 1954. | 395 | 101 | 673 | 540 | 4,388 | 5,115 | 823 | 873 | 1,057 | 1,295 | 10 | 17 | 15,287 |
| 1955. | 406 | 100 | 683 | 547 | 4,517 | 5,266 | 839 | 878 | 1,091 | 1,342 | 11 | 18 | 15,698 |
| 1956. | 415 | 99 | 695 | 555 | 4,628 | 5,405 | 850 | 881 | 1,123 | 1,399 | 12 | 19 | 16,081 |
| 1957. | 424 | 99 | 701 | 562 | 4,769 | 5,636 | 862 | 880 | 1,164 | 1,482 | 12 | 19 | 16,610 |
| 1958. | 432 | 100 | 709 | 571 | 4,904 | 5,821 | 875 | 891 | 1,206 | 1,538 | 13 | 20 | 17,080 |
| 1959. | 441 | 101 | 719 | 582 | 5,024 | 5,969 | 891 | 907 | 1,248 | 1,567 | 13 | 21 | 17,483 |
| 1960. | 448 | 103 | 727 | 589 | 5,142 | 6,111 | 906 | 915 | 1,291 | 1,602 | 14 | 22 | 17,870 |
| 1961. | 458 | 105 | 737 | 598 | 5,259 | 6,236 | 922 | 925 | 1,332 | 1,629 | 14 | 23 | 18,238 |
| 1962. | 470 | 106 | 746 | 607 | 5,366 | 6,342 | 935 | 930 | 1,370 | 1,659 | 15 | 24 | 18,570 |
| 1963.... | 481 | 107 | 756 | 614 | 5,468 | 6,448 | 950 | 933 | 1,405 | 1,695 | 15 | 24 | 18,896 |

Because of the growing interest in the expanding population of the larger metropolitan areas of Canada, estimates for these areas have been prepared as of June 1, 1962. These are shown in Table 29 with the census counts for June 1, 1961; the estimates relate to the boundaries established for the 1961 Census. As in the preparation of intercensal population estimates for provinces, the births occurring in the metropolitan areas between June 1, 1961 and June 1, 1962 were added to the population at the census date, and deaths subtracted. Immigrants over this period reporting these metropolitan areas as places of destination were added and allowances were made for losses in population by emigration. Also, the net in-movement or out-movement caused by internal migration was calculated from family allowance and other data.

The falling off in the rate of population growth for the whole of Canada between June 1, 1961 and June 1, 1962, caused by declining immigration and a slight fall in the birth rate, is also reflected in the growth rate for the metropolitan areas.

## 29.-Estimated Population of Major Metropolitan Areas ${ }^{\mathbf{1}}$ as at June 1, 1962, compared with 1961 Census

| Metropolitan Area ${ }^{2}$ | Census <br> June 1, 1961 | Estimate <br> June 1, 1962 | Metropolitan Area ${ }^{2}$ | $\begin{gathered} \text { Census } \\ \text { June } 1,1961 \end{gathered}$ | Estimate June 1, 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. |  | No. | No. |
| Calgary.. | 279,062 | 290,000 | Quebec.. | 357,568 | 366,000 |
| Edmonton.... | 337,568 | 349,000 | Toronto.. | 1,824,481 | 1,869,000 |
| Hamilton.. | 395,189 181,283 | 399,000 185,000 | Vancouver. | 790,165 | 798,000 |
| Montreal. | 2,109,509 | 2,156,000 | Windsor. | 193,365 | 194,000 |
| Ottawa. . | 429,750 | 446,000 | Winnipeg | 475,989 | 483,000 |

[^46]Table 30 gives estimates of the population of Canada and the provinces by age group and sex as of June 1, 1962. The method followed in preparing these estimates was much the same as that used in calculating the population estimates, described on p. 181. These estimates are subject to revision as soon as data from the next census are available.

## 30.-Estimated Population classified by Age Group and Sex, by Province, as at June 1, 1962

| Province or Territory | 0-4 Years |  | 5-9 Years |  | 10-14 Years |  | 15-19 Years |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Males | Females | Males | Females | Males | Females | Males | Females |
|  | '000 | '000 | '000 | '000 | '000 | '000 | '000 | '000 |
| Newfoundland........ | 35.6 | 34.3 | 32.5 | 31.8 | 31.2 | 30.1 | 23.6 | 23.5 |
| Prince Edward Island. | 6.8 | 6.6 | 6.2 | 6.0 | 6.3 | 6.1 | 4.9 | 4.6 |
| Nova Scotia........ | 47.0 | 45.0 | 43.8 | 41.5 | 41.8 | 39.9 | 34.7 | 32.6 |
| New Brunswick | 40.7 | 38.7 | 38.6 | 37.0 | 37.8 | 36.5 | 29.3 | 27.9 |
| Quebec... | 343.7 | 328.7 | 323.2 349 | 309.4 | 297.3 | 285.2 | 248.0 | 242.0 |
| Ontario... | 386.1 | 367.2 | 349.3 | 333.6 | 315.6 | 300.0 | 237.1 | 225.9 |
| Manitoba...... | 55.9 | 53.4 | 52.1 | 49.8 | 47.8 | 46.0 | 38.1 | 36.3 |
| Saskatchewan. | 58.5 | 56.1 | 54.9 | 52.2 | 49.3 | 47.4 | 38.9 | 36.9 |
| Alberta. | 94.8 | 90.3 | 83.6 | 79.1 | 70.3 | 67.0 | 53.4 | 51.3 |
| British Columbia. | 96.7 | 92.5 | 89.1 | 85.2 | 80.0 | 76.8 | 61.5 | 58.5 |
| Yukon Territory.. | 1.3 | 1.2 | 0.9 | 0.9 | 0.7 | 0.6 | 0.4 | 0.4 |
| Northwest Territories.. <br> Canada | 2.2 | 2.1 | 1.6 | 1.5 | 1.3 | 1.3 | 0.9 | 0.8 |
|  | 1,169.3 1,116.1 |  | 1,075.8 1 1,028.0 |  | 979.4 936.9 |  | 770.8 | 740.7 |
|  | 20-24 Years |  | 25-34 Years |  | 35-44 Years |  | 45-54 Years |  |
|  | Males | Females | Males | Females | Males | Females | Males | Females |
|  | '000 | '000 | '000 | '000 | '000 | '000 | '000 | '000 |
| Newfoundland........ | 16.2 | 16.0 | 27.5 | 25.1 | 25.9 | 23.3 | 21.6 | 19.1 |
| Prince Edward Island. | 3.5 | 3.2 | 5.6 | 5.3 | 5.7 | 5.6 | 5.6 | 5.1 |
| Nova Scotia........... | 26.4 | 24.5 195 | 43.8 | 42.6 33 | ${ }_{34.1}$ | 44.8 | 40.1 | 37.3 |
| Quebec... | 188.4 | 195.8 | 364.6 | 369.0 | 336.4 | 344.5 | 261.7 | 262.1 |
| Ontario. | 192.0 | 197.8 | 438.3 | 427.2 | 440.3 | 442.4 | 347.6 | 336.4 |
| Manitoba. | 30.3 | 29.8 | 59.3 | 56.4 | 59.8 | 61.3 | 52.0 | 50.6 |
| Saskatchewan. | 29.2 | 28.3 | 56.7 | 53.2 | 57.9 | 56.7 | 51.1 | 47.5 |
| Alberta. | 44.9 | 45.6 | 100.4 | 92.9 | 89.9 | 87.3 | 69.1 | 64.1 |
| British Columbia | 48.7 | 48.7 | 109.5 | 101.8 | 110.7 | 115.1 | 96.1 | 94.0 |
| Yukon Territory. | 0.6 | 0.4 | 1.7 | 1.2 | 1.3 | 1.0 | 0.7 | 0.5 |
| Northwest Territories.. | 1.2 | 0.9 | 2.5 | 1.7 | 1.6 | 1.1 | 1.1 | 0.7 |
| Canada. | 601.2 | 610.5 | 1,243.1 | 1,209.8 | 1,208.2 | 1,218.1 | 976.5 | 945.4 |

30.-Estimated Population classified by Age Group and Sex, by Province, as at June 1, 1962-concluded

| Province or Territory | 55-64 Years |  | 65-69 Years |  | $70+$ Years |  | All Ages |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Males | Females | Males | Females | Males | Females | Males | Females |
|  | '000 | '000 | '000 | '000 | '000 | '000 | '000 | '000 |
| Newfoundland... | 13.1 | 12.2 | 4.9 | 4.9 | 8.9 | 8.7 | 241.0 | 229.0 |
| Prince Edward Island... | 4.1 | 3.7 | 1.8 | 1.8 | 3.6 | 3.9 | 54.1 | 51.9 |
| Nova Scotia.. | 26.4 | 25.4 | 10.4 | 10.9 | 20.2 | 22.8 | 378.7 | 367.3 |
| New Brunswick. | 19.9 | 19.7 | 8.0 | 8.2 | 15.0 | 16.4 | 306.7 | 300.3 |
| Quebec..... | 173.0 | 178.2 | 57.7 | 61.9 | 90.3 | 104.9 | 2,684.3 | 2,681.7 |
| Ontario.. | 243.6 | 243.5 | 86.9 | 95.4 | 148.3 | 187.5 | 3,185.1 | 3,156.9 |
| Manitoba. | 36.7 | 34.9 | 14.1 | 14.0 | 28.5 | 27.9 | 474.6 | 460.4 |
| Saskatchewan.. | 36.9 | 32.1 | 14.8 | 12.9 | 32.4 | 26.1 | 480.6 | 449.4 |
| Alberta. | 49.4 | 41.4 | 17.2 | 14.9 | 34.3 | 28.8 | 707.3 | 662.7 |
| British Columbia. | 66.5 | 60.5 | 24.6 | 25.6 | 59.6 | 57.3 | 843.0 | 816.0 |
| Yukon Territory.... | 0.5 | 0.3 | 0.1 | 0.1 | 0.2 | - | 8.4 | 6.6 |
| Northwest Territories.. | 0.6 | 0.4 | 0.2 | 0.1 | 0.1 | 0.1 | 13.3 | 10.7 |
| Canada. | 670.7 | 652.3 | 240.7 | 250.7 | 441.4 | 484.4 | 9,37\%.1 | 9,192.9 |

## Section 3.-The Native Peoples of Canada

## The Indians*

Approximately one of every hundred Canadians is registered as an Indian by the Department of Citizenship and Immigration. This number includes all persons with a paternal ancestor of Indian race who have chosen to remain under Indian legislation. In the aggregate, the Indians are grouped into 556 bands and occupy or have access to 2,239 reserves having a total area of 5,918,279 acres.

About 26 p.c. of the Indians reside away from reserves, including those in the Yukon and Northwest Territories for whom reserves have not been set aside. Many Indians, both on and off reserves, have specialized in various professions, trades and agricultural pursuits. Others have fitted into the economy of the areas in which they live in a wide range of occupations. More than 260 Indians are employed by the Indian Affairs Branch of the Department of Citizenship and Immigration, 111 of them as teachers. In the northern and other outlying areas, hunting, fishing and trapping remain an important means of livelihood for Indians.

Subject to special provisions in the Indian Act, all laws of general application are applicable to Indians. Indians are liable for taxation of property held off a reserve as well as of any income they earn off a reserve. They may vote in federal elections on the same basis as other citizens and in provincial elections where the electoral laws of the provinces permit. Indians are free to enter into contractual obligations and may sue and be sued. However, their real and personal property situated on a reserve is exempt from seizure except on suit by another Indian.

[^47]31.-Indian Land in Reserves and Number of Bands, by Province, as at Mar. 31, 1962

| Province or Territory | Bands | Reserves | Total Area |
| :---: | :---: | :---: | :---: |
|  | No. | No. | acres |
| Prince Edward Island. . | 1 | 4 | 2,741 |
| Nova Scotia. | 11 | 43 | 25,404 |
| New Brunswick. | 15 | 23 | 37,671 |
| Quebec... | 41 | 26 | 178,971 |
| Ontario.. | 111 | 163 | 1,555,732 |
| Manitoba. | 50 | 107 | 524,015 |
| Saskatchewan. | 67 | 120 | 1,207,250 |
| Alberta. . | 41 | 87 | 1,561,868 |
| British Columbia. | 189 | 1,619 | 817,957 |
| Yukon Territory. | 14 | $21^{1}$ | 4,739 |
| Northwest Territories. | 16 | $26^{1}$ | 1,931 |
| Totals. | 556 | 2,239 | 5,918,279 |

${ }^{1}$ Indian settlements only.
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 32; the figures for 1960 and 1961 are taken from band membership lists kept for administrative purposes by the Indian Affairs Branch.

## 32.-Indian Population, by Province, Departmental Censuses 1949, 1954 and 1959 and Estimates 1960 and 1961

| Province or Territory | 1949 | 1954 | 1959 | $1960{ }^{1}$ | $1961{ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. |
| Prince Edward Island. | 273 | 272 | 341 | 343 | 348 |
| Nova Scotia. | 2,641 | 3,002 | 3,561 | 3,630 | 3,746 |
| New Brunswick. | 2,139 | 2,629 | 3,183 | 3,280 | 3,397 |
| Quebec. | 15,970 | 17,574 | 20,453 | 21,154 | 21,970 |
| Ontario. | 34,571 | 37,255 | 42,668 | 43,767 | 44,765 |
| Manitoba. | 17,549 | 19,684 | 23,658 | 24,608 | 25,681 |
| Saskatchewan | 16,308 | 18,750 | 23,280 | 24,278 | 25,334 |
| Alberta. | 13,805 | 15,715 | 19,287 | 20,053 | 20,931 |
| British Columbia. | 27,936 | 31,086 | 36,229 | 37,375 | 38,616 |
| Yukon Territory. | 1,443 | 1,568 | 1,868 | 1,923 | 2,006 |
| Northwest Territories. | 3,772 | 4,023 | 4,598 | 4,758 | 4,915 |
| Totals | 136,407 | 151,558 | 179,126 | 185,169 | 191,709 |

## ${ }^{1}$ As at Dec. 31.

The 1959 Indian population in each province is classified by age group and sex in Table 33. The rapid growth of that population in recent years is indicated by the fact that in 1959 more than 56 p.c. of the Indians were under 21 years of age compared with 42 p.c. of the population of Canada as a whole. Religious denominations of the Indian population are given in Table 34.

## 33．－Indian Population classified by Age Group and Sex，by Province， Departmental Census 1959

| Province or Territory | 0－5 Years |  | 6－15 Years |  | 16－20 Years |  | 21－64 Years |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Males | Females | Males | Females | Males | Females | Males | Females |
|  | No． | No． | No． | No． | No． | No． | No． | No． |
| Prince Edward Island．．． | 36 | 28 | 32 | 36 | 23 | 17 | 80 | 66 |
| Nova Scotia ．．．．． | 329 | 291 | 462 | 460 | 177 | 162 | 763 | 645 |
| New Brunswick． | 363 | 335 | 414 | 404 | 144 | 146 | 673 | 549 |
| Quebec． | 1，805 | 1，851 | 2，314 | 2，293 | 918 | 945 | 4，764 | 4，280 |
| Ontario．．．．． | 4，057 | 3，992 | 5,224 | 5,108 | 1，989 | 2，049 | 9，220 | 8，147 |
| Manitoba． | 2，765 | 2，709 | 3，195 | 3，121 | 1，148 | 1，127 | 4，633 | 3，916 |
| Saskatchewan． | 2，888 | 2，867 | 3，063 | 3，080 | 1，071 | 1，098 | 4，334 | 3，956 |
| Alberta． | 2，386 | 2，313 | 2，563 | 2，661 | 901 | 980 | 3，537 | 3，110 |
| British Columbia． | 3，955 | 3，994 | 4，866 | 4，740 | 1，808 | 1，840 | 7，235 | 6，214 |
| Yukon Territory．．．．．．．．． Northwest Territories．．． | $\begin{array}{r} 215 \\ 428 \end{array}$ | 191 | 215566 | 258527 | 83203 | 89293 | ． 380 | 332 |
|  |  | 485 |  |  |  |  | 1，002 869 |  |
| Totals | 19，227 19，056 |  | 22，914 22，688 |  | 8，465 8，676 |  | 36，621 32，084 |  |
|  | 65－69 Years |  | $70+$ Years |  | Not Stated |  | All Ages |  |
|  | Males | Females | Males | Females | Males | Females | Males | Females |
|  | No． | No． | No． | No． | No． | No． | No． | No． |
| Prince Edward Island．．． | 2 | ${ }_{23}^{2}$ | $\begin{array}{r}5 \\ 57 \\ \hline\end{array}$ | 545 | 247 | 766 | 1801,869 | 161 |
| Nova Scotia．．．．． | $\stackrel{34}{24}$ |  |  |  |  |  |  | 1，692 |
| New Brunswick |  | 17 | 41 | 33 | 16 | 25 | 1，674 | 1，509 |
| Quebec．． | 242403 | 159 | 354 | 345 | 47213 | 136 | 10，444 | 10，009 |
| Ontario． |  | 343 | 317 | 699 |  | 43664 | 21，894 | 20,77411,406 |
| Manitoba． | 179 | 149 |  | 320 | 213 15 |  |  |  |
| Saskatchewan | 194 | 136 | 290 | 254 | 6 | 43 | 11，846 | 11,406 11,434 |
| Alberta． |  | 90 | 243 | 216 | 43 | 74 | 9，843 | 9,44417,520 |
| British Columbia． | 293 | 226 | 542 | 460 | ${ }^{10}$ | 46 | 18，709 |  |
| Yukon Territory．．．．．．． | 58 | ${ }_{36}$ | 37 77 | 86 | 16 | $\stackrel{2}{2}$ | 9338 2,349 | 930 $\mathbf{2 , 2 4 9}$ |
| Totals． | 1，605 | 1，202 | 2，751 | 2，500 | 415 | 922 | 91，998 | 87，128 |

34．－Religious Denominations of the Indian Population，by Province， Departmental Census 1959

| Province or Territory | Anglican | Baptist | United Church | Pres－ byterian | Roman Catholic | Other Christian Beliefs | Aboriginal | Not Stated | All Denom－ inations |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No． | No． | No． | No． | No． | No． | No． | No． | No． |
| P．E．I．．．．．．． | － | － | － | － | 340 | － | － | 1 | 341 |
| N．S．．．．．． | － | － | 6 | － | 3，531 | 2 | 二 | $\stackrel{22}{160}$ | 3，561 |
| N．B．． | －${ }^{\text {a }} 95$ | 5 | 784 | 2 | 3,022 14,827 | 219 | 215 | 449 | re， $\begin{array}{r}3,453\end{array}$ |
| Ont．．．． | 12，232 | 2，865 | 6，836 | 892 | 14，734 | 674 | 2，501 | 1，934 | 42，668 |
| Man． | 6，999 | － | 5，899 | 1，025 | 9，126 | 306 | ${ }^{82}$ | 221 | 23，658 |
| Sask． | 6，915 | 54 | 2，015 | 366 | 12，462 | 59 | 1，170 | 239 | 23，280 |
| Alta． | 2，436 | 143 | 2，127 | 26 | 13，853 | ＋ 437 | $-^{58}$ | $\stackrel{207}{277}$ | 19,287 36,229 |
| B．C．．． | 6，900 | 93 | 6，852 | 6 | 21， 077 438 | 1，117 | 二 | 277 | 36,229 1,868 |
| Yukon． | 1，331 | 93 | － | $-_{1}$ | 4,538 3 |  | 二 | 266 | 1，898 |
| Totals | 41，543 | 3，160 | 24，520 | 2，318 | 96，963 | 2，814 | 4，026 | 3，782 | 179，126 |

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. Since January 1950, Indian affairs have been the responsibility of a Branch of the Department of Citizenship and Immigration.

The Indian Affairs Branch is composed of a headquarters staff at Ottawa, nine regional offices, and 89 field agencies. Specialists in such matters as education, economic development, resource management, social welfare, and engineering and construction are attached to headquarters and regional staffs. Liaison is maintained with the Indian and Northern Health Services 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. To this end, the Branch has brought into effect a wide range of programs in the fields of education, economic development, social welfare and community development. 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.

Education.-Nearly 46,600 Indians are enrolled in schools throughout the country. Approximately one third of these attend provincial and private schools, the cost of tuition being assumed by the Federal Government. As a further encouragement to the integration of Indian children in non-Indian schools, grants are made toward the cost of any new or supplementary construction required by their admission.

There are four types of Indian schools, all operated at the expense of the Government. On most reserves, day schools have been established to provide education for children who live at home. Residential schools are operated to care for orphaned children, children from broken homes, and for those who, because of isolation or other reasons, are unable to attend day schools. Seasonal schools have been established for the children of migratory families, particularly in the Far North. The fourth type of school gives instruction to children confined to hospital.

All standard classroom supplies and authorized textbooks are provided in Indian schools. Financial assistance for pupils attending non-Indian schools varies from payment of tuition fees for some to full maintenance for others. Promising senior students are awarded scholarships to attend university or vocational school and scholarships are given to those who show promise in the arts.

## 35.-Enrolment of Indian Pupils classified by Type of School and by Grade, School Year 1961-62

| Classification | Grade |  |  |  | Technical | Professional | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Kindergarten | 1-6 | 7-8 | 9-13 |  |  |  |
|  | No. | No. | No. | No. | No. | No. | No. |
| Day school ${ }^{\text {d }}$. | 2,595 | 16,250 | 1,969 | 82 | - | - | 20,896 |
| Residential school boarders attending classes at residential schools. | 466 | 6,293 | 1,127 | 505 | - | - | 8,391 |
| Day pupils attending classes at residential schools.. | 342 | 1,713 | 265 | 9 | - | - | 2,329 |
| Seasonal school.................................... | ... | ... | ... | ... | $\cdots$ | $\ldots$ | 512 |
| Hospital school.................................... | ${ }_{157}$ | 8,490 | 2,337 | $2 \dddot{785}$ | 354 | 118 | [14, ${ }_{2412}$ |
| Totals. | 3,560 | 32,746 | 5,698 | 3,381 | 354 | 118 | 46,596 ${ }^{2}$ |

[^48]${ }^{2}$ Excludes 1,616 children

36．－Indian Pupils Attending Provincial，Private or Territorial Schools，classified by Grade or Type of Training，by Province，School Year 1961－62

| Grade or Type of Training | P．E．I． | N．S． | N．B． | Que． | Ont． | Man． | Sask． | Alta． | B．C． | N．W．T． | Yukon | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No． | No． | No． | No． | No． | No． | No． | No． | No． | No． | No． | No． |
| Pre－Grade 1．．．．．．．． | － | 12 | － | 21 | 28 | 39 | 22 | － | 35 | － | － | 157 |
| Grade－ |  |  | 3 | 106 | 49 | 155 | 234 | 141 | 610 | 2 |  |  |
|  | － | ${ }_{21}^{12}$ | 2 | 95 | 208 | 130 | 193 | 131 | 486 | 204 | 22 | 1,858 1,492 |
| 3. | 1 | 13 | 3 | 110 | 219 | 107 | 160 | 123 | 421 | 140 | 20 | 1，317 |
|  | 1 | 19 | 6 | 107 | 227 | 83 | 158 | 132 | 393 | 138 | 19 | 1，283 |
| 5. | 1 | 27 | 11 | 126 | 251 | 105 | 130 | 123 | 389 | 98 | 49 | 1，310 |
|  | － | 23 | 18 | 150 | 254 | 102 | 98 | 140 | 326 | 78 | 41 | 1，230 |
|  | 1 | 31 | 25 | 152 | 246 | 101 | 80 | 125 | 443 | 38 | 43 | 1，285 |
| 8. | － | 14 | 19 | 208 | 176 | 81 | 69 | 78 | 344 | 28 | 35 | 1，052 |
| 9. | 4 | 30 | 21 | 105 | 414 | 69 | 131 | 144 | 395 | 18 | 18 | 1，349 |
| 10. | － | 11 | 8 | 60 | 204 | 56 | 55 | 36 | 259 | 5 | 11 | 705 |
| 11. | － | 17 | 8 | 34 | 107 | 17 | 34 | 32 | 167 | 3 | 4 | 423 |
| 12．．．．．．．．．．．．．．．． | － | 9 | 5 | 7 | 72 | 6 | 29 | 36 | 107 | 4 | 3 | 278 |
| 13．．．．．．．．．．．．．．．．． | － | － | － | － | 20 | － | － | － | 10 | － | － | 30 |
| University－ |  |  |  |  |  |  | 2 | 1 |  |  |  | 25 |
| 1st year．．．．．．．．．．．． | 二 | 1 | 1 | 10 3 | 1 | －2 | － | － | 1 | － | ＿ | 9 |
| 3 rd year．．．．．．．．．．．． | 1 | 1 | 1 | 3 | 2 | － | ， | － | － | － |  | 8 |
| 4th year．．．．．．．．．．． | － | － | － | 3 | － | － | 1 | － | 1 | － |  | 4 |
| Law ．．．．．．．．．．．．．．． | － | 二 | 二 | －1 | 1 | － | － | － | 1 | － | － | 2 |
| Teacher training． | － | － | － | 8 | 10 | 1 | 3 | － | 3 | － | － | 25 |
| Nurse training．．．．．．． | － | 2 | － | 1 | 7 | 2 | 4 | 2 | 2 | － |  | 20 |
| Nurses＇aide．．．．．．．．． | － | － | 3 | 1 | 3 | 6 | 3 | 5 | 11 | 15 | － | 23 |
| Commercial． | － | 16 | ${ }^{3}$ | 14 | ${ }^{19}$ | 12 | ${ }_{24}$ | 8 | 26 | 11 |  | 155 |
| Trades．．．．．．．．．．． | 1 | 16 1 | 14 | 14 2 | 12 | 10 | $\begin{array}{r}24 \\ 4 \\ \hline\end{array}$ | 1 | 4 | 11 2 |  | ＋36 |
| Other．．．．．． | － | － | － | － | 44 | 13 | 5 | 5 | 18 | － | － | 85 |
| Totals． | 10 | 266 | 149 | 1，330 | 2，801 | 1，097 | 1，450 | 1，273 | 4，470 | 1，104 | 291 | 14，241 |
| Not graded． | － | 71 | － | 277 | 968 | 7 | 63 | 43 | 187 |  | － | 1，616 |

Economic Development．－With a view to providing for all Indians the opportunity to earn satisfactory incomes，the Indian Affairs Branch has instituted a number of programs in the field of economic development．These programs give special attention to the place－ ment of Indians in employment；the promotion of agriculture and stock－raising on reserves； the fostering of Indian enterprise and the provision of loans；home industries and handi－ crafts；the management of fur，fish and wildlife resources；and assistance to Indians in developing other resources on or within access of the reserves．

The Employment Placement Program has the objective of developing job opportun－ ities for Indians and promoting their employment in a wider range of occupations．Place－ ment Officers are attached to Branch Regional Offices at Vancouver，Edmonton，Saskatoon， Winnipeg，North Bay，Toronto，Quebec，Amherst and Fort Smith，and are also located at The Pas，London，Calgary and Whitehorse．In addition，the facilities of the National Employment Service are utilized in placing Indians in both urban and rural employment．

Under the fur resources rehabilitation and management program，which has been carried on for some time in co－operation with various provinces，beaver production in Saskatchewan，Manitoba，Ontario and Quebec has risen steadily．Total Indian income from trapping in the 1961－62 season was approximately $\$ 6,750,000$ ．

Commercial fishing by Indians is also of considerable economic importance．In recent years，the lake catch has been valued at approximately $\$ 1,000,000$ per annum and coastal fishing at about $\$ 4,000,000$ per annum，with further yearly earnings of about $\$ 750,000$ from the packing，canning and processing of fish products．

A $\$ 1,000,000$ revolving fund has been set aside by the Government as a source of credit for reserve Indians. During the year ended Mar. 31, 1962, 120 loans totalling $\$ 177,029$ were approved, most of them for agricultural purposes.

Welfare.-A public assistance program is provided by the Indian Affairs Branch to assist Indians to realize an adequate standard of living. Training and selected placement facilities are available in the field of rehabilitation for the physically and socially handicapped. Indians are technically subject to provincial law which governs all aspects of child welfare but there is wide variation in the extent to which such legislation is enforced. However, the policy followed is designed to take advantage, on an increasing basis, of the co-operation and assistance of accredited provincial child-caring agencies. Housing is another important feature of Indian welfare services. In each of the three years ended Mar. 31, 1960-62, more than 1,200 houses were built on Indian reserves and, in the year ended Mar. 31, 1962, approximately 3,000 houses were repaired.
37.-Housing on Indian Reserves, by Region, Year Ended Mar. 31, 1962

| Region | Houses |  |  | Expenditures |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Started before, Completed during Year | Started and Completed during Year | Started during Year but Not Completed | From <br> Welfare Appropriation | From <br> Band <br> Funds | From <br> VLA <br> Grant | Personal Contributions | Total |
|  | No. | No. | No. | \$ | \$ | \$ | \$ | \$ |
| Maritime Provinces....... | 8 | 22 | 7 | 77,766 | - | 4,640 | 12,800 | 95,206 |
| Quebec................... | 4 | 92 | 40 | 276,701 | 300 | 1,257 | 120,353 | 398,611 |
| Ontario- |  |  |  |  |  |  |  |  |
| Southern................ | 35 | 56 | 29 | 119,146 | 88,552 | 4,495 | 67,321 | 279,513 |
| Northern............... | 19 | 104 | 15 | 282,832 | 57,069 | 2,182 | 52,460 | 394,544 |
| Manitoba. | 31 | 179 | 4 | 287,094 | 9,409 | 4,368 | 80,531 | 381,402 |
| Saskatchewan............. | 22 | 210 | 44 | 383,702 | 87,911 | 1,512 | 60,542 | 533,667 |
| Alberta................... | 23 | 172 | 37 | 248,423 | 577,194 | - | 32,955 | 858,572 |
| British Columbia and Yukon Territory. $\qquad$ | 51 | 185 | 122 | 451,760 | 169,298 | - | 214,510 | 835,568 |
| Northwest TerritoriesDistrict of Mackenzie. . | 28 | 25 | 10 | 127,340 | - | - | 20,357 | 147,697 |
| Canada.. | 221 | 1,045 | 308 | 2,254,763 | 989,733 | 18,455 | 661,829 | 3,924,780 |

Every effort is made to reach agreement with provincial governments which will make possible the application of normal provincial welfare services and benefits on reserves. Several bands in Ontario now participate in the Ontario General Welfare Assistance Act. Throughout Canada, Indians are paid family allowances, old age security, old age assistance, blind persons' allowances and disabled persons' allowances, and in the Provinces of Ontario and Quebec mothers' allowances are available to needy Indian mothers.

Community Development.-Community development on Indian reserves is progressing under the auspices of the Indian Affairs Branch. Leadership training courses are conducted to help Indians to identify and understand community problems and to become familiar with accepted methods of community organization. Indian women are encouraged to form Homemakers' Clubs which are patterned after rural women's institutes. Counselling as well as material aid is provided. Indian band councils are encouraged to exercise, to the fullest extent, the powers and responsibilities granted to them under the Indian Act.

In recent years, the Indian Affairs Branch has had the co-operation and assistance of university extension departments, provincial education authorities and various health and welfare organizations in the conduct of community development programs. An intensive program in community action by Indians on all reserves on Cape Breton Island, N.S., and certain reserves in New Brunswick has been directed by the Extension Department of St. Francis Xavier University. Leadership training courses for Indians have been held annually under the auspices of the Community Welfare Planning Council, Winnipeg, Man. Universities are assisting in planning and developing programs for Indian groups in Alberta, British Columbia, the Maritimes, Ontario and Quebec. In Ontario, the Community Programs Branch of the provincial Department of Education has planned and organized a special leadership training course for Indian band chiefs and councillors.

## The Eskimos*

While many still hold to the traditional way of life, an ever-increasing number of Canada's 11,835 Eskimos living in the Northwest Territories, northern Quebec and Labrador are making the change from a nomadic existence to a pattern of regular wage employment. Continued northern development, coupled with a decrease in some types of game, is settling the Eskimo people more and more in modern communities with school, health and transportation facilities, and wage employment opportunities. The Government of Canada, through the Department of Northern Affairs and National Resources and other agencies, is helping in this transition and adjustment by providing such forms of assistance as education, welfare services, vocational training and economic development programs.

One of the prime aids in easing this transitional period and preparing for the future is education. Close to 2,400 Eskimo youngsters now spend the school term at desks; more than half of them live in student residences. In 1958 only 17 p.c. of Eskimo children were in school; now, with the improvement of facilities and despite the increase in population, almost 66 p.c. are in school. Because of the relative newness of the school system the majority of these children are in the junior grades but increasing awareness of the value of education is keeping them in schools longer. A program approved at the January 1963 session of the Northwest Territories Council provides for grants and loans to finance university education for Eskimo, Indian and white children, without distinction.

While a basic education will open doors to employment for many, it is not the only avenue provided. Vocational training classes offer opportunities for employment in carpentry, electronics, mining, automobile and diesel mechanics, and domestic science. On-the-job learning is showing adult members of the Eskimo community how to make a better living in a changing world, and how to better use traditional skills and natural resources.

One of the most encouraging developments in the Arctic has been the steadily improving success of Eskimo co-operatives, formed on the basis of pooled labour and shared harvest, a formula long known to the Eskimos. Sixteen co-operatives in the Northwest Territories and northern Quebec are now engaged in a variety of operations based on commercial fishing, handicraft production, carving and graphic arts, tourism and the operation of retail stores. During 1962, five Eskimo fishing co-operatives were catching, processing and shipping Arctic char to markets in Southern Canada and the United States; the first shipment of char was sent to Britain in mid-year. Soapstone carvings and graphic arts, maintained at a standard of excellence, continued to bring the Eskimos, and Canada too, world-wide recognition. In 1962, approximately $\$ 100,000$ worth of graphic arts was sold by the Cape Dorset Co-operative alone. An increasing number of handicrafts, ranging from small sealskin animals and toys to delicately embroidered duffel coats, were produced to satisfy the growing market in Southern Canada. Although not attracting as much attention as the graphic arts or carvings, co-operatives based on logging, boat building and sealing also provided valuable business experience, employment and wages.

[^49]In addition to providing business experience and work opportunities, vital for a feeling of independence, the co-operatives also brought in more than $\$ 200,000$ cash to northern communities during 1961. This amount was considerably higher, if not doubled, in 1962. Through participation in rehabilitation projects which produce and market a wide variety of goods and services, an additional $\$ 175,000$ was earned by people in the North during 1962.

The increasing number of settled wage earners has created a need for permanent homes. Through a program of loans and grants initiated by the Department of Northern Affairs and National Resources, more and more Eskimos now own their homes. A $\$ 1,000$ subsidy covers part of the cost; 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 constructing his house helps to keep the cost to a minimum. All financial arrangements encourage the Eskimo to remain self-reliant and independent under changing economic conditions. At Frobisher Bay, a group of 15 families has established a co-operative which aims to provide all members with adequate housing. Other housing is provided as a relief measure to help those who, through physical or other disability, cannot afford to pay for their own shelter.

As Canadian citizens, the Eskimos receive the same social benefits as those who live farther south-family allowances, old age security, old age assistance, blind and disabled persons' allowances. The Federal Government also operates family and child welfare services and a rehabilitation and medical social service program designed to strengthen family and community life. Tuberculosis has not been eradicated but the incidence of the disease is rapidly decreasing. While the Eskimo infant mortality rate remains high compared with the all-Canada rate, it, too, is dropping with the improvement of health facilities and housing.

In addition to those Eskimos self-employed as members of co-operatives, there are Eskimos with employment in a variety of fields. They work as civil servants and as DEW-line employees. Eskimos are clergymen, miners, carpenters, mechanics, diesel and tractor operators and oil drillers. An Eskimo is manager of the CBC radio station at Inuvik and an Eskimo girl produces Eskimo-language programs for the CBC Northern Service. Another Eskimo girl, employed by the Welfare Division of the Northern Administration Branch, edits the Eskimo-language publication Inuktitut. Other Eskimo women work as interpreters, waitresses, nursing assistants, secretaries and clerks-in southern as well as northern communities.

With the continuing development of Northern Canada and the many changes it is bringing, more responsibility and opportunity have come to the Eskimos. In June 1962, for the first time, Eskimos of voting age in the Franklin and Keewatin Districts were able to cast their ballots in a federal election and returns showed that a majority of the Eskimos had taken advantage of the opportunity. In connection with the proposed division of the Northwest Territories, the Eskimo and other residents of the Eastern Arctic were asked to select the name of the new territory to be created. Ballots were cast and the name decided-Nunassiaq-The Beautiful Land.

For countless years the Eskimo has survived in a land that many have called harsh and unyielding. Circumstances have changed, however, and both are now on the threshold of even greater change. Adapting to a new environment, learning new trades and skills, Canada's hardy and intelligent Eskimos will play a more important role in the development of the country's last and most challenging frontier.

## Section 4.-Statistics of World Population

World population figures given in Table 38 are from the United Nations Population and Vital Statistics Report for October 1962 and, except as otherwise noted, are mid-year estimates for 1961. The area figures are from the United Nations Statistical Yearbook, 1961.

Estimated Population of the World by Continents.-The statement below presents adjusted estimates of the 1961 mid-year population of the world by continental divisions. These aggregates do not coincide exactly with the sum of the figures for individual countries and territories because they include, in addition, adjustments for overand under-enumeration, over-estimation, data for categories of population not regularly included in the official figures, and approximations for those countries that have not provided official 1961 data. The estimates are as follows:-

| Continental Division | Number |
| :---: | :---: |
|  | '000 |
| Africa. | 261,000 |
| North America. | 273,000 |
| South America. | 148,000 |
| Asia (includes Asiatic Turkey). | 1,714,000 |
| Europe (includes European Turkey). | 430,000 |
| Oceania (includes Hawaii). | 17,000 |
| Union of Soviet Socialist Republics (Asia and | 218,000 |
| World Total. | 3,061,000 |
| Commonwealth countries (at Mar. 15, 1963). | 733,531 |

## 38.-Areas and Populations of the Countries or Areas of the World, 1961

Note.-Status of independency or dependency is as at Mar. 15, 1963. Members of the Commonwealth and the Territories for which the British or Commonwealth members are responsible (at Mar. 15, 1963) are indicated with an asterisk ( ${ }^{*}$ ).

| Continent and Country | Area | Population |
| :---: | :---: | :---: |
|  | sq. miles | '000 |
| Africa |  |  |
| Independent States |  |  |
| Algeria. | 919,593 | 11,240 |
| Burundi ${ }^{\text {i }}$ |  | 2,2342 |
| Cameroon. | 183,569 | 4,0972 |
| Central African Republic. | 238,224 | 1,227 |
| Congo (Brazzaville). | 132,047 | 2,680 ${ }^{900}$ |
| Congo (Leopoldville).... | 905,565 | 14,450 |
| Dahomey............. | 44,696 | 2,0502 |
| Ethiopia.............. | 457,267 | 20,000 ${ }^{2}$ |
| Gabon............ | 103,089 | $448{ }^{2}$ |
| *Ghana.. | 91, 844 | 6,943 |
| Guinea. | 94,926 | $3,00{ }^{2}$ |
| Ivory Coast. | 124,503 | 3,300 |
| Liberia........... | 43,000 679,360 | 1,290 ${ }^{1}$ |
| Madagascar. | 227, 800 | 5,577 |
| Mali.... | 461,874 | 4,1002 |
| Mauritania | 419, 230 | $791{ }^{7}$ |
| Morocco. | 171,305 | 11,925 |
| *Niger ${ }^{\text {N }}$.. | 458,995 356,669 | 35,752 |
| *Nigeria. | 356,669 | - ${ }_{2,695}$ |
| Senegal. | $\stackrel{76124}{ }$ | 2,980 |
| *Sierra Leone. . | 27,925 | 2,450 |
| Somalia....... | 246, 202 | 2,030 |
| South Africa, excl. Walvis Bay | 472,359 | 16,236 12 |
| Sudan... | 967,501 361,800 | 12,109 9 |
| *Tanganyika. . | 361,800 21,853 | 9,399 1,480 |
| Togo.... | 48,332 | 4,254 |
| * Uganda. | 93,981 | 6,845 |
| United Arab Republic (former Egyptian region). | 386,101 | 26,578 |
| Upper Volta. ................ | 105,869 | 4,400 ${ }^{2}$ |

[^50]38.-Areas and Populations of the Countries or Areas of the World, 1961-continued

| Continent and Country | Area | Population |
| :---: | :---: | :---: |
|  | sq. miles | '000 |
| Africa-concluded |  |  |
| Britain- Territories and Dependencles |  |  |
| *Basutoland. | 11,716 | 697 |
| * Bechuanaland. | 275,000 | 340 |
| *Gambia.. | 4,003 | 290 |
| *Kenya . . . . . | 224,960 | 7,287 |
| *Mauritius, incl. dependencies. | 420 | ${ }^{676}$ |
| *Rhodesia and Nyasaland, Federation of | 484,529 | 8,520 |
| Northern Rhodesia. | 288,130 | 8,480 |
| Nyasaland....... | 46,066 | 2,890 |
| - Southern Rhodesia. | 150,383 | 3,150 |
| *St. Helens, excl. dependencies. | 47 | 5 |
| Ascension. . . . . . . | 34 |  |
| Tristan da Cunha and other dependencies. | 81 |  |
| *Seychelles....... | 156 | 43 |
| *Swaziland....... | 6,704 | 266 |
| *Zanzibar and Pemba. | 1,020 | 315 |
| France- |  |  |
| Comoro Islands. | 838 | 185 |
| French Somaliland. | 8,494 | 68 |
| French Southern and Antarctic Territories | 2,918 |  |
| Réunion............. | 969 | 346 |
| Portugal- |  |  |
| Angola.. | 481,352 | 4,870 |
| Cape Verde Islands. | 1,557 | 205 |
| Mozambique.. | 302,329 | 6,650 |
| Portuguese Guinea. | 13,948 | 550 |
| São Tomé and Principe.... | 372 | 64 |
| Spain- |  |  |
|  | 579 | 50 |
| Spanish Equatorial Region | 10,831 | 249 |
| Spanish North Africa....... | -82 | 155 |
| Spanish Sahara....... | 102,703 | 25 |
| Former Mandated Territory(South Africa) |  |  |
| South West Africa, incl. Walvis Bay . ........................................... | 318,261 | 534 |
| America, North |  |  |
| Independent States |  |  |
| *Canada. | 3,851,809 | 18,269 |
| Costa Rica. | 19,575 | 1,225 |
| Cuba. | 44,218 | 6,933 |
| Dominican Republic. | 18,816 | 3,098 |
| El Salvador. | 8,260 | 2,5012 |
| Guatemals. | 42,042 | 3,886 |
| Haiti..... | 10,714 | 4,249 |
| Honduras. | 43,277 | 1,892 |
| *Jamaica. | 4,411 | 1,638 |
| Mexico. | 760,375 | 36,091 |
| Nicaragua. | 57,143 | 1,526 |
| Panama........... | 28,753 | 1,084 |
| *Trinidad and Tobago..... | - 1,980 | 859 |
| United States of America. | 3,615,214 | 183,742 |
| Territories and Dependencies |  |  |
| Britain- |  |  |
| * Antigua. | 171 | 55 |
| *Bahama Islands. | 4,400 | 108 |
| *Barbados. . . . . | 166 | 236 |

For footnotes, see end of table, p. 197.
38.-Areas and Populations of the Countries or Areas of the World, 1961-continued


For footnotes, see end of table, p. 197.
38.-Areas and Populations of the Countries or Areas of the World, 1961-continued

| Continent and Country | Area | Population |
| :---: | :---: | :---: |
|  | sq. miles | '000 |
| Asia-concluded <br> Independent States-concluded |  |  |
|  |  |  |
| Cambodia. | 66,607 | 4,9522 |
| * Ceylon.. | 25,332 | 10,167 |
| China (mainland). | 3,691,512 | 646,5302 |
| China (Taiwan and Pescadores) | 13,885 | 10,971 ${ }^{7}$ |
| *Cyprus....................... | - 3,572 | 581 |
| *India..... | 1,173,832 | 441,4698 |
| Indonesia. | 575, 894 | 95,655 |
| Iran... | 636,294 | 20,678 |
| Iraq.. | 171,600 | 7,263 |
| Israel... | 7,992 | 2,183 |
| Japan.... | 142,726 37,301 | 94,050 |
| Korea.. | 85,286 | 33,805 |
| North Kores. | 47,255 | 8,430 |
| Republic of Korea. | 98,051 | 25,975 |
| Kuwait. . | 6,000 | -322 |
| Laos..... | 91,429 | 1,850 |
| Lebanon.... | 4,015 | 1,6462 |
| *Malaya, Federation of | 50,700 | 7,137 |
| Mongolis......... | 592,665 | 89 968 |
| Muscat and Oman. | 82,000 | 565 |
| Nepal........... | 54,362 | 9,388 |
| *Pakistan, excl. Kashmir-Jammu. | 364,737 | 94,547 |
| Philippines.. | 115,707 | 28,727 |
| Qatar. | 8,500 | -55 |
| Saudi Arabia. | 617,762 | 6,0362 |
| Sikkim. | 2,744 | 162 |
| Syria..... | 71,228 | 4,930 |
| Thailand..... | 198,456 | 27,181 |
| Trucial Oman. | 32,278 | 86 |
| Turkey (Asia and Europe) | 301,381 | 28,6022 |
| Viet NamNorth Viet Nam. | 59,934 |  |
| Republic of Viet Nam | 65,948 | 16,690 |
| Yemen.......... | 75, 290 | 5,000 |
| Britain- Territories and Deprndencles |  |  |
|  |  |  |
| Aden Colony. | 75 | 210 |
| Aden Protectorate. | 111,000 | 1,000 |
| *Brunei.. | 2,226 | 1,87 |
| *Hong Kong.... | 398 | 3,178 |
| *North Borneo. | 29,388 | 460 |
| *Sarawak...... | 48,342 | 760 |
| *Singapore. | 224 | 1,687 |
| Netherlands- <br> West New Guinea (West Irian) | 160,618 | 750 |
| Portugal - |  |  |
| Macau.. | 6 |  |
| Portuguese India | 1,619 | 169 |
| Portuguese Timor... | 1,763 | 626 520 |
| $\underset{\text { (Britain) }}{\text { Former Manditory }}$ |  |  |
| Palestine...... Gaza Strip. | 10,459 78 | $\begin{gathered} 1,912^{2} \\ 368 \end{gathered}$ |
| Mintary Government <br> (United States) |  |  |
| Bonin Islands.. |  |  |
| Ryukyu Islands....................... | 848 | 889 |

Ryukyu Islands.
For footnotes, see end of table, p. 197.
38.-Areas and Populations of the Countries or Areas of the World, 1961-continued


For footnotes, see end of table.
38.-Areas and Populations of the Countries or Areas of the World, 1961-concluded

| Continent and Country | Ares | Population |
| :---: | :---: | :---: |
|  | sq. miles | '000 |
| Oceania-concluded |  |  |
| Territories and Dependencies-concluded |  |  |
| Britain- |  |  |
| *British Solomon Islands. | 11,500 | 127 |
|  | 7,055 | 407 |
| * Gilbert and Ellice Islands . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 349 | \% 47 |
| *Titcairn............................................................................................ | 269 | ${ }^{3} 65$ |
| France- |  |  |
| French Polynesia. | 1,544 | 76 |
| New Caledonia and dependencies.............................................. | 7,336 | 78 |
| New Zealand- |  |  |
| *Cook Islands................................................................... | 90 | 18 |
| *Niue....................................................................... | 100 | 5 |
| *Tokelau Islands. | 4 | 2 |
| United States- |  |  |
| American Samoa. | 76 | 20 |
| Guam.. | 212 | 68 |
| Trust Territories |  |  |
| *Nauru (Aust., N.Z., and Br. Adm.)................................................... | 8 | ${ }^{5}$ |
| *New Guinea (Aust. Adm.)......................................................... | 93,000 | 1,449 |
| Pacific Islands (U.S. Adm.).. | 687 | 79 |
| Condominiums |  |  |
| *Canton and Enderbury (Anglo-American). <br> ${ }^{*}$ New Hebrides (Anglo-French). | 27 5,700 | 361 |
| Union of Soviet Socialist Republics |  |  |
| Union of Soviet Socialist Republics............................................. | 8,649,512 | 218,000 |

${ }^{1}$ Formerly part of Ruands-Urundi, a UN trust territory under Belgian administration declared independent July 1, 1962. ${ }^{2}$ Latest official estimate. ${ }^{3}$ Fewer than 500 persons. ${ }^{4}$ Including armed forces overseas. ${ }^{5}$ Excluding Indian jungle population. ${ }^{6}$ Excluding Indian and Negro population living in tribes. ${ }^{7}$ Excluding armed forces and foreigners. ${ }^{8}$ Including the population of Kashmir-Jammu, the final status of which has not yet been determined. ${ }^{9}$ Less than one square mile.
${ }^{10}$ Inhabited only in winter season; included also in the population of Norway.

# CHAPTER IV.-IMMIGRATION AND CITIZENSHIP 

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing $p .1$ of this volume.

## PART I.-IMMIGRATION AND EMIGRATION*

The history of immigration and the Immigration Act and Regulations 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. 176-178 of the 1959 edition.

## Section 1.-Immigration Policy and Administration

Since the end of the Second World War it has been the policy of the Government of Canada to stimulate the growth of the population by selective immigration. Efforts are made to choose immigrants of prospective adaptability to the Canadian way of life and to admit them at such times and in such numbers as employment conditions warrant.

Federal immigration policy is governed by the provisions of the Immigration Act and Regulations. With effect from Feb. 1, 1962, the Regulations, which include the provision for permanent admission to Canada, were revised to place primary stress on education, training and skills as the main conditions of admissibility, regardless of the nationality or country of origin of the applicant. Persons qualifying on these grounds who have sufficient means to establish themselves in Canada or are coming forward to approved employment, or with suitable plans for self-establishment in Canada, are admissible. This means that any suitably qualified person from any part of the world can be considered for admission to Canada entirely on his own merit, without regard to his race, colour, national origin or the country from which he comes. Similarly, if a person has the requisite skills and potential ability to establish himself in Canada, he or she may also be sponsored by a parent, parent-in-law or fiancé(e) already in Canada, provided the sponsor is a Canadian citizen. The Canadian sponsor must be able to provide care and maintenance for such immigrant until the latter is able to look after himself. The sponsorship at the Canadian end takes the place of the requirement that the immigrant himself must have sufficient means or, alternatively, firm employment or self-employment opportunities. All immigrants must be in good health and of good character and be in possession of such documentation as the Regulations prescribe.

[^51]Other classes of admissible immigrants consist of persons in the close-relative and immediate-dependant category who may be sponsored by Canadian citizens or by persons other than Canadian citizens who have been legally admitted to Canada for permanent residence and wish to bring forward a mother, father, husband, wife, intended wife, grandparent or an unmarried minor child and who are able to receive and care for them. This provision is of universal application; its principal effect is to improve the position of persons from countries which have received less favoured treatment in the past, by including grandparents and fiancées in the admissible categories of dependants and eliminating age limits with respect to fathers and mothers. The special provisions under the former Regulations regarding the admissibility of other classes of relatives, such as brothers and sisters, adult sons and daughters, orphan nieces, etc., which applied to certain countries, remain unchanged. The new Regulations make no reference to special agreements in effect with India, Pakistan and Ceylon. The enlarged provisions of the new Regulations bring directly into the admissible classes those qualified but unsponsored immigrants from these three countries who formerly were covered by the agreements and make it unnecessary to have a special regulation to provide for them.

The Immigration Branch of the Department of Citizenship and Immigration administers the Immigration Act and Regulations. Twenty-eight visa offices are located abroad at London, Liverpool, Leeds, Bristol, Glasgow, Belfast, Dublin, Paris, Brussels, Berne, The Hague, Copenhagen, Cologne, Berlin, Hamburg, Munich, Stuttgart, Vienna, Oslo, Stockholm, Helsinki, Lisbon, Rome, Athens, Cairo, Tel Aviv, New Delhi and Hong Kong. Four offices in the United States-at New York, Chicago, San Francisco and Denverfurnish information and counselling but do not issue visas. Personnel at all posts are kept in close touch with economic conditions in Canada and thus are able to advise immigrants regarding prospects for successful settlement. Examination of immigrants and visitors is carried out at 348 ports of entry on the Canadian coasts, at points along the International Boundary, and at certain airports.

A primary objective of the immigration program is satisfactory settlement. The Federal Government assists immigrants in establishing themselves in the Canadian community through the work of the specialized settlement officers of the Immigration Branch, the Canadian Citizenship and Canadian Citizenship Registration Branches and other government agencies, and co-operates closely with several voluntary agencies having the same objective.

## Section 2.-Immigration Statistics

Postwar Immigration.-The extent of immigration to Canada 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 from six to eighteen 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.

Since the end of World War II there have been wide annual fluctuations in immigration to Canada caused mainly by economic and political factors. Many of the persons who arrived in 1946 and 1947 were the wives and children of Canadian service men and their numbers were dictated by the availability of shipping. In 1948, as more shipping became available, the number of immigrants doubled. In addition to the large movement
from the British Isles, thousands of displaced persons were admitted and Germans and Italians began to come forward in appreciable numbers after having been removed from the enemy alien category. As the high level of immediate postwar economic activity levelled off, there was a drop of 30,000 in the number of immigrants entering in 1949 compared with 1948, and a further drop of 21,000 in 1950. Then the outbreak of war in Korea created a new stimulus to industry and caused shortages of labour; at the same time fear of war in Europe made Canada seem a desirable haven. Thus in 1951 immigration increased nearly threefold and remained in excess of 150,000 for the following three years. Very significant numbers of Germans and Italians were admitted and the gap between them and the British Isles group was narrowed. Another minor economic setback in 1954 caused immigration to fall in 1955 by some 45,000 but, with the return of better times in North America and the deterioration of the political situation in Europe, immigration again rose by 55,000 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. Canada'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. In 1962 the total number of immigrants increased slightly to 74,586 and immigrants from the British Isles again headed all groups. 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.

Immigrants coming from the British Isles during the period 1946 to 1962, inclusive, numbered 608,117 and represented 28.3 p.c. of the total immigration to Canada in that period. Other large groups came from: Italy, 287,612 representing 13.4 p.c. of the total; Germany, 246,553 representing 11.4 p.c.; the Netherlands, 150,742 representing 7 p.c.; the United States, 168,284 representing 7.8 p.c.; and Poland, 93,827 representing 4.4 p.c.

Thus, in each postwar year up to and including 1957 and in the year 1962, the British Isles group was the largest, ranging from a low of 12,695 in 1950 to a high of 108,989 in 1957 and from 1958 to 1961 immigrants from Italy headed all groups. Immigrants from the United States formed the second largest group in 1946 and 1947, from Poland in 1948, 1949 and 1950, from Germany from 1951 to 1954, from Italy in 1955, 1956 and 1962, from Hungary in 1957, and from the British Isles from 1958 to 1961. During the whole postwar period, immigration from the United States remained relatively constant, ranging from a low of 7,393 in 1948 to a high of 11,643 in 1962; the annual average for the period was 9,899 .

Total immigration to Canada for the years 1946-62, inclusive, was 2,151,505. The yearly totals for this period are shown in Table 1, together with annual figures back to 1913, the peak year of immigration into Canada.

## 1.-Immigrant Arrivals, 1913-62

Note.-Figures for 1852-93 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 | Arrivals | Year | Arrivals |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. |  | No. |  | No. |  | No. |  | No. |
| 1913. | 400,870 | 1923. | 133,729 | 1933. | 14,382 | 1943. | 8,504 | 1953. | 168,868 |
| 1914. | 150,484 | 1924. | 124,164 | 1934. | 12,476 | 1944. | 12,801 | 1954. | 154,227 |
| 1915. | 36,665 | 1925. | 84,907 | 1935. | 11,277 | 1945. | 22,722 | 1955. | 109,946 |
| 1916. | 55, 914 | 1926. | 135,982 | 1936. | 11,643 | 1946. | 71,719 | 1956. | 164,857 |
| 1917. | 72,910 | 1927. | 158,886 | 1937. | 15,101 | 1947. | 64,127 | 1957. | 282,164 |
| 1918. | 41,845 | 1928. | 166,783 | 1938. | 17,244 | 1948. | 125,414 | 1958. | 124,851 |
| 1919. | 107,698 | 1929.. | 164,993 | 1939. | 16,994 | 1949. | 95,217 | 1959. | 106,928 |
| 1920. | 138,824 | 1930. | 104,806 | 1940. | 11,324 | 1950 | 73,912 | 1960. | 104, 111 |
| 1921. | 91,728 | 1931. | 27,530 | 1941. | 9,329 | 1951. | 194,391 | 1961. | 71,689 |
| 1922. | 64,224 | 1932. | 20,591 | 1942. | 7,576 | 1952 | 164,498 | 1962. | 74,586 |

Immigrant Population.-The 1961 Census provided information on the number and distribution of immigrants in the population of Canada on the census date, June 1, 1961, by period of arrival; this is summarized by province in Table 2.
2.-Immigrant Population, by Period of Immigration and by Province, Census 1961

| Province or Territory | Before 1930 | 1931-40 | 1941-45 | 1946-50 | 1951-55 | 1956-61 ${ }^{1}$ | 1946-611 | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. | No. | No. |
| Newfoundland. | 1,356 | 339 | 338 | 1,317 | 1,230 | 1,689 | 4,236 | 6,269 |
| Prince Edward Island | 1,170 | 217 | 117 | 439 | , 452 | 1597 | 1,488 | 2,992 |
| Nova Scotia | 14,752 | 2,165 | 1,079 | 4,434 | 5,281 | 6,457 | 16,172 | 34,168 |
| New Brunswick | 10,496 | 1,451 | 886 | 3,184 | 2,887 | 4,379 | 10,450 | 23,283 |
| Quebec. | 121,164 | 14,202 | 5,321 | 38,452 | 87,873 | 121,437 | 247,762 | 388,449 |
| Ontario. | 462,705 | 41,959 | 15,190 | 169,044 | 323,528 | 340,731 | 833,303 | 1,353,157 |
| Manitoba. | 101,758 | 4,259 | 1,483 | 15,925 | 21,134 | 25,439 | 62,498 | 169,998 |
| Saskatchewan | 116,192 | 3,170 | 1,034 | 8,124 | 9,497 | 11,372 | 28,993 | 149, 389 |
| Alberta. | 156,324 | 8,446 | 2,420 | 25,326 | 48,263 | 47,970 | 121,559 | 288,749 |
| British Columbia | 229,790 | 11,300 | 4,498 | 37,296 | 65,947 | 74,301 | 177,544 | 423,132 |
| Yukon Territory. | 867 | 81 | 42 | 265 | 626 | 833 | 1,724 | 2,714 |
| Northwest Territories. | 425 | 114 | 37 | 178 | 472 | 737 | 1,387 | 1,963 |
| Canada. | 1,216,999 | 87,703 | 32,445 | 303,984 | 567,190 | 635,942 | 1,507,116 | 2,844,263 |

${ }^{1}$ Up to the date of the Census, June 1, 1961.
The above table shows that $1,507,116$ immigrants reported that they had come to Canada between Jan. 1, 1946 and June 1, 1961. These postwar immigrants constituted about 75 p.c. of the total immigrant arrivals in Canada during the same period. According to the records of the Department of Citizenship and Immigration, 2,033,598 persons entered Canada as immigrants during this period. The difference between this total and the number of 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 (see pp. 209-210).

Analyses of Recent Immigration.-Analyses of the content of the immigration movement during the years 1960, 1961 and 1962 are given in Tables 3 to 10, and the numbers of persons deported from Canada for various reasons for the years 1953-62 in Table 11.

Table 3 classifies immigrant admissions by country of last permanent residence for 1960-62. During the three-year period, 19.5 p.c. of the immigration flow came from Britain and the Republic of Ireland, 55.3 p.c. from Continental Europe, 13.7 p.c. from the United States and 11.5 p.c. from all other countries.

## 3.-Immigrant Arrivals by Country of Last Permanent Residence, 1960-62

Nore.-Comparable figures from 1946 are given in the corresponding table of previous Year Books beginning with the 1951 edition; figures in less detail for 1939-45 appear in the 1950 edition, p. 186.

| Country | 1960 | 1961 | 1962 | Country | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. |  | No. | No. | No. |
| Commonwealth- |  |  |  | Europe-concluded |  |  |  |
| British Isles- |  |  |  | France....... | 2,944 | 2,330 | 2,674 |
| England.. | 13,570 | 8,499 | 10,950 | Germany | 10,774 | 6,231 | 5, 548 |
| Northern Ireland | 1,035 | 688 | 951 | Greece. | 4,856 | 3,766 | 3,741 |
| Scotland. | 4,561 | 2,578 | 3,505 | Hungary.................... | 507 | 287 | 450 |
| Wales. | 373 | 91 | 187 | Italy......................... | 20,681 | 14,161 | 13,641 |
| Lesser Isles | 46 | 14 | 10 | Netherlands | 5,429 | 1,787 | 1,555 |
| Totals, British Isles.... | 19,585 | 11,870 | 15,603 | Portugal.................. | 5,023 | 2,762 | 2,928 |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  | 1,115 | 475 | 594 |
| Australia. | 1,273 | 1,142 | 1,063 | Other | 711 | 329 | 412 |
| Hong Kong | 1,146 | 710 | 426 | Spain. | 526 | 476 | 362 |
| India...... | 505 | 568 | 529 | Switzerland. | 1,048 | 805 | 802 |
| Malta. | 468 | 187 | 362 | Yugoslavia. | 881 | 852 | 862 |
| New Zealand. | 384 | 290 | 321 | Other.. | 404 | 330 | 251 |
| Union of South Africa.. | 503 | ${ }^{1} 12$ | 1 |  |  |  |  |
| West Indies.......... | 1,168 | 1,126 | 1,480 | North America-2 |  |  | 134 |
| Other Commonwealth | 502 | 578 | 894 | Mexico.................... | 115 11,247 | 11,516 | 11,643 |
| Totals, Commonwealth. | 25,534 | 16,471 | 20,678 | Othe | 158 | 154 | 132 |
|  | 799 | 415 | 452 | South America ${ }^{2}$. | 1,666 | 1,138 | 636 |
| Republic of Ireland. |  |  |  | Middle East-2 |  |  |  |
| Africa ${ }^{2}$. | 154 | $838{ }^{3}$ | 6454 | Egypt........................ | 58 | 31 | 1,322 |
| Africa ${ }^{2}$. | 154 | 838 | 645 | Israel......................... | 1,532 | 652 | 558 |
| Asia ${ }^{2}$. | 395 | 270 | 642 | Lebanon.................... | 283 | 293 | 303 182 |
|  |  |  |  | Other. | 242 |  |  |
| Europe-2 | 2,0381,282964 | $\begin{array}{r} 1,131 \\ 1,013 \\ 339 \end{array}$ | $\begin{aligned} & 778 \\ & 706 \\ & 317 \end{aligned}$ | Other Countries............ | 77 | 113 | 37 |
| Austria..................... |  |  |  |  |  |  |  |
| Belgium................... |  |  |  |  | 104,111 | 71,689 | 74,586 |
|  |  |  |  |  |  | 7,680 |  |
| ${ }^{1}$ Included in Africa. <br> South Africa. <br> ${ }^{4}$ Includes | ${ }^{2}$ Excludes Commonwealth countries. |  |  |  | 531 from Republic of |  |  |

Of the immigrant arrivals in 1962, 28.9 p.c. were born in Commonwealth countries or in the Republic of Ireland compared with 23.8 p.c. in 1961 and 24.6 p.c. in 1960, 23.9 p.c. were born in Italy or Greece, 12.1 p.c. in the United States, 11.0 p.c. in Germany, France or the Netherlands, 5.5 p.c. in Poland or Yugoslavia, and 4.8 p.c. in Spain or Portugal.

## 4.-Birthplaces of Immigrant Arrivals, 1960-62

Nore.-Figures from 1942 are given in the corresponding table of previous Year Books beginning with the 1948-49 edition.

| Birthplace | 1960 | 1961 | 1962 | Birthplace | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. |  | No. | No. | No. |
| CommonwealthBritish Isles- |  |  |  | Europe-concluded Finland. | 1,007 | 355 | 354 |
| England.. | 11,635 | 7,471 | 9,462 | France. | 2,186 | 1,789 | 1,929 |
| Northern Ireland | 1,143 | 806 | 1,031 | Germany | 9,920 | 5,686 | 4,744 |
| Scotland | 4,756 | 2,845 | 3,787 | Greece. | 4,893 | 3,771 | 3,888 |
| Wales. | 496 | 273 | 399 | Hungary | 1,470 | 823 | 817 |
| Lesser Isles..............Totals, British Isles.... | 30 | 21 | 35 | Italy... | 20,758 | 14,373 | 13,904 |
|  | 18,060 | 11,416 | 14,714 | Norway. | 5,268 | 1,839 | 1,559 209 |
|  |  |  |  | Poland. | 3,552 | 2,774 | 2,028 |
|  |  |  |  | Portugal. | 5,099 | 2,846 | 3,048 |
| Australia. | 1,227 | 1,042 |  | Romania | 632609850 | 526 | 495 |
| Canada. | 754 | 788 | 899 | Spain...... |  | 646 | 615 |
| India... | 750 | 767202 | 899 762 |  | 850 |  |  |
| Malta. | 500 |  | 387 | Union of Soviet Socialist Republics ${ }^{3}$ | 9783,880684 | $\begin{array}{r} 570 \\ 2,378 \end{array}$ | $\begin{array}{r} 494 \\ 2,072 \end{array}$ |
| New Zealand. | 417 | 314 | 335 |  |  |  |  |
| Union of South Africa...... | 718 |  |  | Other...... |  | -458 | -377 |
| West Indies. | 1,199 | 1,215652 | 1,7191,058 | Other. |  |  |  |
| Other Commonwealth | 756 |  |  | Middle East-2 |  |  |  |
| Republic of Ireland.......... | 1,235 | 656 | 703 |  | 202 | 138 | 1,325 |
|  |  |  |  |  | 420 | 201 | 218 |
|  |  |  |  |  | 272 | 252 | 227 |
| Africa ${ }^{2}$. | 333 | 990 | 1,052 | Turkey | 291 | 29858 | 33583 |
|  |  |  |  | Oth |  |  |  |
| Asla- ${ }^{2}$ |  |  |  |  |  |  |  |
| China | 1,22916999 | 760125 | 594157 | North America-2 | $\begin{array}{r} 105 \\ 8,740 \\ 174 \end{array}$ | $\begin{array}{r} 97 \\ 9,015 \\ 183 \end{array}$ |  |
| Japan. |  |  |  | Mexico....... |  |  | $\begin{array}{r} 123 \\ 9,000 \\ 160 \end{array}$ |
| Other. |  | 176 | 391 | United States |  |  |  |
|  |  |  |  | Other |  |  |  |
| Europe- ${ }^{\text {2 }}$ |  |  |  |  |  |  |  |
| Austria.. | $\begin{array}{r} 1,077 \\ 899 \\ 355 \\ 1,130 \end{array}$ | $\begin{aligned} & 648 \\ & 788 \\ & 302 \\ & 488 \end{aligned}$ | $\begin{aligned} & 485 \\ & 582 \\ & 250 \\ & 615 \end{aligned}$ | South America ${ }^{2}$ <br> Grand Totals $\qquad$ | 578 | 450 | 291 |
| Belgium |  |  |  |  |  |  |  |
| Czechoslovakia |  |  |  |  | 104,1114 | 71,689 5 | 34,586 ${ }^{6}$ |

${ }^{1}$ Included in Africa. ${ }^{2}$ Excludes Commonwealth countries. ${ }^{3}$ In both Europe and Asia.
4 Includes 4 born at sea and 235 from other countries. ${ }^{5}$ Includes 2 born at sea and 104 from other countries.

- Includes 87 from other countries.

Immigrants of Continental European origin comprised 62.7 p.c. of the influx during 1962 and those of British origin made up 29.9 p.c. Proportions of Continental Europeans in 1961 and 1960 were 68.2 p.c. and 70.5 p.c., respectively, and of British origin 26.4 p.c. and 25.4 p.c. in the same years.

## 5.-Origins of Immigrant Arrivals, 1960-62

Nore.-Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1939 edition.

| Origin | 1960 | 1961 | 1962 | Origin | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. |  | No. | No. | No. |
| British- |  |  |  | Continental European- |  |  |  |
| English. | 15,601 | 11,218 | 13,038 | Albanian. | 33 | 45 | 28 |
| Scotish... | 4,012 6,130 | 3,132 | 3,492 | Austrian. | 1,001 | 641 | 506 |
| Welsh... | 6,130 692 | 4,157 456 | 5,118 621 | Belgian. | 776 47 | 733 30 | 546 18 |
| Totals, British | 26,435 | 18,963 | 22,269 | Czech and Slovak | 220 143 | 169 63 | 151 54 |
|  |  |  |  | Finnish. | 1,047 | 381 | 385 |

5.-Origins of Immigrant Arrivals, 1960-62-concluded

| Origin | 1960 | 1961 | 1962 | Origin | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. |  | No. | No. | No. |
| Continental Europeancontinued |  |  |  | Continental Europeanconcluded |  |  |  |
| French.................. | 2,940 | 2,479 | 2,974 | Yugoslavic ${ }^{1} . . . . . . . .$. | 3,572 | 2,323 | 2,044 |
| German... | 12,430 | 8,023 | 7,000 |  |  |  | 2,044 |
| Greek.... | 5,093 1,279 | 3,941 | 4,239 837 | Totals, Continental |  |  |  |
| Italian.... | 21,690 | 15,088 | 14,538 |  | 73,351 | 48,868 | 46,783 |
| Jewish. | 2,964 | 2,043 | 1,840 |  |  |  |  |
| Latvian. | 161 | 122 | 66 | Other- |  |  |  |
| Lithuanian... | 104 | 114 | 61 | Arabian.... |  |  | 67 |
| Luxemburger | 13 | 10 | 16 | Armenian. | 164 | 186 | 777 |
| Maltese. | 485 | 208 | 372 | Chinese. | 1,402 | 894 | 876 |
| Netherlander | 5,983 | 2,293 | 1,982 | East Indian........ | , 691 | 772 | 850 |
| Polish.... | 3,401 | 2,985 | 2,143 | Indian (American). | 25 | 40 | 42 |
| Portuguese. | 5,277 | 2,999 | 3,443 | Japanese. . . . . . . | 169 | 126 | 154 |
| Romanian.. | 189 | 156 | 155 | Lebanese.... | 242 | 215 | 444 |
| Russian.... | 232 | 209 | 198 | Mexican. | 45 | 29 | 24 |
| Scandinavian- |  |  |  | Negro.. | 1,135 | 1,131 | 1,559 |
| Danish. | 1,207 | 598 | 742 | Syrian. | 28 | 47 | 122 |
| Icelandic. | 14 | 7 | 4 | Turkish. | 133 | 139 | 174 |
| Norwegian | 551 489 | 419 344 | 408 367 | Unspecified | 207 | 214 | 445 |
| Spanish ${ }^{1}$.. | 850 | 844 | 822 | Totals, Other | 4,325 | 3,858 | 5,534 |
| $\stackrel{\text { Swiss }}{ }$ U ${ }^{\text {U }}$ Uraian | 811 349 | 653 165 | 674 170 | Grand Totals | 104,111 | 71,689 | 74,586 | ${ }^{1}$ Includes a few minor groups.

${ }^{2}$ Reported as Swiss origin but evidently one of the constituent races

Out of every 100 immigrants admitted to Canada during the three-year period 1960-62, 21 were British subjects, 20 were citizens of Italy, 12 of the United States, 9 of Germany, 5 of Greece and 4 each of Portugal and the Netherlands; other nationalities made up the remaining 25.

## 6.-Citizenship of Immigrant Arrivals, 1960-62

Note.-Figures from 1930 are given in the corresponding table of previous Year Books beginning with the 1936 edition.

| Country of Citizenship | 1960 | 1961 | 1962 | Country of Citizenship | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. |  | No. | No. | No. |
| Australia. | 1,403 | 1,198 | 1,171 | Netherlands. | 5,480 | 1,897 | 1,631 |
| Austria. | 1,102 | 650 | 457 | New Zealand. | 412 | 312 | 308 |
| Belgium | 792 | 727 | 521 | Norway. | 349 | 180 | 206 |
| Britain and colonies | 21,226 | 13,932 | 18,475 | Pakistan. | 98 | 77 | 74 |
| Central America... | 14 | 18 | 10 | Poland. | 2,704 | 2,411 | 1,639 |
| Ceylon. | 21 | 32 | 20 | Portugal | 5,108 | 2,861 | 3,063 |
| China. | 1,158 | 706 | 545 | South Africa. | 640 | 470 | 368 |
| Czechoslovakia | 42 | 29 | 10 | South America.... | 475 | 431 | 314 76 |
| Denmark | 1,133 | 483 | 608 | Southern Rhodesia | 56 | 61 | 76 |
| Egypt. | 33 | 34 | 964 | Spain. | 603 | 555 | 499 |
| Finland | 989 | 348 | 343 | Sweden. | 254 | 123 | 155 |
| France. | 2,395 10,596 | 1,987 6,060 | 2,350 5,081 | Switzerla | 836 218 | 630 204 | 604 177 |
| Greece. | 4,922 | 3,794 | 4,023 | Union of Soviet Socialist |  |  |  |
| Hungary | , 534 | $\xrightarrow{270}$ | + 437 | Republics............... | 182 | 105 | 81 |
| India. | 534 | 589 | 575 |  | 10,060 |  |  |
| Ireland, Republic of | 1,056 | 549 | 598 | Yugoslavia.. | 873 | 1,001 | 1,009 |
| Israel............ | 1,581 | 674 | 587 | Other African. | 5 | 11 | 16 |
| Italy. | 21,040 | 14,352 | 13,951 | Other Asian.... | 50 179 | 63 | 143 |
| Japan.. | 159 | 114 | 141 | Other European | 179 4,230 | 180 2,404 | 143 1,922 |
| Lebanon | 305 14 | 283 10 | 292 13 | Stateless. | 4,230 101 | 2,404 219 | 1,922 312 |
| Mexico. | 101 | 82 | 102 |  |  |  |  |
| Moroce | 48 | 178 | 109 | Total | 104,111 | 71,689 | 74,586 |

Sex distribution of recent immigrant arrivals is shown in Table 7. In the three years 1960-62, adult males comprised 34.1 p.c. of the immigrants, adult females 40.5 p.c. and children under 18 years of age the remaining 25.4 p.c. Without relation to age, 53.0 p.c. of the newcomers were females.
7.-Sex Distribution of Immigrants as Adult Males, Adult Females and Children, 1960-62

Nore.-Figures from 1930 are given in the corresponding table of previous Year Books beginning with the 1946 edition.

| Item | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: |
|  | No. | No. | No. |
| Males. | 51,018 | 32,106 | 34,546 |
| Under 18 years | 13,365 | 9,388 | 9,740 |
| Adult.......... | 37,653 | 22,778 | 24,806 |
| Females. | 53,093 | 39,583 | 40,040 |
| Under 18 years | 12,852 | 8,985 | 9,487 |
| Adult. | 40,241 | 30,648 | 30,615 |
| Totals, Immigrants. | 104,111 | 71,689 | 74,586 |

The number of female immigrants coming into Canada has been higher than the number of male immigrants in every year since 1957. In 1962 the excess of females was 5,494 and only in the age group 0-14 years did the number of males exceed that of females. In the single category, males exceeded females in all age groups up to 30 years but in the married category females exceeded males by 3,509 , in the widowed category by 1,995 and in the divorced or separated category by 454 . Of all persons arriving in 1962 who were 15 years of age or over, 51.9 p.c. were married, 41.2 p.c. were single and 6.3 p.c. were widowed or divorced.

## 8.-Marital Status of Immigrant Arrivals, by Sex and Age Group, 1962

| Sex and Age Group | Single | Married | Widowed | Divorced | Separated | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Males- | No. | No. | No. | No. | No. | No. |
| 0-14 years.................... | 8,449 | - | - | - | - | 8,449 |
| 15-19 " | 2,868 | 31 | - |  | - | 2,899 |
|  | 4,604 | 1,202 | 1 | 10 | 4 | 5,821 |
| 25-29 | 2,860 | 3,039 | 4 | 29 | 12 | 5,944 |
| 30-39 " | 1,333 | 4,963 | 19 | 117 | 34 | 6,466 |
| $40-49$ $50-59$ | 200 | 2,058 1,115 | ${ }_{41} 1$ | 60 39 | 24 | 2,363 |
| 60 years or over | 59 | 1,935 | 297 | 29 | 11 | 1,331 |
| Totals, Males. | 20,444 | 13,343 | 383 | 284 | 92 | 34,546 |
| Females- |  |  |  |  |  |  |
| 0-14 years.................... | 8,043 | 877 | - | - | - | 8,043 |
|  | 2,612 4,438 | 877 3,932 | 2 | 12 | 1 | 3,490 |
|  | 2,590 | 3,932 3,552 | ${ }_{21}^{2}$ | 62 | 12 20 | 8,396 6,245 |
| 30-39 " | 1,604 | 4,628 | 78 | 176 | 57 | 6,543 6,545 |
| 40-49 " | ${ }^{3} 46$ | 1,957 | 226 | 156 | 47 | 2,732 |
| 50-59 " | 154 | 1,151 | 624 | 122 | 52 | 2,103 |
| 60 years or over................... | 193 | 755 | 1,427 | 70 | 43 | 2,488 |
| Totals, Females........ | 19,980 | 16,852 | 2,378 | 598 | 232 | 40,040 |

Destinations and Occupations.-Upon arrival in Canada, immigrants are asked to state their intended destination. According to these records, Ontario absorbed by far the highest proportion of arrivals in the three-year period $1960-62-50.4$ p.c. of all the males and 52.0 p.c. of all the females. Quebec was the second most important province of destination, receiving 24.3 p.c. of the males and 23.6 p.c. of the females, followed by British Columbia with 9.7 p.c. of the males and 10.2 p.c. of the females. The proportions
intending to settle in the Prairie Provinces were 12.7 p.c. and 11.6 p.c., respectively, and in the Atlantic Provinces 2.8 p.c. and 2.6 p.c., respectively. The provincial distribution has changed little from year to year throughout the whole postwar period.
9.-Intended Destinations of Male and Female Immigrants Admitted to Canada, 1960-62

| Province or Territory | 1960 |  |  | 1961 |  |  | 1962 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Males | Females | Total | Males | Females | Total | Males | Females | Total |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| Newfoundland. | 137 | 169 | 306 | 184 | 181 | 365 | 196 | 182 | 378 |
| Prince Edward Island. | 38 | 45 | 83 | 37 | 32 | 69 | 33 | 44 | 77 |
| Nova Scotia.. | 598 | 612 | 1,210 | 428 | 473 | 901 | 442 | 547 | 989 |
| New Brunswick | 317 | 317 | 634 | 415 | 355 | 770 | 491 | 453 | 944 |
| Quebec.. | 11,794 | 11,980 | 23,774 | 7,675 | 9,245 | 16,920 | 9,097 | 10,035 | 19,132 |
| Ontario.. | 26,396 | 28,095 | 54,491 | 16,008 | 20,510 | 36,518 | 16,852 | 20,358 | 37,210 |
| Manitoba. | 2,338 | 1,999 | 4,337 | 1,216 | 1,311 | 2,527 | 1,197 | 1,213 | 2,410 |
| Saskatchewan | 1,127 | 960 | 2,087 | 596 | 737 | 1,333 | 552 | 611 | 1,163 |
| Alberta. | 3,454 | 3,495 | 6,949 | 2,260 | 2,563 | 4,823 | 2,239 | 2,506 | 4,745 |
| British Columbia.. | 4,765 | 5,355 | 10,120 | 3,226 | 4,100 | 7,326 | 3,398 | 4,043 | 7,441 |
| Yukon and Northwest Territories | 54 | 66 | 120 | 61 | 76 | 137 | 49 | 48 | 97 |
| Canada. | 51,018 | 53,093 | 104,111 | 32,106 | 39,583 | 71,689 | 34,546 | 40,040 | 74,586 |



In like manner, immigrant arrivals are asked to record the occupations which they intend to follow in Canada. Approximately 49.3 p.c. of the persons admitted in 1962 declared that they would enter the labour force. The other 50.7 p.c. were wives, children and other dependants or were retired persons. Of the male workers, 25.4 p.c. were classed as professional and managerial, 7.9 p.c. were in agricultural occupations, 6.1 p.c. in service occupations, 35.9 p.c. in manufacturing, mechanical and construction trades, and 12.6 p.c. were general labourers. About 34 p.c. of the female immigrants entering the labour force were intending to follow service occupations. Details are given in Table 10.
10.-Intended Occupations of Male and Female Immigrants Admitted to Canada,


## 10.-Intended Occupations of Male and Female Immigrants Admitted to Canada, 1961 and 1962-concluded

| Intended Occupation | 1961 |  |  | 1962 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Males | Females | Total | Males | Females | Total |
|  | No. | No. | No. | No. | No. | No. |
| Manufacturing, Mechanical and Construction | 7,082 | 994 | 8,076 | 8,526 | 1,159 | 9,685 |
| Aircraft mechanics and repairmen............. |  | - | 32 | 45 | 1,180 | , 45 |
| Automobile mechanics and repairmen......... | 573 |  | 573 | 751 | 1 | 752 |
| Bakers......................... | 242 | 7 | 249 | 261 |  | 272 |
| Blacksmiths, hammermen and forgemen. | 57 | - | 57 | 60 |  | 60 |
| Boilermakers and platers. . . . . . . . . . . . . | 61 | - | 61 | 115 | 1 | 116 |
| Brick and stone masons... | 583 |  | 583 | 618 |  | 618 |
| Butchers and meat cutters. | 203 | 3 | 206 | 181 | 2 | 183 |
| Butter and cheese makers.. | ${ }^{3}$ | - | ${ }^{3}$ | 11 | - | 11 |
| Cabinet and furniture makers | 216 | - | 216 | 299 |  | 299 |
| Carpenters..... | 634 | - | 634 | 714 | - | 714 |
| Compositors and typesetters.. | 77 | - | 77 | 64 | - | 64 |
| Construction machinery operators | 40 | - | 40 | 51 |  | 51 |
| Dressmakers and seamstresses. | 5 | 662 | 667 | 5 | 795 | 800 |
|  | 21 |  |  | 18 |  | 502 |
| Furriers.. | 39 | 8 | 47 | 54 |  | 18 |
| Glove makers. | 1 |  | 1 |  |  | 59 |
| Jewellers and watchmakers | 53 | 3 | 56 | 101 | 6 | 107 |
| Leather cutters...... | 3 | - | 3 | 5 | - | 5 |
| Machine operators | 237 | 17 | 254 | 33 |  | 33 |
| Machinists.. | 250 | 19 | 269 | 268 | 15 | 283 |
| Mechanics and repairmen | 512 | - | 512 | 488 | 1 | 489 |
| Metal fitters and assembl | 209 |  | 213 | 459 | 7 | 466 |
| Milliners.. | 2 | 5 | 7 | 1 | 4 | 5 |
| Millwrights. | 6 | - | 6 | 17 | - | 17 |
| Moulders. | 48 | - | 48 | 33 | - | 33 |
| Painters, decorators and glazie | 388 | - | 388 | 420 | 3 | 423 |
| Patternmakers... | 16 | - | 16 | 19 |  | 19 |
| Photoengravers and lithographers | 9 | - | 9 | 28 |  | 29 |
| Plasterers and lathers.. | 51 | 二 | 51 | 107 |  | 107 |
| Plumbers and pipe fitters. | 192 | - | 192 33 | 170 | - 1 | 70 |
| Radio repairmen...... | 85 | 1 | 86 | 144 | 3 | 147 |
| Sawyers (wood). | 13 | - | 13 | 7 | - | 7 |
| Sheet metal workers and tinsmith | 47 | - | 47 | 118 | - | 118 |
| Shoemakers and shoe repairers. | 173 | - | 173 | 215 | 1 | 216 |
| Spinners and weavers.... | 20 | 14 | 34 | 14 | 16 | 30 |
| Stationary engineers. | 29 | - | 29 | 14 | - | 14 |
| Stonecutters and dressers. | 307 | 21 | 328 | 361 | 24 | 385 |
| Tanners................... | 8 | - | 8 | 11 |  | 11 |
| Toolmakers, diemakers and setters | 115 | - | 115 | 168 | - | 168 |
| Upholsterers............... | 58 | 1 | 59 | 58 | 2 | 60 |
| Welders and flame cutters. | 242 | 2 | 244 | 399 | 2 | 401 |
| Other workers in food products... | 44 |  | 45 | 52 | 6 | 58 |
| Other workers in rubber products............ | 13 | - | 13 | 15 | - | 15 |
| Other workers in leather and leather products. | 16 40 | ${ }_{11}^{4}$ | 20 51 | 18 43 | 25 | 68 |
| Other workers in textiles..........il. ${ }^{\text {Ot. }}$ O..... | 38 | 108 | 146 | 28 | 130 | 158 |
| Other workers in wood products................ | 39 | - | 39 | 65 | 2 | 67 |
| Workers in pulp, paper and paper products..... | 10 | 2 | 12 | 33 |  | 33 |
| Other workers in printing and publishing...... | 23 | 10 | 33 | 63 | 26 | 89 |
| Other metal workers......................... | 116 | 5 | 121 63 | 18 46 |  | 52 |
| Other workers in non-metalic mineral products Other manufacturing and mechanical workers. | 58 292 | 81 | 373 | 535 | 63 | 598 |
| Other construction workers.................... | 71 | - | 71 | 121 |  | 121 |
| Labourers (other than agricultural, fishing, logging and mining). | 3,827 | 155 | 3,982 | 2,984 | 161 | 3,145 |
| Not Stated | 48 | 11 | 59 | 28 | 24 | 52 |
| Totals, Workers | 21,828 | 12,981 | 34,809 | 23,742 | 13,006 | 36,748 |
| Dependants- |  |  |  |  |  |  |
| Wives.... | 8,984 | 15,882 8,331 | 17,882 17,315 | 9,323 | 8,814 | 18,137 |
| Others... | 1,294 | 2,389 | 3,683 | 1,481 | 2,546 | 4,027 |
| Totals, Immigrants..... | 32,106 | 39,583 | 71,689 | 34,546 | 40,040 | 74,586 |

Deportations.-Deportations by cause and nationality are shown in Table 11 for the years 1953-62. 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, 1953-62

Note.-Figures from 1903 are given in the corresponding table of previous Year Books.

| Cause and Nationality | 1953 | 1954 | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cause | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| Mental and physical...... | 85 | 74 | 125 | 91 | 55 | 81 | 107 | 66 | 40 | 40 |
| Public charges........... | 14 | 2 | 23 | 21 | 13 | 7 | 10 | 15 | 18 | 8 |
| Criminality.............. | 121 | 210 | 192 | 164 | 145 | 170 | 232 | 200 | 223 | 147 |
| Misrepresentation ${ }^{2}$ and stealth. <br> Other causes. | 309 66 | 249 118 | 282 81 | 249 79 | 262 34 | 338 68 | 317 85 | 236 54 | 252 59 | 342 93 |
| Totals, Deportations. . | 595 | 653 | 703 | 604 | 509 | 664 | 751 | 571 | 592 | 630 |
| Nationality |  |  |  |  |  |  |  |  |  |  |
| British................. | 237 | 249 | 227 | 212 | 155 | 155 | 204 | 125 | 127 | 90 |
| United States | 92 | 88 | 124 | 123 | 98 | 132 | 175 | 117 | 164 | 143 |
| Other....... | 266 | 316 | 352 | 269 | 256 | 377 | 372 | 329 | 301 | 397 |

${ }^{1}$ Excludes rejections and persons refused admission.
${ }^{2}$ Includes deserting seamen deported.
Returning Canadians.-The numbers of Canadians returning to Canada during each of the ten years 1953-62 after having established residence in the United States were:-

|  | Year | No. |  | Year | $N o$. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1953. |  | 4,606 | 1958. |  | 5,297 |
| 1954. |  | 4,516 | 1959. |  | 5,243 |
| 1955. |  | 3,942 | 1960. |  | 5,233 |
| 1956. |  | 4,740 | 1961. |  | 6,250 |
| 1957. |  | 5,426 | 1962. | . | 5,758 |

## 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, 1953-62 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 bordercrossing 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 44,272 persons entering the United States from Canada in the year ended June 30, 1962, 30,377 were native-born Canadians- 14,632 males and 15,745 females. Slightly more than one quarter, or 7,982 , 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 30,377 native-born persons was the professional or technical group which numbered 3,532 ; clerical or kindred workers numbered 3,062 , and 1,639 were classed as craftsmen or foremen. On the other hand, 16,464 persons, or 54.2 p.c. of the total, were classed as housewives, children and others with no reported occupation. Altogether, 41.2 p.c. of the total were children under 20 years of age.

## 12.-Persons Entering the United States from Canada, Years Ended June 30, 1953-62

Note.-Includes only persons who have declared their intention of remaining permanently in the United States when applying for a visa (see text above). Source: Immigration and Naturalization Service, United States Department of Justice.

| Year | $\underset{\text { Born }}{\text { Canadian- }}$ | Total from Canada | Year | $\underset{\text { Born }}{\text { Canadian- }}$ | Total from Canada |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. |  | No. | No. |
| 1953... | 28,967 | 36,283 | 1958.. | 30,055 | 45,143 |
| 1954. | 27,055 | 34,873 | 1959. | 23,082 | 34,599 |
| 1955. | 23,091 | 32,435 | 1960. | 30,990 | 46,668 |
| 1956... | 29,533 | 42,363 | 1961. | 32,038 | 47,470 |
| 1957.... | 33,203 | 46,354 | 1962. | 30,377 | 44,272 |

Of the 44,272 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, United States Department of Justice, lists 5,561 as professional, technical and kindred workers, 4,394 as clerical and kindred workers and 3,833 as craftsmen, foremen and kindred workers. Housewives, children and others with no reported occupation accounted for 21,376 , or 48.3 p.c. of the total.

## PART II.-CANADIAN CITIZENSHIP*

Naturalization procedures and events leading to the passing of the Canadian Citizenship Act are given in the 1951 Year Book, pp. 153-155.

## 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 underlying community of status for all the people of Canada. Since Jan. 18, 1950, the administration of Canadian citizenship has been the responsibility of the Department of Citizenship and Immigration. The provisions of the Act and its several amendments are outlined 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, 1947. These were (1) those born in Canada or on a Canadian ship or aircraft and who were not aliens on

[^52]Jan. 1, 1947; and (2) those born outside of Canada who were not aliens on Jan. 1, 1947 and who were entitled to claim derivative citizenship in accordance with the provisions of the Act.

The Act provides that a person in the second category 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 his 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 husbands 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 being 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.

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 mother 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. Provision is made for the granting
of a certificate to a person who has been adopted or legitimated in Canada and who has been admitted to Canada for permanent residence, if the adopter or the legally recognized father is a Canadian citizen.

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 national 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 forces of such 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 Citizenship.-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 referred to in Subsection (4) of Section 19 for a ruling and the decision of the Commission or the Court, as the case may be, shall 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 of Citizenship and Immigration, he is satisfied that such person has, when not under a disability (1) acquired voluntarily, when in Canada, 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 1 shows the citizenship of the population by province and Table 2 gives the numerical and percentage distribution of the population by country of citizenship for 1961 compared with the distribution in 1951.

## 1.-Citizenship of the Population, by Province, Census 1961

| Province or Territory | Canadian | Other Commonwealth | United States | 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 | 104,629 |
| Nova Scotia.... | 725,686 | 4,568 | 2,254 | 4,122 | 237 | 140 | 737,007 |
| New Brunswick. | 590,662 | 2,003 | 2,573 | 2,443 | 112 | 143 | 597,936 |
| Quebec. . | 5,078,082 | 31,491 | 16,585 | 121,278 | 4,608 | 7,167 | 5,259,211 |
| Ontario.. | 5,673,098 | 184,429 | 36,329 | 317,216 | 7,309 | 17,711 | 6,236,092 |
| Manitoba. | 879,187 | 10,059 | 3,242 | 26,347 | 688 | 2,163 | 921,686 |
| Saskatchewan. | 902,106 | 5,946 | 3,656 | 11,664 | 969 | 840 | 925,181 |
| Alberta. | 1,240,895 | 21,353 | 11,674 | 53,129 | 1,982 | 2,911 | 1,331,944 |
| British Columbia.... | 1,498,498 | 44,647 | 10,908 | 64,641 | 6,973 | 3,415 | 1,629,082 |
| Yukon and Northwest Territories.......... | 35,315 | 671 | 309 | 1,228 | 44 | 59 | 37,626 |
| Canada | 17,182,429 | 306,690 | 88,312 | 603,195 | 23,033 | 34,588 | 18,238,247 |

## 2.-Population by Country of Citizenship, with Percentage Distribution, Censuses 1951 and 1961

| Country of Citizenship | 1951 |  | 1961 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | No. | $\begin{aligned} & \text { P.C. } \\ & \text { of } \\ & \text { Total } \end{aligned}$ | No. | $\begin{aligned} & \text { P.C. } \\ & \text { of } \\ & \text { Total } \end{aligned}$ |
| Canada. | 13,567,939 | 96.85 | 17,182,429 | 94.21 |
| Other Commonwealth.. | 104,071 | 0.74 | 306,690 | 1.68 |
| United States.. | 69,000 | 0.49 | 88,312 | 0.48 |
| European Countries. | 236,490 | 1.69 | 603,195 | 3.31 |
| Austria...... | 3,769 | 0.03 | 12,648 | 0.07 |
| Belgium. | 4,893 | 0.03 | 10,095 | 0.06 |
| Czechoslovakia | 9,990 | 0.07 | 2,491 | 0.01 |
| Denmark. | 4,432 | 0.03 | 14,921 | 0.08 |
| Finland. | 6,080 | 0.04 | 11,660 | 0.06 |
| Germany. | 5,031 12,926 | 0.04 0.09 | 21,032 | 0.12 0.69 |
| Hungary. | 7,871 | 0.06 | -26,775 | 0.15 |
| Iceland. | , 137 | 0.0 | , 404 |  |
| Italy....... | 22,616 | 0.16 | 173,337 | 0.95 |
| Netherlands | 32,179 | 0.23 | 80,096 | 0.44 |
| Norway. | 2, ${ }^{2} 775$ | 0.02 | 4,084 | 0.02 |
| Romania | 55,764 3 | 0.40 0.03 | 29,977 2,181 | 0.16 0.01 |
| Sweden. | 2,378 | 0.02 | 2,806 | 0.02 |
| Union of Soviet Socialist Republics | 46,267 | 0.33 | 11,082 | 0.06 |
| Yugoslavia. | 6,718 | 0.05 | 17,363 | 0.10 |
| Other...... | 9,373 | 0.07 | 56,002 | 0.31 |
| Aslatic Countries. | 15,122 | 0.11 | 23,033 | 0.13 |
| China.. | 12,808 | 0.09 | 13,618 | 0.07 |
| Japan. | 1,312 | 0.01 | 1,875 | 0.01 |
| Other. | 1,002 | 0.01 | 7,540 | 0.04 |
| Other Countries ${ }^{1}$. | 16,807 | 0.12 | 34,588 | 0.19 |
| Grand Totals. | 14,009,429 | 100.00 | 18,238,247 | 100.00 |

[^53]Citizenship Certificates Issued.-The following statistics show the number of citizenship certificates "issued" and more detailed information on certificates "granted" in recent years. The former, in Table 3, include both certificates granted to new citizens and those issued for various reasons to persons who are already Canadian citizens. Tables 4 to 8 refer only to "grants" which means that the holder became a Canadian citizen by the grant of such certificate.

In 1961, 96,191 Canadian citizenship certificates were issued as compared with 104,436 in 1960. During 1961 the Canadian Citizenship Registration Branch recorded 5,477 certificates of registration of births abroad, 92 declarations of retention of Canadian citizenship and 36 petitions for resumption of Canadian citizenship. Certificates issued free to persons who had had active military service numbered 547 , as compared with 585 in 1960. Corresponding figures for 1960 were 4,904 registrations of births abroad, 121 declarations of retention, 30 petitions for resumption and 585 certificates issued free to persons who had had active military service.

## 3.-Citizenship Certificates Issued, by Status of Recipient, 1960 and 1961

| $\begin{aligned} & \text { Section } \\ & \text { of } \\ & 1947 \text { Act } \end{aligned}$ | Classification | 1960 | 1961 |
| :---: | :---: | :---: | :---: |
|  |  | No. | No. |
| Sect. 34 (1) (i) | Certificates of Proof of Status- |  |  |
|  | Canadian citizens by birth......... | 1,175 | 1,134 1 |
|  | British subjects with 5 years domicile before Jan. 1, 1947 | 1,132 | 1,141 |
|  | Women, through marriage. | 465 | 410 |
| Sect. 10 (2) | British subjects with 5 years domicile after Jan. 1, 194 | 7,567 | 7,938 |
|  | Aliens. | 40,599 | 36,402 |
| Sect. 10 (5) | Minors whose parents have been granted Certificates. | 13,562 | 11,454 |
| Sect. 11 (3) | Minors under special circumstances............................... | 188 | 215 |
| Sect. 10 (3) | Women who regained lost Canadian citizenship through marriage. . . . | 190 | 188 |
| Sect. 10 (4) | Canadians who regained lost status by naturalization outside Canada.. | 120 | 127 |
|  | Doubtful cases who now have been awarded Certificates. | 5 | 2 |
| Sect. 11 (2) | Adopted and legitimated persons. | +149 | , 146 |
|  | Replacement Certificates......................... | 1,510 | 1,648 |
|  | Miniature certificates of citizenship (issued since Oct. 18, 1955, to Canadian citizens) | 35,911 | 33,611 |
|  | Totals ${ }^{1}$. | 104,406 | 96,155 |

${ }^{1}$ Exclusive of resumptions of Canadian citizenship, such issues numbering 30 in 1960 and 36 in 1961.
Characteristics of Persons Granted Citizenship Certificates in 1961.-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.

Of the 56,476 persons granted citizenship in 1961, 1 p.c. had migrated to Canada before 1921,3 p.c. in the period 1921-40, 12 p.c. in the period 1941-50 and 84 p.c. since 1950. Regionally, these new citizens were distributed as follows: 2 p.c. in the Atlantic Provinces, 16 p.c. in Quebec, 55 p.c. in Ontario, 15 p.c. in the Prairie Provinces and 12 p.c. in British Columbia. Just over 84 p.c. of them resided in urban centres.

About 18 p.c. of the persons naturalized during 1961 had been citizens of Germany, 17 p.c. had been citizens of Italy, 17 p.c. had owed allegiance to a British Commonwealth country, 12 p.c. had been citizens of the Netherlands, 5 p.c. reported former allegiance to countries now parts of the U.S.S.R., and Poland was the country of allegiance for 5 p.c. Most of the persons designated as "stateless" were born in Poland, the U.S.S.R., Yugoslavia, Hungary, Germany, Czechoslovakia or Austria.

Of the males granted citizenship certificates in 1961, 22 p.c. were reported in manufacturing and mechanical occupations, 11 p.c. were employed in construction, 9 p.c. were labourers in other than primary industries, 9 p.c. were in professional occupations, 8 p.c. were in service, 4 p.c. in agriculture, 4 p.c. in clerical occupations and almost 5 p.c. in proprietary and managerial occupations. Of the females granted certificates, 50 p.c. were homemakers and among those employed outside the home, 29 p.c. were in clerical occupations, 26 p.c. were in manufacturing and mechanical occupations and 26 p.c. in service occupations.

## 4.-Persons Granted Citizenship Certificates in 1961, by Province of Residence, Rural and Urban, and Period of Immigration to Canada



[^54]5.-Persons Granted Citizenship Certificates in 1960 and 1961, by Age Group and Sex

6.-Persons Granted Citizenship Certificates in 1960 and 1961, by Occupation and Sex

| Occupation | 1960 |  |  | 1961 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Males | Females | Total | Males | Females | Total |
|  | No. | No. | No. | No. | No. | No. |
| Proprietary and managerial. | 1,323 | 135 | 1,458 | 1,431 | 140 | 1,571 |
| Professional. | 2,612 | 744 | 3,356 | 2,733 | 767 | 3,500 |
| Clerical. | 1,333 | 2,266 | 3,599 | 1,236 | 2,131 | 3,367 |
| Transportation and communication. | 1,292 | 69 | 1,361 | 1,020 | 60 | 1,080 |
| Commercial and financial. | 1,140 | 419 | 1,559 | 1,038 | 353 | 1,391 |
| Service. | 2,333 | 1,822 | 4,155 | 2,553 | 1,949 | 4,502 |
| Agricultural. | 1,680 | 50 | 1,730 | 1,397 | 42 | 1,439 |
| Fishing, trapping, logging. | 229 | - | 229 | 220 | - | 220 |
| Mining. | 497 | - | 497 | 408 | - | 408 |
| Manufacturing and mechanical. | 7,876 | 1,951 | 9,827 | 7,037 | 1,937 | 8,974 |
| Construction. | 4,273 | 5 | 4,278 | 3,613 | 13 | 3,626 |
| Labourers, not in primary industries. . . . . . . . . . | 3,489 | 9 | 3,498 | 2,911 | 18 | 2,929 |
| Homemakers. | - | 13,866 | 13,866 | - | 12,256 | 12,256 |
| No occupation (including students, retired, etc.). | 2,681 | 1,738 | 4,419 | 2,707 | 1,755 | 4,462 |
| Children under 14 years of age.................. | 4,029 | 3,587 | 7,616 | 3,211 | 2,857 | 6,068 |
|  | 465 | 465 | 930 | 357 | 326 | 683 |
| Totals, All Occupations............... | 35,252 | 27,126 | 62,378 | 31,872 | 24,604 | 56,476 |

[^55]7.-Persons Granted Citizenship Certificates in 1960 and 1961, by Country of Birth and Sex

| Country of Birth | 1960 |  |  | 1961 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Males | Females | Total | Males | Females | Total |
|  | No. | No. | No. | No. | No. | No. |
| Albania. | 18 | 2 | 20 | 8 | 2 | 10 |
| Argentina. | 17 | 22 | 39 | 19 | 23 | 42 |
| Australia. | 66 | 53 | 119 | 63 | 50 | 113 |
| Austria... | 917 | 863 | 1,780 | 728 | 708 | 1,436 |
| Belgium. | 563 | 463 | 1,026 | 496 | 406 | 902 |
| Brazil. . | 11 | 14 | 25 | 20 | 22 | 42 |
| Britain.. | 3,713 | 3,107 | 6,820 | 3,859 | 3,233 | 7,092 |
| British Guiana | 52 | 50 | 102 | 66 | 58 | 124 |
| Bulgaria. | 33 | 15 | 48 | 22 | 7 | 29 |
| Canada. | 53 | 187 | 240 | 63 | 181 | 244 |
| China... | 240 | 171 | 411 | 425 | 386 | 811 |
| Czechoslovakia | 492 | 402 | 894 | 373 | 310 | 683 |
| Denmark | 443 | 266 | 709 | 430 | 259 | 689 |
| Egypt. | 34 | 33 | 67 | 107 | 77 | 184 |
| Finland. | 331 | 339 | 670 | 258 | 292 | 550 |
| France... | 645 | 386 | 1,031 | 657 | 397 | 1,054 |
| Germany | 5,332 | 4,872 | 10,204 | 4,549 | 4,115 | 8,664 |
| Greece. | 909 | 541 | 1,450 | 1,250 | 643 | 1,893 |
| Hong Kong. | 23 | 12 | , 35 | 16 | 32 | 48 |
| Hungary.... | 517 | 541 | 1,058 | 494 | 455 | 949 |
| India.... | 133 | 85 | 218 | 167 | 102 | 269 |
| Indonesia. | 63 | 50 | 113 | 58 | 49 | - 107 |
| Iraq......... | 21 | 13 | 34 | 11 | 7 | 18 |
| Ireland, Republic of. | 510 | 369 | 879 | 398 | 294 | 692 |
| Israel......... | 68 | -44 | ${ }^{112}$ | ${ }^{83}$ | ${ }^{53}$ | 136 |
| Italy.. | 6,808 | 3,829 | 10,637 | 6,156 | 3,562 | 9,718 |
| Japan.... | 31 | 65 | 96 | 28 | 32 | 60 |
| Lebanon.... | 111 | 54 | 165 | 133 | 81 | 214 |
| Luxembourg | 13 | 12 | 25 | 17 | 3 | 20 |
| Malta... | 75 | 31 | 106 | 72 | 33 | 105 |
| Mexico.. | 15 | 9 | 24 | 10 | 19 | 29 |
| Netherlands. | 4,812 | 3,850 | 8,662 | 3,697 | 3,027 | 6,724 |
| Netherlands East Indies. | 22 | 20 | 42 | 14 | 11 | 25 |
| New Zealand.. | 23 | 16 | 39 | 16 | 9 | 25 |
| Norway. | 185 | 96 | 281 | 165 | 98 | 263 |
| Pakistan | 15 | 11 | 26 | 17 | 8 | 25 |
| Poland. | 2,408 | 1,904 | 4,312 | 1,942 | 1,762 | 3,704 |
| Portugal. | 186 | - 39 | 225 | - 349 | 1,64 | ${ }^{413}$ |
| Romania.... | 457 | 435 | 892 | 393 | 330 | 723 |
| South Africa. | 99 | 44 | 143 | 99 | 89 | 188 |
| Spain..... | 66 123 | 43 68 | 109 | 81 89 | 59 58 | 140 |
| Switzerland. | 123 | 168 | 472 | -8988 | 58 143 | 147 |
| Turkey. | 41 | 34 | 75 | +57 | 143 46 | 103 |
| Union of Soviet Socialist Republic | 2,238 | 1,969 | 4,207 | 1,699 | 1,477 | 3,176 |
| United States. | 488 | 294 | 782 | 483 | 286 | 769 |
| Venezuela.. | 15 | 9 | 24 | 13 | 7 | 20 |
| West Indies. | 144 | 178 | 322 | 183 | 252 | 435 |
| Yugoslavia. | 1,146 | 899 | 2,045 | 999 | 786 | 1,785 |
| Other... | 217 | 155 | 372 | 282 | 201 | 483 |
| Totals, All Countries....Commonwealth | 35,252 | 27,126 | 62,378 | 31,872 | 24,604 | 56,476 |
|  | 4,474 | 3,809 | 8,283 | 4,707 | 4,115 | 8,822 |
| Other Asia. | 635 | 484 | 1,119 | 841 | 690 | 1,531 |
| Other Europe. | 29,474 | 22,373 | 51,847 | 25,520 | 19,265 | 44,785 |
| South America. | 67 | 79 | 146 | 96 | 95 | 191 |
| United States. | 488 | 294 | 782 | 483 | 286 | 769 |
| Other.. | 114 | 87 | 201 | 225 | 153 | 378 |

## 8.-Persons Granted Citizenship Certificates in 1961, by Country of Former Allegiance and Period of Immigration to Canada

| Country of Former Allegiance | Period of Immigration |  |  |  |  |  | Born in Canada | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { Before } \\ 1921 \end{gathered}$ | $\begin{aligned} & 1921- \\ & 1930 \end{aligned}$ | $\begin{aligned} & 1931- \\ & 1940 \end{aligned}$ | $\begin{aligned} & 1941- \\ & 1950 \end{aligned}$ | $\begin{aligned} & 1951- \\ & 1955 \end{aligned}$ | $\begin{aligned} & 1956- \\ & 1960 \end{aligned}$ |  |  |
|  | No. | No. | No. | No. | No. | No. | No. | No. |
| Commonwealth countries.. | 20 | 32 | 29 | 2,196 | 5,294 | 2,282 | - | 9,853 |
| Austria................... | 21 | 23 | - | 35 | 981 | 327 |  | 1,389 |
| Belgium.................... | 8 | 10 | 10 | 76 | 480 | 207 | 2 | 793 |
| Bulgaria................... | 18 | 2 | 1 | 32 | 18 | 9 | - | 30 |
| China..................... | 148 | 20 | 4 | 32 | 281 | 272 | 2 | 755 |
| Czechoslovakia............ | 1 | 54 | 45 | 64 | 167 | 73 | 3 | 407 |
| Denmark................. | 4 | 30 | 4 | 55 | 385 | 205 | 3 | 686 |
| Estonia.................... | 9 | 69 | 3 | 154 | 250 | 31 | 3 | 435 |
| Finland.. | 9 | 69 | 3 | 26 | 374 | 66 | 3 | 550 |
| France.... | 11 | 6 | 1 | 82 | -670 | 277 | - | 1,047 |
| Germany . . . . . . . . . . . . . | 12 | 61 | 16 | 500 | 7,587 | 2,241 | 10 | 10,427 |
| Greece . . . . . . . . . . . . . . . | 4 | 5 | 3 | 57 | 1,016 | 876 | 3 | 1,964 |
| Hungary ................... | 3 | 56 | 28 | 77 | 293 | 269 | 1 | 727 |
| Isrsel...................... | - | - | - | 3 | 114 | 176 | - | 293 |
| Italy....................... | 21 | 14 | 11 | 403 | 6,647 | 2,717 | 5 | 9,818 |
| Japan.................... | 11 | 21 | 3 | 1 | ${ }^{6}$ | 11 | 2 | 55 |
| Latvia................... | 1 | 1 | 2 | 162 | 258 | -67 | - | 488 |
| Lebanon. | 4 | 15 | $\stackrel{2}{2}$ | 2 136 | 111 | 111 | 2 | 227 |
| Netherlands. | 4 | 15 9 | 8 | 717 | 5,391 | 780 | 2 | 6,906 |
| Norway.. | 7 | 22 | 1 | 17 | 157 | 50 | 5 | 259 |
| Poland... | 33 | 190 | 75 | 898 | 1,170 | 584 | 13 | 2,963 |
| Portugal.................... | - |  | - | 1 | 247 | 167 | - | 415 |
| Romania................... | 9 | 35 | 2 | 49 | 172 | 51 | 2 | 320 |
| Spain. . . . . . . . . . . . . . . . . | 1 | - | 2 | 4 | 75 | 77 |  | 159 |
| Sweden................... | 9 | 33 | - | 7 | 72 | 7 | 4 | 132 |
| Switzerland............... | 3 | 11 | 6 | 35 | 221 | 126 | 7 | 409 |
| Turkey $\quad . . . . . . .$. | 2 | 1 | 81 | 175 | 20 | 27 176 |  | 50 959 |
| United States:........... | 158 | 134 | 81 | 175 | 208 | 176 | 27 | 959 |
| Union of Soviet Socialist Republics. | 62 | 172 | 52 | 526 | 799 | 162 | 5 | 1,778 |
| Yugoslavia.................. | 2 | 22 | 10 | 89 | 783 | 550 | 1 | 1,457 |
| Other..................... | 3 | 2 | 1 | 21 | 175 | 213 | - | 415 |
| Totals, All Countries. . | 568 | 1,050 | 396 | 6,600 | 34,546 | 13,214 | 102 | 56,476 |

## CHAPTER V.-VITAL STATISTICS*

## CONSPECTUS

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Section 5. Marriages and Divorces.
Section 5. Marriages and Divorces. ..... 250 ..... 250
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The interpretation of the symbols used in the tables throughout the Year Book
will be found facing $p .1$ of this volume.

Vital statistics provide a record of population development-a measure of the pace of growth, marriage and fertility trends, the distribution of people in and entering the various age groups, the relative importance of each of the causes of death, and so on. The continuity of such data gives a constant guide to the planning, operation and evaluation of a variety of 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 unpublished 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 of Canada for five-year periods 1941-60 and for single years 1959-61. Table 2 shows similar data for urban centres having at least 10,000 population at the date of the 1961 Census for the year 1961 with averages for 1956-60. Corresponding data for 1921 -when the collection of national vital statistics was initiated-to 1940 are shown in previous issues of the Canada Year Book.

[^56]
## 1.-Summary of Principal Vital Statistics, by Province, 1941-61

Note.-Figures for the years 1921, when the collection of national statistics was initiated, to 1940 are given in previous editions of the Year Book. Adjustments in intercensal populations on the basis of 1961 Census figures necessitated the revision of many of the 1959 and 1960 birth, death, natural increase and marriage rates that appeared in the 1962 Year Book.

| Province and Year | Live Births |  | Deaths |  | Natural Increase ${ }^{1}$ |  | Infant Mortality ${ }^{2}$ |  | Maternal Mortality |  | Marriages |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | Rate ${ }^{3}$ | No. | Rate ${ }^{8}$ | No. | Rate ${ }^{3}$ | No. | Rate ${ }^{4}$ | No. | Rate ${ }^{4}$ | No. | Rate |
| Newfoundiand- |  |  |  |  |  |  |  |  |  |  |  |  |
| Av. 1941-45...... | 9,292 | 29.8 | 3,681 3,179 | 11.8 9.3 | 5,611 | 18.0 26.9 | 852 <br> 754 | ${ }_{61}^{92}$ | 39 25 | 4.2 2.0 | 2,967 2,711 | 9.5 8.0 |
| " 1951-55. | 13, 101 | 34.1 | 2,926 | 7.6 | 10,175 | 26.5 | 598 | 46 | 24 | 1.8 | 2,836 | 7.4 |
| " 1956-60. | 14,934 | 34.6 | 3,114 | 7.2 | 11,820 | 27.4 | 585 | 39 | 17 | 1.1 | 3,032 | 7.0 |
| 1959. | 14,826 | 33.6 | 3,179 | 7.2 | 11,647 | 26.4 | 576 | 39 | 12 | 0.8 | 2,893 | 6.6 |
| 1960. | 15,173 | 33.9 | 3,015 | 6.7 | 12,158 | 27.2 | 545 | 36 | 16 | 1.1 | 3,104 | 6.9 |
| 1961... | 15,591 | 34.1 | 3,038 | 6.6 | 12,553 | 27.5 | 588 | 38 | 11 | 0.7 | 3,306 | 7.2 |
| P. E. Island- |  |  |  |  |  |  |  |  |  |  |  |  |
| Av. 1941-45. | 2,180 | 23.7 | 964 | 10.5 | 1,216 | 13.2 | 114 | 52 | 9 | 3.9 | 686 | 7.5 |
| " 1946-50. | 2,869 | 30.5 | 922 | 9.8 | 1,947 | 20.7 | 114 | 40 | 4 | 1.3 | 677 | 7.2 |
| " 1951-55. | 2,720 | 27.2 | 923 | 9.2 | 1,797 | 18.0 | 88 | 32 | 2 | 0.8 | 623 | 6.2 |
| " 1956-60. | 2,674 | 26.6 | 953 | 9.5 | 1,721 | 17.1 | 87 | 33 | 1 | 0.3 | 645 | 6.4 |
| 1959. | 2,720 | 26.9 | 1,007 | 10.0 | 1,713 | 16.9 | 85 | 31 | - | - | 639 | 6.3 |
| 1960. | 2,734 | 26.5 | 961 | 9.3 | 1,773 | 17.2 | 88 | 32 |  |  | 690 | 6.7 |
| 1961...... | 2,838 | 27.1 | 978 | 9.3 | 1,860 | 17.8 | 93 | 33 | 1 | 0.4 | 624 | 6.0 |
| Nova Scotia- |  |  |  |  |  |  |  |  |  |  |  |  |
| Ay. ${ }_{\text {1 }}^{\text {1946-50...... }}$ | 15,146 17,994 | 25.2 28.9 | 6,326 6,042 | 10.5 9.7 | 8,820 | 14.7 19.2 | 870 760 |  | 22 | 2.7 | 6,302 | 10.5 8.9 |
| " " 1946-50. 1951-55. | 17,994 | 28.9 27.5 | 6,042 5,802 | 9.7 8.8 | 11,952 | 19.2 | 760 586 | 42 32 | 13 | 1.2 | 5,283 | 8.9 |
| " 1956-60. | 19,097 | 26.9 | 6,062 | 8.5 | 13,035 | 18.4 | 559 | 29 |  | 0.5 | 5,289 | 7.4 |
| 1959. | 19,038 | 26.5 | 6,371 | 8.9 | 12,667 | 17.6 | 591 | 31 | 8 | 0.4 | 5,310 | 7.4 |
| 1960. | 19,126 | 26.3 | 6,102 | 8.4 | 13,024 | 17.9 | 565 | 30 | 4 | 0.2 | 5,250 | 7.2 |
| 1961. | 19,382 | 26.3 | 6,135 | 8.3 | 13,247 | 18.0 | 538 | 28 | 4 | 0.2 | 5,292 | 7.2 |
| New Brunswick- |  |  |  |  |  |  |  |  |  |  |  |  |
| Av. ${ }_{\text {1 }}{ }_{1946-50 . . . . . .}$ | 13,037 16,878 | 28.2 34.0 | 5,050 4,886 | 10.9 9.8 | 71,987 | 17.3 24.2 | 960 1,015 | 74 60 | $\stackrel{42}{23}$ | 3.2 | 4,433 4,864 | 9.6 9.8 |
| " 1951-55. | 16,496 | 31.0 | 4,576 | 8.6 | 11,920 | 22.4 | 717 | 43 | 16 | 0.9 | 4,306 | 8.1 |
| " 1956-60. | 16,567 | 29.0 | 4,640 | 8.1 | 11,927 | 20.9 | 567 | 34 | 8 | 0.5 | 4,357 | 7.6 |
| 1959. | 16,486 | 28.3 | 4,747 | 8.2 | 11,739 | 20.1 | 536 | 33 | 6 | 0.4 | 4,310 | 7.4 |
| 1960 | 16,341 | 27.7 | 4,670 | 7.9 | 11,671 | 19.8 | 488 | 30 | 10 | 0.6 | 4,430 | 7.5 |
| 1961...... | 16,590 | 27.7 | 4,695 | 7.9 | 11,895 | 19.8 | 434 | 26 | 8 | 0.5 | 4,504 | 7.5 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| Av. 1941-45..... | 97,906 | 28.4 | 34,273 | 9.9 | 63,633 | 18.5 | 6,690 |  | ${ }_{227} 18$ | 3.2 | 33,126 <br> 34 <br> 874 | 9.6 |
| " 1946-50. | 115,496 128,523 | 30.4 30.0 | 33,723 <br> 34,269 | 8.9 8.0 | 81,773 94,254 | 18.5 22.5 | 6,205 5,662 | 54 | 227 149 | 1.2 | 34,844 <br> 35,54 | 8.3 |
| " 1956-60 | 139,844 | 28.6 | 35,714 | 7.3 | 104, 130 | 21.3 | 5,000 | 36 | 105 | 0.7 | 36,798 | 7.5 |
| 1959. | 142,383 | 28.3 | 36,390 | 7.2 | 105,993 | 21.1 | 4,735 | 33 | 104 | 0.7 | 37,124 | 7.4 |
| 1960. | 137,850 | 26.8 | 35,129 | 6.8 | 102,721 | 20.0 | 4,159 | 30 | 85 | 0.6 | 36,211 | 7.0 |
| 1961............... | 137,174 | 26.1 | 37,044 | 7.0 | 100,130 | 19.1 | 4,319 | 31 | 89 | 0.6 | 35,943 | 6.8 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| Av. 1941-45...... | 77,738 | 19.9 | 39,738 | 10.2 | 38,000 | 9.7 | 3,276 3,795 | 42 | 197 | 2.5 | 38,042 | 10.3 |
| " 1946-50. | 105, 161 | 24.6 | 42,214 | 9.9 | 62,947 | 14.7 |  | 36 28 | 129 | 1.2 | ${ }_{45}^{4}, 213$ | 9.1 |
| " 1951-55. | 128, 861 | 26.1 26.4 | 44,715 49,431 | 9.0 8.5 | 84,146 103,257 | 17.1 | 3,634 3,741 | 25 | 65 | 0.4 | 46, 482 | 8.0 |
| " 1956-60. | 152,688 | 26.4 | 49,431 | 8.5 | 106,524 | 17.8 | $\stackrel{3}{3,773}$ | 24 | 73 | 0.5 | 46,598 | 7.8 |
| 1960. | 159,245 | 26.1 | 51,484 | 8.4 | 107,761 | 17.7 | 3,745 | 24 | 55. | 0.3 | 45,855 | 7.5 |
| 1961. | 157,663 | 25.3 | 50,997 | 8.2 | 106,666 | 17.1 | 3,626 | 23 | 67 | 0.4 | 44,434 | 7.1 |
| Manitoba- |  |  |  |  |  |  |  |  |  |  |  | 10.0 |
| Av. ${ }_{\text {c }} 1941-45 . . . .$. | 15,831 19,325 | 21.8 25.9 | 6,633 6,702 | 9.1 9.0 | 9,198 12,623 | 12.7 16.9 | 814 810 | 51 42 | $\stackrel{41}{24}$ | 1.3 | 7,605 | 10.2 |
| " 1951-55...... | 21,321 | $\xrightarrow{26.4}$ | 6,775 | 8.4 | 14,546 | 18.0 | 675 | 32 | 15 | 0.7 | 7,104 | 8.8 |

For footnotes, see end of table.

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2.-Summary of Principal Vital Statistics for Incorporated Urban Centres of $\mathbf{1 0 , 0 0 0}$ Population or Over, ${ }^{1}$ Average 1956-60 and 1961

Note.-Urban centres are designated in this table by the following abbreviations: c. = city, t. = town, vl. = village, s.m. =suburban municipality, and d.m. = district municipality.

| Province and Urban Centre | Live Births |  |  | Deaths |  |  | Natural Increase ${ }^{2}$ |  |  | Infant Mortality ${ }^{3}$ |  |  | Marriages ${ }^{\text {4 }}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\underset{1956-60}{\text { Av. }}$ | 1961 |  | $\underset{1956-60}{\text { Av. }}$ | 1961 |  | $\underset{1956-60}{\text { Av. }}$ | 1961 |  | $\underset{1956-60}{\text { Av. }}$ | 1961 |  | $\underset{1956-60}{\text { Av. }}$ | 1961 |  |
|  | No. | No. | Rate ${ }^{5}$ | No. | No. | Rate ${ }^{5}$ | No. | No. | Rate ${ }^{5}$ | No. | No. | Rate ${ }^{6}$ | No. | No. | Rate ${ }^{5}$ |
| Newfoundland- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Corner Brook, c. | 940 | 912 | 36.2 | 127 | 140 | 5.6 | 813 | 772 | 30.6 | 36 | 42 | 46 | 210 | 196 | 7.8 |
| St. John's, c..... | 2,010 | 1,988 | 31.2 | 521 | 509 | 8.0 | 1,489 | 1,479 | 23.2 | 28 | 49 | 25 | 689 | 718 | 11.3 |
| Prince Edward IslandCharlottetown, c........ | 456 | 452 | 24.7 | 210 | 217 | 11.8 | 246 | 235 | 12.9 | 36 | 18 | 40 | 172 | 161 | 8.8 |
| Nova Scotia- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Amherst, t... | 263 | 229 | 21.2 | 93 | 114 | 10.6 | 170 | 115 | 10.6 | 33 | 5 | 22 | 114 | 113 | 10.5 |
| Dartmouth, c | 881 | 1,727 | 36.8 | 136 | 223 | 4.7 | 745 | 1,504 | 32.1 | 24 | 46 | 27 | 177 | 298 | 6.3 |
| Glace Bay, t . | 623 | 563 | 23.3 | 219 | 241 | 10.0 | 404 | 322 | 13.3 | 44 | 23 | 41 | 181 | 159 | 6.6 |
| Halifax, c... | 2,441 | 2,226 | 24.1 | 762 | 712 | 7.7 | 1,679 | 1,514 | 16.4 | 28 | 55 | 25 | 1,112 | 1,045 | 11.3 |
| New Waterford, t . | 356 | 359 | 33.9 | 85 | 93 | 8.8 | 271 | 266 | 25.1 | 31 | 20 | 56 | 1, 85 | 177 | 7.3 |
| Sydney, c........ | 950 | 909 | 27.0 | 259 | 281 | 8.4 | 691 | 628 | 18.6 | 14 | 26 | 29 | 275 | 269 | 8.0 |
| Truro, t... | 353 | 323 | 26.0 | 112 | 129 | 10.4 | 241 | 194 | 15.6 | 35 | 3 | 9 | 153 | 116 | 9.3 |
| New Brunswick- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Edmundston, c... | 365 | 316 | 24.7 | 71 | 70 | 5.5 | 294 | 246 | 19.2 | 23 | 7 | 22 | 97 | 92 | 7.2 |
| Fredericton, c. | 497 | 574 | 29.2 | 169 | 176 | 8.9 | 328 | 398 | 20.3 | 20 | 12 | 21 | 247 | 267 | 13.6 |
| Lancaster, c. | 261 | 288 | 20.8 | 97 | 99 | 7.1 | 164 | 189 | 13.7 | 23 | 2 | 7 | 65 | 98 | 7.1 |
| Moncton, c.. | 1,050 | 1,126 | 25.7 | 274 | 295 | 6.7 | 776 | 831 | 19.0 | 22 | 24 | 21 | 348 | 362 | 8.3 |
| Saint John, c. | 1,499 | 1,568 | 28.4 | 589 | 586 | 10.6 | 910 | 982 | 17.8 | 27 | 35 | 22 | 532 | 529 | 9.6 |
| Quebec- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Alma, c. | 500 | 469 | 35.2 | 65 | 77 | 5.8 | 435 | 392 | 29.4 | 42 | 24 | 51 | 107 | 89 | 6.7 |
| Arvida, c. | 429 | 358 | 24.8 | 41 | 37 | 2.6 | 388 | 321 | 22.2 | 19 | 3 | 8 | 77 | 84 | 5.8 |
| Asbestos, $t . . .$. | 369 | 281 | 25.4 | 54 | 55 | 5.0 | 315 | 226 | 20.4 | 31 17 | 13 | 46 | 67 10 | 84 | 7.6 |
| Beaconsfield, t......... | 198 | 732 | 20.8 | 32 152 | $\begin{array}{r}44 \\ 154 \\ \hline\end{array}$ | 4.4 5.7 | 166 571 | 165 578 | 16.4 21.5 | 17 32 | 2 19 | 10 26 | 10 204 | 28 | 2.8 7.4 |
| Charlesbourg, c........ | 232 | 345 | 24.1 | 45 | 87 | 6.1 | 187 | 258 | 18.0 | 31 | 10 | 29 | 50 | 52 | 3.6 |
| Chicoutimi, c... | 1,004 | 997 | 31.5 | 188 | 179 | 5.7 | 816 | 818 | 25.8 | 46 | 45 | 45 | 223 | 217 | 6.9 |
| Chicoutimi North, $\mathbf{c}$. | 1,336 | 383 | 34.1 | 36 | 46 | 4.1 | 300 | 337 | 30.0 | 26 | 14 | 37 | 54 | 71 | 6.3 |
| Chomedey, c..... | 752 | 910 | 29.9 | 96 | 139 | 4.6 | 656 | 771 | 25.3 | 23 | 22 | 24 | 82 | 108 | 3.5 |
| Côte St. Luc, c. | 238 | 263 | 19.8 | 34 | 37 | 2.8 | 204 | 226 | 17.0 | 24 | 3 | 11 | 4 | 13 | 1.0 |











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2.-Summary of Principal Vital Statistics for Incorporated Urban Centres of 10,000 Population or Over, ${ }^{\mathbf{1}}$ Average 1956-60 and 1961-continued

| Province and Urban Centre | Live Births |  |  | Deaths |  |  | Natural Increase ${ }^{2}$ |  |  | Infant Mortality ${ }^{3}$ |  |  | Marriages ${ }^{4}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\underset{1956-60}{\text { Av. }}$ | 1961 |  | $\underset{1956-60}{\text { Av. }}$ | 1961 |  | $\underset{1956-60}{\mathrm{Av}}$ | 1961 |  | $\underset{1956-60}{\text { Av. }}$ | 1961 |  | $\underset{1956-60}{\text { Av. }}$ | 1961 |  |
|  | No. | No. | Rate ${ }^{5}$ | No. | No. | Rate ${ }^{5}$ | No. | No. | Rate ${ }^{5}$ | No. | No. | Rate ${ }^{6}$ | No. | No. | Rate ${ }^{5}$ |
| Quebec-concluded |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Valley field, c..... | 791 | 726 | 26.6 | 196 | 223 | 8.2 | 595 | 503 | 18.4 | 35 | 25 | 34 | 239 | 186 | 6.8 |
| Verdun, c.... | 1,823 | 1,646 | 21.0 | 617 | 601 | 7.7 | 1,206 | 1,045 | 13.3 | 23 | 31 | 19 | 620 | 502 | 6.4 |
| Victoriaville, t | 517 | 501 | 26.8 | 142 | 168 | 9.0 | 375 | 333 | 17.8 | 43 | 22 | 44 | 153 | 156 | 8.3 |
| Westmount, c.. | 252 | 242 | 9.7 | 275 | 256 | 10.2 | -23 | -14 | -0.5 | 23 | 11 | 45 | 379 | 345 | 13.8 |
| Ontario- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Barrie, c. | 572 | 590 | 27.9 | 158 | 191 | 9.0 | 414 | 399 | 18.9 | 28 | 24 | 41 | 197 | 184 | 8.7 |
| Belleville, c. | 645 | 791 | 25.8 | 229 | 250 | 8.2 | 416 | 541 | 17.6 | 23 | 14 | 18 | 246 | 242 | 7.9 |
| Brampton, t. | ${ }^{389}$ | 547 | 29.6 | 107 | 134 | 7.3 | 282 | 413 | 22.3 | 22 | 13 | 24 | 130 | 143 | 7.7 |
| Brantford, c. | 1,213 | 1,166 | 21.1 | 498 | 543 | 9.8 | 715 | 623 | 11.3 | 22 | 18 | 15 | 464 | 453 | 8.2 |
| Brockville, t. | - 371 | +386 | 21.8 | 164 | 140 | 7.9 | 207 | 246 | 13.9 | 26 | 5 | 13 | 161 | 168 | 9.5 |
| Burlington, t | 719 | 1,127 | 24.0 | 149 | 256 | 5.4 | 570 | 871 | 18.6 | 16 | 18 | 16 | 148 | 210 | 4.5 |
| Chatham, c | 649 | 807 | 27.1 | 251 | 234 | 7.8 | 398 | 573 | 19.3 | 27 | 21 | 26 | 272 | 287 | 9.6 |
| Cobourg, t. | 237 | 269 | 25.3 | 107 | 110 | 10.3 | 130 | 159 | 15.0 | 29 | 9 | 33 | 73 | 69 | 6.5 |
| Cornwall, | 1,162 | 1,261 | 28.9 | 310 | 330 | 7.6 | 852 | 931 | 21.3 | 33 | 33 | 26 | 361 | 331 | 7.6 |
| Dundas, t . | 278 | ${ }^{2} 268$ | 20.8 | 126 | 109 | 8.4 | 152 | 159 | 12.4 | 16 | 6 | 22 | 80 | $\begin{array}{r}91 \\ \hline 188\end{array}$ | 7.0 |
| Eastview, t . | 975 | 1,031 | 42.0 | 119 | 151 | 6.1 | 856 | 880 | 35.9 | 22 | 30 | 29 | 167 | 188 | 7.7 |
| Forest Hill, vl. | 234 | . 225 | 11.0 | 151 | 160 | 7.8 | 83 | 65 | 3.2 | 16 | 4 | 18 | 18 | 7 | 0.3 |
| Fort William, | 1,063 | 1,109 | 24.5 | 343 | 346 | 7.7 | 720 | 763 | 16.8 | 24 | 20 | 18 | 384 | 352 | 7.8 |
| Galt, c....... | 594 | 655 | 23.5 | 235 | 229 | 8.2 | 359 | 426 | 15.3 | 19 | 13 | 20 | 221 | 220 | 7.9 |
| Georgetown, t | 267 | 310 | 30.1 | 47 | 54 | 5.2 | 220 | 256 | 24.9 | 22 | 6 | 19 | 52 | 48 | 4.7 |
| Guelph, c... | 987 | 958 | 24.0 | 332 | 331 | 8.3 | 655 | 627 | 15.7 | 24 | 35 | 37 | 343 | 324 | 8.1 |
| Hamilton, c | 6,524 | 6,678 | 24.4 | 2,234 | 2,362 | 8.6 | 4,290 | 4,316 | 15.8 | 21 | 128 | 19 | 2,413 | 2,295 | 8.4 |
| Kenora, t. | . 287 | . 263 | 24.1 | 102 | 99 | 9.1 | 185 | 164 | 15.0 | 35 | 2 | 8 | -107 | -92 | 8.4 |
| Kingston, c. | 1,358 | 1,439 | 26.9 | 487 | 449 | 8.4 | 871 | 990 | 18.5 | 25 | 41 | 28 | 485 | 516 | 9.6 |
| Kitchener, | 1,783 | 2,021 | 27.1 | 513 | 553 | 7.4 | 1,270 | 1,468 | 19.7 | 21 | 40 | 20 | 581 | 587 | 7.9 |
| Leaside, t . | 225 | 307 | 16.5 | 129 | 170 | 9.2 | -96 | 137 | 7.3 | 15 | 4 | 13 | 87 | 70 | 3.8 |
| Lindsay, t . | 242 | 245 | 21.5 | 131 | 144 | 12.6 | 111 | 101 | 8.9 | 32 | 6 | 24 | 112 | 110 | 9.6 |
| London, c..... | 2,573 | 4,278 | 25.2 | 1,090 | 1,470 | 8.7 | 1,483 | 2,808 | 16.5 | 28 | 96 | 22 | 1,248 | 1,292 | 7.6 |
| Long Branch, v | 331 | 324 | 29.4 | 1.84 | , 71 | 6.4 | 247 | 253 | 23.0 | 25 | 5 | 15 | 90 | 75 | 6.8 |
| Mimico, t....... | 422 | 506 | 27.8 | 106 | 146 | 8.0 | 316 | 360 | 19.8 | 21 | 9 | 18 | 185 | 180 | 9.9 |
| New Toronto, t . | 306 | 365 | 27.3 | 93 | 102 | 7.6 | 213 | 263 | 19.7 | 24 | 12 | 33 | 82 | 74 | 5.5 |
| Niagara Falls, | 559 | 502 | 22.5 | 235 | 225 | 10.1 | 324 | 277 | 12.4 | 24 | 9 | 18 | 397 | 262 | 11.7 |
| North Bay, ${ }^{\text {Oakville, }}$ t. | 723 263 | 682 234 | 28.7 22.6 | 188 80 | 202 74 | 8.5 | 535 183 | 480 160 | 20.2 | 24 | 11 | ${ }_{21}^{16}$ | 280 | 260 | 10.9 |
| Orillia, t.. | 378 | 409 | 26.6 26.7 | 159 | $\begin{array}{r}74 \\ 150 \\ \hline\end{array}$ | 7.1 | ${ }_{219}^{183}$ | 160 259 | 15.5 16.9 | $\stackrel{24}{25}$ | 5 12 | 21 29 | 128 150 | 92 153 | 8.9 10.0 |
| Oshawa, c.. | 1,592 | 1,661 | 26.6 | 361 | 408 | 8.5 | 1,231 | 1,253 | 20.1 | 24 | 35 | 21 | 471 | 466 | 7.5 |


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2.-Summary of Principal Vital Statistics for Incorporated Urban Centres of $\mathbf{1 0 , 0 0 0}$ Population or Over, ${ }^{1}$ Average 1956-60 and 1961-concluded

| Province and Urban Centre | Live Births |  |  | Deaths |  |  | Natural Increase ${ }^{2}$ |  |  | Infant Mortality ${ }^{3}$ |  |  | Marriage ${ }^{4}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \begin{array}{c} \text { Av. } \\ 1956-60 \end{array} \\ \hline \text { No. } \end{gathered}$ | 1961 |  | $\begin{gathered} \text { Av. } \\ 1956-60 \\ \hline \end{gathered}$ <br> No. | 1961 |  | $\begin{gathered} \text { Av. } \\ 1956-60 \\ \hline \end{gathered}$ <br> No. | 1961 |  | $\underset{1956-60}{\text { Av. }}$ | 1961 |  | $\underset{1956-60}{\text { Av. }}$ | 1961 |  |
|  |  | No. | Rate ${ }^{5}$ |  | No. | Rate ${ }^{5}$ |  | No. | Rate ${ }^{5}$ | No. | No. | Rate ${ }^{6}$ | No. | No. | Rate ${ }^{5}$ |
| British Columbia- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Burnaby, d.m...... | 2,477 | 2,261 | 22.6 | 719 | 763 | 7.6 | 1,758 | 1,498 | 15.0 | 20 | 49 | 22 | 498 | 422 | 4.2 |
| Chilliwack, d.m. | 464 | 448 | 24.5 | 124 | 116 | 6.3 | 340 | 332 | 18.2 | 20 | 12 | 27 | 116 | 108 | 5.9 |
| Coquitlam, d.m. | 642 | 756 | 26.0 | 110 | 146 | 5.0 | 532 | 610 | 21.0 | 20 | 14 | 19 | 59 | 73 | 2.5 |
| Dawson Creek, c. | 413 | 465 | 42.5 | 54 | 62 | 5.7 | 359 | 403 | 36.8 | 30 | 11 | 24 | 113 | 97 | 8.9 |
| Delta, d.m...... | 268 | 330 | 22.6 | 81 | 96 | 6.6 | 187 | 234 | 16.0 | 19 | 6 | 18 | 58 | 67 | 4.6 |
| Esquimalt, d.m. | 299 | 284 | 23.6 | 80 | 86 | 7.1 | 219 | 198 | 16.5 | 22 | 11 | 39 | 130 | 96 | 8.0 |
| Kamloops, c.... | 311 | 328 | 32.6 | 131 | 143 | 14.2 | 180 | 185 | 18.4 | 21 | 8 | 24 | 170 | 147 | 14.6 |
| Kelowna, c. . | 236 | 270 | 20.5 | 130 | 129 | 9.8 | 106 | 141 | 10.7 | 25 | 6 | 22 | 139 | 138 | 10.5 |
| Langley, d.m. | 332 | 323 | 22.1 | 140 | 141 | 9.7 | 192 | 182 | 12.4 | 24 | 11 | 34 | 58 | 41 | 2.8 |
| Maple Ridge, d.m. | 346 | 338 | 20.2 | 135 | 152 | 9.1 | 211 | 186 | 11.1 | 21 | 8 | 24 | 88 | 96 | 5.7 |
| Matsqui, d.m..... | 310 | 318 | 22.2 | 101 | 106 | 7.4 | 209 | 212 | 14.8 | 25 | 10 | 31 | 86 | 66 | 4.6 |
| Nanaimo, c.......... | 418 | 366 | 25.9 | 173 | 200 | 14.1 | 245 | 166 | 11.8 | 25 | 13 | 36 | 195 | 224 | 15.8 |
| New Westminster, c. | 640 | 591 | 17.6 | 326 | 328 | 9.7 | 314 | 263 | 7.9 | 18 | 9 | 15 | 551 | 509 | 15.1 |
| North Vancouver, c. | 626 | 608 | 25.7 | 195 | 194 | 8.2 | 431 | 414 | 17.5 | 20 | 11 | 18 | 160 | 119 | 5.0 |
| North Vancouver, d.m | 920 | 902 | 23.1 | 188 | 194 | 5.0 | 732 | 708 | 18.1 | 17 | 16 | 18 | 94 | 94 | 2.4 |
| Oak Bay, d.m........ | 193 | 180 | 10.6 | 193 | 209 | 12.3 | - | -29 | $-1.7$ | 17 | 4 | 22 | 72 | 88 | 5.2 |
| Penticton. c... | 251 | 242 | 17.5 | 111 | 152 | 11.0 | 140 | 90 | 6.5 | 17 | 6 | 25 | 113 | 89 | 6.4 |
| Port Alberni. c. | 323 | 349 | 30.2 | 64 | 72 | 6.2 | 259 | 277 | 24.0 | 27 | 6 | 17 | 107 | 76 | 6.6 |
| Powell River, d.m. | 271 | 255 | 23.7 | 66 | 69 | 6.4 | 205 | 186 | 17.3 | 20 | 2 | 8 | 72 | 59 | 5.5 |
| Prince George, c... | 594 | 584 | 42.1 | 79 | 82 | 5.9 | 515 | 502 | 36.2 | 23 | 16 | 27 | 218 | 245 | 17.7 |
| Prince Rupert, c. | . 371 | 407 | 34.0 | 101 | 114 | 9.5 | 270 | 293 | 24.5 | 41 | 17 | 42 | 108 | 105 | 8.8 |
| Richmond, d.m. | 1,055 | 1,211 | 28.0 | 178 | 213 | 4.9 | 877 | 998 | 23.1 | 18 | 23 | 19 | 116 | 136 | 3.1 |
| Saanich, d.m.. | 1,026 | 1,037 | 21.2 | 384 | 407 | 8.3 | 642 | 630 | 12.9 | 19 | 20 | 19 | 130 | 131 | 2.7 |
| Surrey, d.m... | 1,709 | 1,965 | 27.7 | 455 | 517 | 7.3 | 1,254 | 1,448 | 20.4 | 18 | 41 | 21 | 209 | 235 | 3.3 |
| Trail, c...... | , 318 | - 307 | 26.5 | 80 | 74 | 6.4 | , 238 | , 233 | 20.1 | 19 | 7 | 23 | -99 | -97 | 8.4 |
| Vancouver, c. | 8,211 | 7,247 | 18.8 | 4,580 | 4,558 | 11.9 | 3,631 | 2,689 | 6.9 | 21 | 136 | 19 | 4,568 | 3,900 | 10.1 |
| Vernon, c. | , 251 | . 229 | 22.3 | 100 | - 128 | 12.5 | - 151 | 2, 101 | 9.8 | 28 | 4 | 17 | 146 | 141 | 13.8 |
| Victoria, c............ | 1,236 | 1,042 | 19.0 | 852 | 827 | 15.1 | 384 | 215 | 3.9 | 24 | 20 | 19 | 698 | 595 | 10.8 |
| West Vancouver, d.m. | + 404 | - 379 | 14.9 | 183 | 199 | 7.8 | 221 | 180 | 7.1 | 23 | 9 | 24 | 121 | 135 | 5.3 |



## 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:-

|  | Estimated |
| :---: | :---: |
|  | Average |
| Intercensal | Annual Crude |
| Period | Birth Rate |
|  | (per 1,000 |
|  | Population) |


| $1851-61 \ldots \ldots \ldots \ldots \ldots$ | 45 |
| :--- | :--- |
| $18611-71 \ldots \ldots \ldots \ldots \ldots \ldots$ | 40 |
| $1871-81 \ldots \ldots \ldots \ldots \ldots$ | 37 |
| $1881-91 \ldots \ldots \ldots$ |  |


|  | Estimated |
| :---: | :---: |
| Intercensal | Average |
| Period | Annual Crude |
|  | Birth Rate |
|  | (per 1,000 |
|  | Population) |

1851-61
45
1871-81................... 37
34
1891-1901 ..... 30
1901-11. ..... 31
1911-21 ..... 29

The general trend in the birth rate since 1921 is shown in the chart on p. 227. 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 in 1960 it dropped to 26.8 and in 1961 to 26.1 , a postwar low.

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 while 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, all provinces have had declining or stationary rates since about 1959-60.

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 1930's or early 1940's Newfoundland, in some years New Brunswick and, since 1953, Alberta have had higher birth rates than Quebec. Table 1, pp. 220-221, shows that five provincesNewfoundland, Alberta, New Brunswick, Prince Edward Island and Nova Scotia in that order-had higher crude rates than Quebec in 1961, followed by Saskatchewan, Ontario and Manitoba, and British Columbia.

It should be noted, however, that since these crude rates are based on the total population they do not reflect the fertility of the women of reproductive age 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 44 (see pp. 231-234).

Also contrary to popular impression, since 1953 more babies were born each year in Ontario than in the Province of Quebec; in 1961, 157,663 babies were born to Ontario mothers as compared with 137,174 to Quebec mothers. Altogether, 475,700 children were born in Canada in 1961, 3,575 fewer than the record 479,275 born in 1959 and 2,851 fewer than the number born during 1960 .

Sex of Live Births.-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 1930's. Provincial sex ratios vary much more widely because of the relatively small 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.

## 3.-Sex Ratios of Live Births, 1941-61

Note.-Figures for Newfoundland are included from 1949 and those for the Yukon and Northwest Territories from 1950.

| Year | Males | Females | $\begin{aligned} & \text { Males } \\ & \text { to } 1,000 \\ & \text { Females } \end{aligned}$ Females | Year | Males | Females | Males to 1,000 Females |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. |  | No. | No. | No. |
| 1941. | 131,175 | 124,142 | 1,057 | 1952. | 208,070 | 195,489 | 1,064 |
| 1942. | 140,584 | 131,729 | 1,067 | 1953. | 214,423 | 203,461 | 1,054 |
| 1943. | 145,725 | 137,855 | 1,057 | 1954. | 224,168 | 212,030 | 1,057 |
| 1944. | 146,652 | 137,568 | 1,066 | 1955. | 227, 382 | 215,555 | 1,055 |
| 1945. | 148,912 | 139, 818 | 1,065 | 1956. | 231,697 | 219,042 | 1,058 |
| 1946. | 169,945 | 160,787 | 1,057 | 1957. | 241,073 | 228,020 | 1,057 |
| 1947. | 183, ${ }^{\text {, }}$ | 175,121 | 1,051 | 1958. | 241,675 | 228,443 | 1,058 |
| 1948. | 178,123 188 | 169,184 177,800 | 1,053 1,059 | 1959. | 246,073 | 233,202 | 1,055 |
| 1950. | 191,413 | 180, 596 | 1,060 | 1960. | 246,029 | 232, 522 | 1,058 |
| 1951. | 195,918 | 185, 174 | 1,058 | 1961. | 244,403 | 231,297 | 1,057 |

Hospitalized Births.-In 1961 over 96 p.c. of all Canadian births occurred in hospital as compared with 88 p.c. five years previously. Table 4 shows the rise in hospitalized births in each province since 1931. Before the initiation in 1958 of the federal-provincial hospital insurance programs-in which all provinces were participating in 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, 1931-61

| Year | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Yukon | N.W.T. | Canada ${ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | p.c. | p.c. | p.c. | p.c. | p.c. | p c. | p.c. | p.c. | p.c. | p.c. | p.c. | p.c. |
| 1931... | 11.2 | 19.0 | 12.1 | 7.3 | 38.2 | 43.6 | 32.5 | 47.8 | 65.0 | . |  | 26.8 |
| 1941.... | 32.7 | 50.4 | 30.8 | 17.6 | 67.5 | 73.6 | 63.2 | 77.1 | 87.3 | $\because$ |  | 48.9 |
| 1951.... | 88.3 | 87.2 | 70.7 83 | 53.0 | ${ }_{96} 93.1$ | 93.1 | 95.2 | 93.6 | 97.3 | 87.4 | 32.8 | 79.1 |
| 1956.... | 93.6 95.2 | 93.3 93.9 | 83.4 84.7 | 66.6 71.2 | 96.7 97.3 | 95.6 95.8 | 97.7 97.6 | 95.0 96.6 | 98.1 98.3 | 89.3 87.7 | 45.5 44.6 | 86.5 88.4 |
| 1957.... | 96.7 | 95.1 | 86.8 | 75.6 | 97.9 | 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 | 98.0 | 98.6 | 88.6 | 45.7 | 93.1 |
| 1960.... | 99.4 | 98.6 | 97.7 | 85.2 | 99.0 | 98.0 | 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 | 99.8 | 98.6 | 98.9 | 92.8 | 57.1 | 96.9 |

[^57]Births in Urban Centres.-Table 2, pp. 222-226, shows the number of births in 1961, as compared with the average for 1956-60, to mothers residing in each urban centre of 10,000 population or over. The table also shows crude birth rates for each centre based on the 1961 Census population. However, comparison of such rates as between different centres must be made with caution since, as previously noted, they are influenced by the proportions-and the ages-of the married females in their populations, as well as by the actual fertility of those females. Because populations of urban centres are not available for intercensal years, comparable rates cannot be computed for the 1956-60 period.

Illegitimacy.*-In 1961, over 4 p.c. of the live births in Canada were illegitimate. This percentage is low compared with that of many countries of the world.
5.-Illegitimate Live Births and Percentages of Total Live Births, by Province, 1941-61

| Year | Nfld. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Yukon | N.W.T | Canada ${ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Illegitmate Live Births |  |  |  |  |  |  |  |  |  |  |  |  |
|  | No. | No. | No. | No. |  |  |  |  | No. | No. | No. | No. | No. |
| Av. 1941-45 | 406 | 107 | 1,074 | 591 | ${ }_{3}^{3,003}$ | 3,751 | ${ }_{766}^{597}$ | ${ }_{914}^{673}$ | ${ }^{852}$ | ${ }^{889}$ | .. | .. | 11,536 |
| " ${ }_{1951-55}^{1946-50}$ | ${ }_{426}^{441}$ | 152 | $\xrightarrow{1,244} 1$ | 751 659 | - | ${ }^{4,256} 4$ | ${ }_{969}^{766}$ | - 1,044 | 1, 1,481 | 1, $\begin{aligned} & 1,816 \\ & 1,898\end{aligned}$ | 53 | 50 | +14,375 |
| " 1956-60 | 587 | 139 | 1,201 | 687 | 4,675 | 4,891 | 1,166 | 1,194 | 1,941 | 2,505 | 72 | 102 | 19, 160 |
| $\begin{aligned} & 1959 \ldots \ldots . . \\ & 1960 . \ldots . . . \\ & 1961 \ldots \ldots . . \end{aligned}$ | 550 | 140 | 1,230 | 708 |  | 5, 218 | 1,226 |  |  |  | 76 |  | 20,221 |
|  | 626 | 126 | 1,249 | ${ }_{7}^{632}$ | 4,902 | 5,119 | 1,356 | 1,326 | 2,197 | $\stackrel{2,673}{ }$ | 84 | 123 | ${ }^{20,413}$ |
|  | 666 | 135 | 1,334 | 735 | 4,931 | 5,456 | 1,469 | 1,419 | 2,430 | 2, 588 | 94 | 141 | 21,490 |
|  | Percentages of Total Live Births |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 4.4 | 4.9 | 7.1 | 4.5 | 3.1 | 4.8 | 3.8 | 3.6 | 4.5 | 5.0 |  |  | 4.2 |
|  | 3.6 | 5.3 | 6.9 | 4.5 | 2.9 | 4.0 | 4.0 | 4.2 | 4.9 | 5.9 |  |  | 4.1 |
|  | 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 |
|  | 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 |
| $\begin{aligned} & 1959 \ldots \ldots . . \\ & \begin{array}{l} 1960 \ldots \ldots \\ 1961 . . . . . . . \end{array} \end{aligned}$ |  | 5.1 |  |  | 3.4 | 3.3 | 5.4 | 5.3 | 5.6 |  | 14.2 |  |  |
|  | 4.1 | 4.6 | 6.5 | 3.9 | 3.6 | 3.2 | 5.8 | 5.5 | 5.6 | 6.7 6.9 | ${ }_{15}^{15.6}$ | ${ }_{12}^{11.2}$ | ${ }_{4.5}^{4.3}$ |
|  | 4.3 | 4.8 | 6.9 | 4.4 | 3.6 | 3.5 | 6.3 | 5.9 | 6.2 | 6.9 | 16.8 | 12.6 | 4.5 |

[^58]
## 6.-Single and Multiple Births, Live and Stillborn, 1958-61

| Confinements and Births | Numbers |  |  |  | Percentages |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1958 | 1959 | 1960 | 1961 | 1958 | 1959 | 1960 | 1961 |
| Confinements.................... | 471,436 | 480,524 | 479,786 | 176,547 | 100.0 | 100.0 | 100.0 | 100.0 |
| Single........................... | 466,065 | 475,266 | 474,613 | 471,410 | 98.9 | 98.9 | 98.9 | 98.9 |
| Twin.. | 5,334 | 5,205 | 5,112 | 5,102 | 1.1 | 1.1 | 1.1 | 1.1 |
| Triplet.. | 37 | 53 | 59 | 35 | -- | $\cdots$ | -- | -- |
| Quadruplet.. | - | - | 2 | - | - | - | -- | - |
| Births............................. | 476,844 | 485,835 | 485,022 | 481,719 | 100.0 | 100.0 | 100.0 | 100.0 |
| Single- <br> Live. | 459,652 | 469,022 | 468,469 | 465,715 | 98.6 | 98.7 | 98.7 | 98.8 |
| Stillborn.. | 6,413 | 6,244 | 6,144 | 5,695 | 1.4 | 1.3 | 1.3 | 1.2 |
| Twin- <br> Live. | 10,360 | 10,110 | 9,907 | 9,885 | 97.1 | 97.1 | 96.9 | 96.9 |
| Stillborn....................... | 308 | 300 | 317 | 319 | 2.9 | 2.9 | 3.1 | 3.1 |
| Triplet- <br> Live. | 106 | 143 | 168 | 100 | 95.5 | 89.9 | 94.9 | 95.2 |
| Stillborn. | 5 | 16 | 9 | 5 | 4.5 | 10.1 | 5.1 | 4.8 |
| QuadrupletLive. | - | - | 7 | - | - | - | 87.5 | - |
| Stillborn....................... | - | - | 1 | - | - | - | 12.5 | - |
| Totals, Live Births. . . . . . | 470,118 | 479,275 | 478,551 | 475,700 | 98.6 | 98.6 | 98.7 | 98.8 |
| Totals, Stillborn......... | 6,726 | 6,560 | 6,471 | 6,019 | 1.4 | 1.4 | 1.3 | 1.2 |

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, of course, 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 therefore 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 has its uses, depending on the comparisons required. The two types-generally referred to as crude fertility rates-are compared in Table 7, and indicate the variations in each type as between provinces and the provincial trends over the five years 1957-61.

[^59]
## 7.-Crude Fertility Rates, by Province, 1957-61

| Province or Territory | 1957 | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Per 1,000 Total Women 15-44 Years of Age ${ }^{1}$ |  |  |  |  |
| Newfoundland. | 190.0 | 181.3 | 178.8 | 181.7 | 183.5 |
| Prince Edward Island. | 147.8 | 141.0 | 148.6 | 148.6 | 154.6 |
| Nova Scotia. | 137.5 | 134.2 | 134.5 | 134.6 | 135.3 |
| New Brunswick | 153.3 | 146.4 | 146.2 | 144.6 | 146.0 |
| Quebec... | 135.8 | 132.7 | 131.3 | 124.8 | 121.8 |
| Manitoba. | 125.6 | 121.5 | 126.8 | 128.5 | 127.8 |
| Saskatchewan. | 136.8 | 136.4 | 138.4 | 137.3 | 136.6 |
| Alberta. | 146.7 | 147.5 | 148.5 | 148.0 | 143.8 |
| British Columbia | 127.6 | 126.9 | 127.6 | 126.4 | 120.6 |
| Yukon Territory ..... | 190.0 | 181.9 | 214.8 | 199.3 | 187.2 |
| Northwest Territories. | 243.2 | 255.4 | 260.5 | 266.8 | 253.6 |
| Can | 134.0 | 131.6 | 132.3 | 130.2 | 127.6 |
|  | Per 1,000 Married Women 15-44 Years of Age ${ }^{1}$ |  |  |  |  |
| Newfoundland .................................. | 284.5224.2 | 273.0214.9 | 270.9222.4 | 273.4224.8 | 275.8232.0 |
|  |  |  |  |  |  |
| Nova Scotia.... | 194.7 | 189.5 | 191.3 | 192.0 | 190.8 |
| New Brunswick | 229.4 | 217.4 | 214.1 | 210.6 | 217.1194.0 |
| Quebec..... | 218.9 |  |  |  |  |
| Ontario. | 169.5 | 166.3 | 167.9 | 167.8 | 194.0 164.5 |
| Manitoba. | 174.7 | 168.1 | 175.4 | 177.0189.7 | 174.2185.8 |
| Saskatchewan. | 189.9 | 188.9 |  |  |  |
| Alberta....... | 194.4 | 194.4 | 194.8 | 189.7 194.5 | 185.8 186.3 |
| British Columbia | 163.7 | 163.1 | 163.4 | 162.8 | 155.7207.2320.8 |
| Yukon Territory | .. | . | . | .. |  |
| Northwest Territories. | .. | . | .. |  | 320.8 |
| Canada²................................ | 190.8 | 186.6 | 187.0 | 184.1 | 180.2 |

${ }^{1}$ Since the number of births to women over 44 is quite small, rates are here restricted to women under 45. ${ }^{2}$ Excludes the Yukon and Northwest Territories.

The number of infants born in relation to every 1,000 women in the population between the ages of 15 and 45 dropped from 134 in 1957 to about 128 in 1961. However, the ratio varied among the provinces from 120 to 190 over the five-year period; Newfoundland, Prince Edward Island, New Brunswick and Alberta had, on the whole, the highest rates and British Columbia, Ontario, Quebec and Manitoba, in that order, the lowest. The average annual number of infants born to every 1,000 married women ranged from 180 to 191 during the same period. According to this measure, the five eastern provinces had, on the whole, the highest rates and the five most western provinces the lowest; provincial rates ranged from 156 to 285 . The provincial rates declined in varying degree during the period, notably in 1960 and 1961.

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 1941-61, the latter for census years only from 1941, since population data are not available for these by detailed age groups for intercensal years.

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 rates 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 1930's the rate varied between 1.3 and 1.5 and since World War II has ranged between 1.7 and almost 2.0 ; in 1960 the rate stood at 1.893 and in 1961 at 1.868 , still almost double the number required for the population to replace itself. With minor exceptions, provincial reproduction rates are also well above the replacement level.

## 8.-Fertility Rates per 1,000 Women, by Age Group, 1941-61

(Exclusive of Newfoundland for all years and the Yukon and Northwest Territories for 1941-49)

| Year | Age Group |  |  |  |  |  |  | Gross 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 |
| 1942. | 32.0 | 145.1 | 168.7 | 128.0 | 83.0 | 32.3 | 3.6 | 1.434 |
| 1943. | 32.1 | 146.8 | 175.4 | 131.9 | 86.5 | 31.9 | 3.5 | 1.478 |
| 1944. | 31.3 | 143.3 | 168.7 | 134.1 | 88.1 | 33.0 | 3.4 | 1.457 |
| 1945. | 31.6 | 143.3 | 168.8 | 134.3 | 90.3 | 33.5 | 3.7 | 1.462 |
| 1946. | 36.5 | 169.6 | 191.4 | 146.0 | 93.1 | 34.5 | 3.8 | 1.640 |
| 1947.. | 42.6 43.2 | 189.1 181.1 | 206.4 197.6 | 150.5 | 93.1 89.0 | 34.1 32.6 | 3.3 3.3 | 1.753 1.676 |
| 1949. | 45.2 | 181.5 | 201.2 | 139.7 | 88.8 | 31.5 | 3.2 | 1.678 |
| 1950. | 46.0 | 181.3 | 200.6 | 141.3 | 87.9 | 30.8 | 3.0 | 1.678 |
| 1951. | 48.1 | 188.7 | 198.8 | 144.5 | 86.5 | 30.9 | 3.1 | 1.701 |
| 1952. | 50.4 | 201.0 | 205.2 | 150.7 | 87.4 | 30.7 | 2.8 | 1.763 |
| 1953. | 52.0 | 208.2 | 208.4 | 153.2 | 88.1 | 31.2 | 2.9 | 1.812 |
| 1954. | 54.3 | 217.4 | 213.2 | 156.5 | 88.5 | 32.4 | 3.2 | 1.861 |
| 1955. | 54.2 | 218.3 | 215.1 | 153.8 | 89.8 | 32.3 | 2.9 | 1.863 |
| 1956. | 55.9 | 222.2 | 220.1 | 150.3 | 89.6 | 30.8 | 2.9 | 1.874 |
| 1957. | 60.2 | 227.1 | 224.1 | 149.4 | 90.7 | 30.7 | 2.8 | 1.907 |
| 1958. | 59.2 | 226.5 | 223.3 | 147.9 | 87.6 | 28.9 | 2.7 | 1.886 |
| 1959. | 60.4 | 233.8 | 226.7 | 147.7 | 87.3 | 28.5 | 2.7 | 1.915 |
| 1980. | 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 | 1.868 |
|  | 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 | ... |
| 1956. | 551.5 | 381.7 | 265.5 | 169.8 | 101.0 | 35.6 | 3.4 | ... |
| 1961. | 541.2 | 374.4 | 255.6 | 161.4 | 89.9 | 32.1 | 2.8 | ... |

Table 8 indicates that in 1961, 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 25,234 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 219 for women in the age group 25-29, which is closer to one in five. However, among married women, teenage mothers have
consistently had the highest fertility, with one out of two bearing a child each year on the average, while almost four out of every 10 married women in their early 20 's had a child every year as compared with about one in four for women in their late 20's.

During and since World War II, up to 1960 , the fertility rates for young mothersparticularly those under 25-have increased, those for women in their late 20's and in their 30 's have remained relatively stable, and those for women over 40 have declined. Although the fertility rate for the teenage group is highest, over half of the total infants born each year are born to mothers in their 20's (see Table 9).

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, as well as the average age of parents.

Over 7 p.c. of the legitimate children born in 1961 were born to mothers under 20 years of age, in over one third of the births the mother was under 25 years, and in almost two thirds, under 30 years; in one out of six births the father was under 25 years of age, and in almost 48 p.c. of all births the father was under 30 years. On the other hand, over one third ( 38.1 p.c.) of the illegitimate infants born were born to mothers under 20 years of age and an additional one third to mothers under 25 years. The average age of all the married mothers to whom a child was born in 1961 was slightly over 28 , and of the fathers 31.4 years; ten years ago the average ages of the parents were 28.4 and 32.1 , and thirty years ago 29.2 and 33.6 , respectively.

## 9.-Live Births, by Age of Parents, 1961

(Exclusive of Newfoundland)

| Age Group | Legitimate |  |  |  | Illegitimate <br> Mothers |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Fathers |  | Mothers |  |  |  |
|  | No. | p.c. | No. | p.c. | No. | p.c. |
| Under 20 years. | 4,804 | 1.1 | 31,884 | 7.3 | 7,744 | 38.1 |
| Under 15 years. | , | .. | 34 | - | 196 | 1.0 |
| 15 years..... | .. | .. | 812 | 0.1 | 477 | 2.8 |
| 16 " 17 | . | $\cdots$ | 1,578 | 0.4 | 1,074 | 5.8 |
| 18 " | $\cdots$ | $\because$ | 4,720 | 1.1 | 1,663 2,176 | ${ }_{10.7}^{8.2}$ |
| 19 " |  | $\cdots$ | 15,475 | 3.5 | 2,158 | 10.6 |
| 20-24 " | 75,100 | 17.2 | 128,859 | 29.3 | 6,841 | 33.6 |
| 25-29 " | 130, 274 | 29.8 | 124,681 | 28.4 | 2,889 | 14.2 |
| 30-34 " | 108,981 | 24.9 | 87,396 | 19.9 | 1,645 | 8.1 |
| 35-39 " | 67,569 | 15.4 | 49,942 | 11.4 | 909 | 4.5 |
| 40-44 " | 32,700 | 7.5 | 15,296 | 3.5 | 286 | 1.4 |
| 45-49 " | 12,920 | 3.0 | 1,128 | 0.3 | 18 | 0.1 |
| 50 years or over | 5,320 | 1.2 | 17 | -- | - | - |
| Totals, Stated Ages | 437,668 | 100.0 | 439,203 | 100.0 | 20,332 | 100.0 |
| Ages not stated. | 1,617 | ... | 82 | ... | 492 | ... |
| Totals, All Ages. | 439,285 | 100.0 | 439,285 | 100.0 | 20,524 | 100.0 |
| Average ages. | 31.4 |  | 28.1 |  | 23.6 |  |

Order of Birth.-Table 10 shows the order of birth of all live-born infants in 1961 according to the age of the mother. As would be expected, 29,105 or three out of every four of the 39,628 infants born to mothers under 20 years of age were first children, whereas almost six out of every ten of the children born to mothers of 20-24 years were second or later children. This is a reflection of the earlier marriages and heavy fertility of recent years. In 1961, 230 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， 1961

（Exclusive of Newfoundland）

| Order of Birth of Child | Age of Mother |  |  |  |  |  |  |  |  |  | Per－ centage Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { Under } \\ & 15 \end{aligned}$ | 15－19 | 20－24 | 25－29 | 30－34 | 35－39 | 40－44 | $\begin{gathered} 45 \\ \text { or } \\ \text { Over } \end{gathered}$ | Age Not Stated | $\underset{\text { All }}{\text { All }}$ |  |
|  | No． | No． | No． | No． | No． | No． | No． | No． | No． | No． |  |
| 1st child．．． | 228 | 28，877 | 54，688 | 22，868 | 8，381 | 3，000 | 645 | 30 | 469 | 119，186 | 25.9 |
| 2nd＂ | 2 | 8，624 | 44，460 | 32，953 | 14，541 | 5，078 | 1，063 | 45 | 36 | 106，802 | 23.2 |
| 3 rd | － | 1，628 | 22， 809 | 30，239 | 18，756 | 7，838 | 1，592 | 87 | 9 | 82，958 | 18.0 |
| 4th＂ | － | 243 | 9，192 | 19，483 | 16，049 | 8,239 | 1，913 | 113 | 13 | 55，245 | 12.0 |
| 5th＂ | 二 | 24 | 3，244 | 10，985 | 11，019 | 7，031 | 2，007 | 104 | 7 | 34，421 | 7.5 |
| 6th | － | 2 | 968 | 5，822 | 7，347 | 5，275 | 1，558 | 115 | 4 | 21，091 | 4.6 |
| 7th＂ | － | － | 261 | 2，887 | 4，886 | 3， 818 | 1，348 | 111 | 8 | 13，319 | 2.9 |
| 8 th＂ | － | － | 51 | 1，417 | 3，327 | 2，997 | 1，196 | 80 | 3 | 9，071 | 2.0 |
| 9th＂ | － | － | 21 | 545 | 2，145 | 2，331 | 921 | 75 | － | 6，038 | 1.3 |
| 10th＂ | － | － | 3 | 246 | 1，229 | 1,727 | 828 | 64 | － | 4，097 | 0.9 |
| 11th＂ | － | － | 2 | 85 | － 712 | 1，220 | 650 | 62 | 1 | 2，732 | 0.6 |
| 12th＂ | － | － | － | 28 | 374 | 871 | 523 | 66 | 1 | 1，863 | 0.4 |
| 13th＂ | － | － | 1 | 8 | 171 | 650 | 406 | 57 | － | 1，293 | 0.3 |
| 14th＂ | － | － | － | 3 | 63 | 369 | 317 | 44 | － | 796 | 0.2 |
| 15th＂ | － | － | － | 1 | 26 | 197 | 232 | 40 | 1 | 497 | 0.1 |
| 16th＂ | － | － | － | － | 12 | 106 | 145 | 28 | － | 291 | 0.1 |
| 17th＂ | － | － | － | － | 1 | 51 | 99 | 14 | － | 165 | －－ |
| 18th＂ | － | － | － | － | 2 | 27 | 60 | 11 | － | 100 | －－ |
| 19th＂ | － | － | － | － | － | 14 | 32 | 4 | － | 50 | －－ |
| 20 th or over | 二 | 二 | 二 | － | － | 12 | 47 | 13 | － 2 | 72 | －－ |
| Not stated． | － | － | － | － | － | － | － | － | 22 | 22 |  |
| Totals | 230 | 39，398 | 135，700 | 127，570 | 89，041 | 50，851 | 15，582 | 1，163 | 574 | 460，109 | 100.0 |

Table 11 summarizes the pattern of family formation since 1941．The results of the immediate postwar＇baby boom＇are obvious－ 57.9 p．c．of the infants born in 1947 were first or second children while fewer than half of the 1961 babies were first or second children．

11．－Percentage Distribution of Legitimate Live Births，by Order of Birth，1941－61
（Exclusive of Newfoundland for all years and the Yukon and Northwest Territories for 1941－49）

| Year | 1st Child | 2nd Child | 3rd Child | 4th and Later Cbildren | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1941．． | 32.7 | 21.8 | 13.5 | 32.0 | 100.0 |
| 1942. | 32.8 | 23.1 | 13.4 | 30.6 | 100.0 |
| 1943. | 32.2 | 23.7 | 14.2 | 29.9 | 100.0 |
| 1944. | 30.0 | 24.2 | 14.9 | 30.9 | 100.0 |
| 1945. | 28.9 | 24.3 | 15.4 | 31.4 | 100.0 |
| 1946. | 31.0 | 24.8 | 15.2 | 29.0 | 100.0 |
| 1947. | 33.0 | 24.9 | 15.0 | 27.2 | 100.0 |
| 1948. | 29.6 | 26.0 | 15.9 | 28.5 | 100.0 |
| 1949. | 27.8 | 26.6 | 16.8 | 28.8 | 100.0 |
| 1950. | 26.7 | 26.2 | 17.4 | 29.6 | 100.0 |
| 1951. | 26.7 | 25.8 | 17.6 | 29.9 | 100.0 |
| 1952. | 26.9 | 24.8 | 17.9 | 30.3 |  |
| 1953. | 26.5 | 25.0 | 18.0 | 30.6 | 100.0 |
| 1954. | 26.1 | 24.6 | 18.0 | 31.2 | 100.0 |
|  | 25.5 | 24.4 | 18.2 | 31.9 | 100.0 |
|  | 25.2 | 24.3 | 18.3 | 32.2 | 100.0 |
| $1957 .$ | 25.6 | 23.9 | 18.3 | 32.2 | 100.0 |
| 1958. | 25.4 | 23.8 | 18.2 | 32.6 | 100.0 |
| 1960. | 24.8 24.5 | 24.0 23.8 | 18.2 | 32.9 | 100.0 |
| 1961. | 24.1 | 23.6 | 18.5 | 33.1 33.8 | 100.0 100.0 |

Stillbirths.*-The 6,019 stillbirths in 1961 represented a ratio of 12.7 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 half over the past quarter-century. Although the variations between provincial rates have never been wide, rates in some provinces 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 has been narrowing in recent years; in 1959, for example, the rate for unmarried mothers was actually lower than that for married mothers, but this was reversed again in 1960 and 1961.
12.-Stillbirths and Rates per $\mathbf{1 , 0 0 0}$ Live Births, by Province, 1941-61

${ }^{1}$ Exclusive of Newfoundland for all years and the Yukon and Northwest Territories for 1941-50. ${ }^{2}$ 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 .

[^60]The average age of mothers who bore stillborn children in 1961 was 30.2 years; as shown in Table 9, the average age of mothers who bore legitimate live-born children was 28.1 and of those who bore illegitimate live-born offspring was 23.6.

## 13.-Stillbirths and Rates per 1,000 Live Births, by Age of Mother, 1961

(Exclusive of Newfoundland)

| Age Group of Mother | Live Births | Stillbirths | $\begin{gathered} \text { Stillbirth } \\ \text { Rate } \\ \text { per } 1,000 \\ \text { Live Births } \end{gathered}$ |
| :---: | :---: | :---: | :---: |
|  | No. | No. | No. |
| Under 20 years. | 39,628 | 400 | 10.1 |
| $20-24$ " | 135,700 | 1,136 | 8.4 |
| $25-29$ " | 127,570 | 1,388 | 10.9 |
| $30-34$ " | 89,041 | 1,232 | 13.8 |
| $35-39$ " | 50,851 | 1,020 | 20.1 |
| $40-44$ " | 15,582 | 490 | 31.4 |
| 45 - 49 " | 1,146 | 52 | 45.4 |
| 50 years or over. | 17 574 | 19 | 58.8 |
|  |  |  | ... |
| Totals, All Ages. | 460,109 | 5,738 | 12.5 |
| Average age of mothers.......... | 30.2 |  |  |

## Section 3.-Deaths*

No official crude $\dagger$ death rates are available prior to 1921, but some indication of these may be gleaned from studies of the early censuses as follows:-

| Intercensal Period | Estimated Average Annual Crude Death Rate (per 1,000 Population) | Intercensal Period | Estimated Average Annual Crude Death Rate (per 1,000 Population) |
| :---: | :---: | :---: | :---: |
| 1851-61.. | 22 | 1891-1901....... | 16 |
| 1861-71. | 21 | 1901-11.. | 13 |
| 1871-81. | 19 | 1911-21.. | 13 |
| 1881-91. | 18 | 1911-21... | 13 |

As is typical of pioneer populations, Canada had a high death rate in the mid-1850's when 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's 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 gradually 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 's and dropped to a low of 7.7 in 1961. This is one of the lowest crude rates in the world.

Table 1, pp. 220-221, shows the trends since 1941 in the several provinces. 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 mainly attributable to a high proportion of people in the older age groups.

[^61]
## 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 was steeply downward. Of major significance in lowering the over-all death rate, referred to on $p .237$, 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 1961 only a little over 10 p.c. of all male deaths took place in this age group. Among females in the same age group the proportion dropped from just under 22 p.c. to less than 8 p.c. in the same period. While death rates for males up to age 45 were roughly halved during the past 25 years, those for females under 45 years were reduced as much as three to four times. In other words, the death rates for females at every age declined more than those for males; the male rates have almost always been consistently higher than those for females and the differences are widening. The crude male death rate stood at 9.0 per 1,000 total male population in 1961 as compared with only 6.5 for females.

Despite the very considerable reduction in infant mortality over the past 25 or 30 years, more deaths still occur in the first year of life than in any other single year. Of the 104,517 deaths occurring in 1931, 25,737 or almost one quarter were of children under five years of age and over three quarters of those were of children under one year of age. On the other hand, of the 140,985 deaths in 1961, 14,938 or 11 p.c. were of children under five years of age, and of those 12,940 or over 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 1961 this had advanced to 59.7 years and 63.1 years, respectively.

These trends are indicated clearly in Table 14.
14.-Distribution of Deaths, by Age and Sex, 1931, 1941, 1951 and 1961

| Age Group | $1931{ }^{1}$ |  | $1941{ }^{1}$ |  | 1951 |  | 1961 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Male | Female | Male | Female | Male | Female | Male | Female |
| Under 1 year.............. | Numbers |  |  |  |  |  |  |  |
|  | 11,667 | 8, 693 | 8,788 | 6,448 | 8,375 | 6,298 | 7,447 | 5,493 |
| 1 - 4 years. | 2,844 | 2,533 | 1,878 | 1,566 | 1,421 | 1,151 | 1,154 | 844 |
| 5-9 ${ }^{\text {c }}$ | 1,241 | 963 | 888 | 670 | 711 | 466 | 672 | 405 |
| 10-14 " | 821 | 806 | 787 | 536 | 461 | 284 | 527 | 278 |
| 15-19 " | 1,311 | 1,132 | 1,118 | 823 | 721 | 457 | 840 | 322 |
| 20-24 | 1,502 | 1,453 | 1,332 | 1,039 | 1,009 | 549 | 969 | 342 |
| $25-29$ | 1,388 | 1,414 | 1,317 | 1,173 | 988 | 660 | 895 | 418 |
| $30-34$ " | 1,301 | 1,432 | 1,211 | 1,148 | 1,070 | 778 | 1,041 | 562 |
| 35-39 " | 1,512 | 1,574 | 1,497 | 1,242 | 1,281 | 1,015 | 1,422 | 880 |
| 40 45 - 49 | 1,888 | 1,493 | 1,744 | 1,464 | 1,756 | 1,266 | 1,916 | 1,099 |
| 50-54 " | 2,855 | 1,993 | 3,355 | 2,227 | 3,525 | 2,083 | 4,242 | 2,237 |
| 55-59 | 3,057 | 2,246 | 4,394 | 2,851 | 4,741 | 2,832 | 5,494 | 2,749 |
| 60-64 " | 3,583 | 2,855 | 5,288 | 3,483 | 6,465 | 3,902 | 7,028 | 3,725 |
| 65-69 " | 4,249 | 3,348 | 6,057 | 4,412 | 8,007 | 5,119 | 8,545 | 5,304 |
| $70-74$ | 4,867 | 4,073 | 6,495 | 4,981 | 8,748 | 6,439 | 10,582 | 7,058 |
| 75-79 " | 4,368 | 4,029 | ${ }_{5}^{6,421}$ | 5,461 | 8,254 | 6,904 | 10,970 | 8,290 |
| $80-84$ " 80 | 3,206 | 3,215 2,998 | 5,020 3,846 | 4,906 4,540 | 6,232 5,336 | 6,130 6,319 | 8,635 7,337 | 7,871 |
| Totals, All Ages | 56,529 | 47,988 | 63,852 | 50,787 | 71,564 | 54,259 | 82,709 | 58,276 |

[^62]14.-Distribution of Deaths, by Age and Sex, 1931, 1941, 1951 and 1961-concluded

${ }^{1}$ Excludes the Yukon and Northwest Territories.
Deaths in Urban Centres.-Table 2 on pp. 222-226 shows the number of deaths in 1961 for urban centres of 10,000 population or over. Without a knowledge of the age composition of each centre it is difficult to compare rates for various centres. The migration of young people from rural areas to certain urban centres and of older people to other centres creates a favourable situation for a low or high rate as the case may be. However, despite differences in the age factor, some urban areas have very low death rates compared with other centres of the same size and with other areas in the same province.

Causes of Death.-Table 15 summarizes the most recent figures for deaths and death rates in Canada grouped according to the International Abbreviated List of 50 Causes. About 80 p.c. of the deaths are caused by diseases of the heart and arteries, cancer, accidents, diseases of early infancy, the respiratory diseases-tuberculosis, pneumonia and influenza-and nephritis.

## MAJOR CAUSES OF DEATH



[^63]The rise in the average age at death has already been noted (p. 238). Deaths from causes that mainly affect children and young adults have declined. Diphtheria, for example, has been almost wiped out-in fact there were only 12 deaths from diphtheria during the years 1960 and 1961 and not a single one in 1959-and tuberculosis has been greatly reduced. On the other hand, the aging of the population has increased the proportion of deaths from certain causes that affect older people. Thus, cancer and diseases of the cardiovascular-renal systems now account for a substantially larger proportion of all deaths than formerly.

These trends indicate the remarkable success that has attended the attack by health authorities on the infective and contagious diseases which in the past have constituted such a great hazard in the early and young adult years of life. They have served similarly to emphasize the emergence of the chronic and degenerative conditions of later life as the targets toward which the public health programs of the future will be directed. In effect, Canada has shared the experience of most western nations in exchanging a high mortality in younger life for high morbidity in older age groups.

The chart on p. 240 shows death rates for the major cause groups from 1936-61.

## 15.-Deaths and Rates per 100,000 Population, according to the International Abbreviated List of 50 Causes, 1960 and 1961



[^64]15.-Deaths and Rates per $\mathbf{1 0 0 , 0 0 0}$ Population, according to the International Abbreviated List of 50 Causes, 1960 and 1961-concluded

| International List No. |  | Cause of Death | Numbers of Deaths |  | Rates per 100,000 Population |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Abbreviated List | Detailed List |  | 1960 | 1961 | $1960{ }^{1}$ | 1961 |
| B33 | 540, 541 | Uleer of stomach and duodenum. | 921 | 846 | 5.2 | 4.6 |
| B34 | 550-553 | Appendicitis............ | 187 | 167 | 1.0 | 0.9 |
| B35 | 560, 561, 570 | Intestinal obstruction and hernia. | 890 | 929 | 5.0 | 5.1 |
| B36 | 543, 571, 572 | Gastritis, duodenitis, enteritis and colitis except diarrhœa of the newborn | 974 | 907 | 5.5 | 5.0 |
| B37 | 581 | Cirrhosis of liver............................. | 1,097 | 1,083 | 6.1 | 5.9 |
| B38 | 590-594 | Nephritis and nephrosis..................... | 1,558 | 1,481 | 8.7 | 8.1 |
| B39 | 610 | Hyperplasia of prostate.................... | 485 | 510 | 5.42 | $5.5{ }^{2}$ |
| B40 $\{$ | $\begin{array}{r} 640-652,660, \\ 670-689 \end{array}$ | Complications of pregnancy, childbirth and the puerperium | 215 | 219 | 44.93 | 46.03 |
| B41 | 750-759 | Congenital malformations.................... | 2,696 | 2,822 | 15.1 | 15.5 |
| B42 | 760-762 | Birth injuries, postnatal asphyxia and atelectasis. | 2,787 | 2,766 | 15.6 | 15.2 |
| B43 | 763-768 | Infections of the newborn.................... | 582 | 539 | 3.3 | 3.0 |
| B44 | 769-776 | Other diseases peculiar to early infancy and immaturity (unqualified). | 3,716 | 3,854 | 20.8 | 21.1 |
| B45 | 780-795 | Senility without mention of psychosis, ilidefined and unknown causes. | 1,357 | 1,220 | 7.6 | 6.7 |
| B46 | Residual | All other diseases............................ | 11,040 | 11,445 | 61.8 | 62.8 |
| BE47 | E810-E835 | Motor vehicle accidents. | 3,700 | 3,882 | 20.7 | 21.3 |
| BE48 \{ | E800-E802 | All other accidents........................ | 5,703 | 5,758 | 31.9 | 31.6 |
| BE49 | $\begin{aligned} & \text { E963, E970- } \\ & \text { E979 } \end{aligned}$ | Suicide................................... | 1,350 | 1,366 | 7.6 | 7.5 |
| BE50 | $\begin{aligned} & \text { E964, E965 } \\ & \text { E980-E999 } \end{aligned}$ | Homicide and operations of war........... | 253 | 223 | 1.4 | 1.2 |
|  |  | Totals, All Causes.................. | 139,693 | 140,985 | 781.7 | 773.0 |

${ }^{1}$ Many rates have been revised since the publication of the 1962 Year Book; see headnote to Table 1. ${ }^{2}$ Per 100,000 males. $\quad{ }^{3}$ Per 100,000 live births.

## Subsection 2.-Infant Mortality

Table 1, pp. 220-221, and Table 16 show the striking improvement that has taken place in the rate of infant mortality during the past twenty years. Although 68,307 of the $2,372,737$ children born in the five years 1957-61 died before reaching their first birthday, 154,730 others lived who would have died at the rate prevailing in the period 1926-30. This improvement is attributed 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 milk, the use of antibiotics, improved pædiatric, obstetrical and hospital nursing services, improved home environment 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.

Table 16 shows that mortality among male infants is 25 to 30 p.c. higher than that among female infants for Canada as a whole, with wider variations for the individual provinces. For the country as a whole, in 1961, out of every 1,000 infant boys born alive, 30 died before reaching their first birthday, whereas out of every 1,000 infant girls born alive, 24 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 1959-61 there were 736,505 male children born compared with 697,021 female children, an excess of 39,484 or 5.7 p.c.;
during the same period, 22,846 male children died during their first year compared with 16,766 female children so that the excess of males at one year of age was reduced to 33,404 or under 5 p.c.
16.-Distribution of Infant Deaths by Province and Sex, 1941-61


${ }^{1}$ Excludes Newfoundland and the Yukon and Northwest Territories.
Age at Death.-In 1961 the ages of the 12,940 infants who died within a year of birth were by no means evenly spread over the twelve-month span. In fact, 11,824 or 91 p.c. of the infants were less than six months old and 8,564 or 66 p.c. were less than one month old. There was a sharp drop to 1,071 in the second month with gradual reductions thereafter to the eleventh month. Of the 8,564 deaths during the first month, 7,523 occurred in the first week of life and no less than 4,797 took place in the first day.

Causes of Infant Deaths.-In 1961 more than two thirds 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 2,284 and was an added complication in 3,007 others. Congenital malformations accounted for 2,192 fatalities. Pneumonia took the lives of 1,683 infants. Postnatal asphyxia accounted for 1,502 deaths and injury at birth for 1,264 .

## LEADING CAUSES OF INFANT DEATHS



* due to changes in classification, not strictly comparable over the period; includes all deaths involving IMMATURITY EITHER AS THE UNDERLYING CAUSE OR AS A COMPLICATION.
*     * INCLUDES CATEGQRIES $774-776$, INTERNATIONAL STATISTICAL CLASSIFICATION ( 6 th. 87 th. Rev.) WHERE IMMATURITY REPORTED ALONE AS UNDERLYING CAUSE.
17.-Infant Mortality and Rates per $\mathbf{1 0 0 , 0 0 0}$ Live Births, by Cause, 1959-61

| International List No. | Cause of Death | Numbers of Deaths |  |  | Rates per 100,000 Live Births |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 1959 | 1960 | 1961 | 1959 | 1960 | 1961 |
| 001-019 | Tuberculosis.................................. | 18 | 7 | 8 | 4 | 1 | 2 |
| 020-029 | Syphilis....................................... | 1 | - | 1 |  |  |  |
| 045-048 | Dysentery.................................... | 9 | 23 | 14 | 2 | 5 | 3 |
| 050 | Scarlet fever.................................... | 2 | 1 | 1 |  |  |  |
| 052 | Erysipelas... | 2 | - | 1 | - |  |  |
| 056 | Whooping cough | 39 | 63 | 24 | 8 | 13 | 5 |
| 057 | Meningococcal infec | 25 | 35 | 8 | 5 | 7 | 2 |
| 085 | Measles.... | 28 | 27 | 30 | 6 | 6 | 6 |
| 140-239 | Neoplasms. | 53 | 44 | 42 | 11 | 9 | 9 |
| 273 | Diseases of thymus gland. | 29 | 23 | 13 | 6 | 5 | 3 |
| 325 | Mental deficiency.. | 65 | 52 | 75 | 14 | 11 | 16 |
| - 340 | Meningitis (non-meningococcal).................. | 79 | 89 | 109 | 16 | 19 | 23 |
| 391, 392 | Otitis media.................................. | 89 | 86 | 59 | 19 | 18 | 12 |
| 470-475 | Acute upper respiratory infections. | 59 | 57 | 81 | 12 | 12 | 17 |
| 480-483 | Influenza. | 175 | 119 | 108 | 37 | 25 | 23 |
| 490-493 | Pneumonia (4 weeks and over) | 1,389 | 1,415 | 1,273 | 290 | 296 | 268 |
| 500-502 | Bronchitis.............. | 105 | 105 | 74 | 22 | 22 | 16 |
| 543 | Gastritis and duodenitis. | 2 | 5 | 4 |  | 1 | 1 |
| 560-570 | Hernis and intestinal obstruction | 102 | 97 | 107 | 21 | 20 | 22 |
| 571 | Gastro-enteritis and colitis.. | 490 | 483 | 400 | 102 | 101 | 84 |
| 572 | Chronic enteritis, and ulcerative | 1 | 5 | 2 |  | 1 |  |
| 750-759 | Congenital malformations. | 2,149 | 2,076 | 2,192 | 448 | 434 | 461 |
| 760, 761 | Injury at birth............. | 1,400 | 1,265 | 1,264 | 292 | 264 | 266 |
| 762 | Postnatal asphyxia and atelectasis..... | 1,535 | 1,522 | 1,502 | 320 | 318 | 316 |
| 763 | Pneumonia of newborn (under 4 weeks) | 454 | 454 | 410 | 95 | 95 | 86 |
| 764 | Diarrhœa of newborn (under 4 weeks). | 126 | 80 | 86 | 26 | 17 | 18 |
| 765-768 | Other infections of the newborn. | 43 | 48 | 43 | 9 | 10 | 9 |
| 769 | Antenatal toxæmia. | 121 | 91 | 120 | 25 | 19 | 25 |
| 770 | Erythroblastosis.. | 377 | 343 | 325 | 79 | 72 | 68 |
| 771 | H æmorrhagic disease of newborn. | 107 | 93 | 97 | 22 | 19 | 20 |
| 772 | Nutritional maladjustment..... | 71 | 48 | 53 | 15 | 10 | 11 |
| 7773 | Ill-defined diseases peculiar to early infancy | 849 | 875 | 972 | 177 | 183 | 204 |
| 774-776 | Immaturity............... | 2,369 | 2,261 | 2,284 | 494 | 472 | 480 |
| ${ }^{795}$ | Ill-defined and unknown causes | 145 | 96 | 80 | 30 | 20 | 17 |
| E810-E825 | Motor vehicle accidents. | 24 | 14 | 24 | 5 | 3 | 5 |
| E900-E904 | Accidental falls........ | 10 | 17 | 14 | 2 | 4 | 3 |
| - E916 | Accidents caused by fire | 29 | 24 | 23 | 6 | 5 | 5 |
| E921, E922 | Inhalation and ingestion of food or other object. | 303 | 306 | 317 | 63 | 64 | 67 |
| E924, E925 | Accidental mechanical suffocation............... | 159 | 145 | 178 | 33 | 30 | 37 |
|  | Other accidental and violent deaths. | 42 | 51 | 64 | 9 | 11 | 13 |
|  | Other specified causes...... | 520 | 532 | 458 | 108 | 111 | 96 |
|  | Totals, All Caus | 13,595 | 13,077 | 12,940 | 2,837 | 2,733 | 2,720 |

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. 222-226, 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.

## Subsection 3.-Maternal Mortality

As indicated in Table 1, pp. 220-221, the number of mothers who die in pregnancy and childbirth has been greatly reduced during the past two decades. Although the number of births has been much greater in recent years, the number of maternal deaths declined steadily from 1940 (when there were 978 deaths and a rate of 40 deaths for every 10,000 births delivered alive) to 255 in 1957; the slightly higher figure of 263 in both 1958 and 1959 was followed by all-time lows of 215 in 1960 and 219 in 1961. Since 1945 the rate of maternal mortality has been less than 20 per 10,000 live births, since 1951 it has been under 10, and in both 1960 and 1961 it was under five. Despite this improvement, Canada's maternal death rate ( 4.6 in 1961) is higher than the rates for several other countries such as Sweden (3.7), England and Wales (3.4) and the United States (3.2). Mortality among unmarried mothers is higher than among married mothers.


Age at Death.-Table 18 shows the distribution of maternal deaths by age group and average age at death; the latter is about four years higher than the average age of all mothers at the time of childbirth. Until recent years, the risk of mortality at childbirth was directly related to the age of the mother-in other words, for all mothers of over 20 years the rate rose with increasing age. 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.

## 18.-Maternal Mortality and Rates per $\mathbf{1 0 , 0 0 0}$ Live Births, by Age Group, 1959-61 <br> (Exclusive of Newfoundland)

| Age Group | Maternal Deaths |  |  |  |  |  | Rates per 10,000 Live Births |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1959 |  | 1960 |  | 1961 |  | 1959 | 1960 | 1961 |
|  | No. | p.c. | No. | p.c. |  |  |  |  |  |
| Under 20 years. | 12 | 4.8 | 11 | 5.5 | 10 | 4.8 | 3.2 | 2.8 | 2.5 |
| $20-24$ " | 41 | 16.3 | 28 | 14.1 | 26 | 12.5 | 3.1 | 2.1 | 1.9 |
| 25-29 " | 51 | 20.3 | 33 | 16.6 | 36 | 17.3 | 3.8 | 2.5 | 2.8 |
| $30-34$ " | 54 | 21.5 | 43 | 21.6 | 56 | 26.9 | 5.9 | 4.8 | 6.3 |
| $35-39$ " | 63 | 25.1 | 43 | 21.6 | 50 | 24.0 | 12.0 | 8.3 | 9.8 |
| 40 - 44 " | 25 | 10.0 | 33 | 16.6 | 25 | 12.0 | 16.6 | 21.6 | 16.0 |
| 45-49 " | 4 | 1.6 | 8 | 4.0 | 5 | 2.4 | 32.4 | 71.0 | 43.6 |
| 50 years or over. | 1 | 0.4 | - |  | - |  |  |  |  |
| Totals, All Ages. |  | 100.0 | 199 | 100.0 | 208 | 100.0 | 5.4 | 4.3 | 4.5 |
| Average age at death. | 31.8 |  | 32.8 |  | 32.5 |  | $\cdots$ | $\cdots$ | $\cdots$ |

Causes of Maternal Deaths.-Table 19 shows the main causes of maternal deaths during the years 1959-61. Until a decade or so ago, sepsis and toxæmia were by far the most important causes of death of mothers at childbirth. The danger of death from sepsis and other infection has been sharply reduced over the past 15 to 20 years through the use of antibiotics and probably also through increased use of medical services. On the other hand, the number of deaths caused by toxæmia arising during pregnancy and other complications of both pregnancy and delivery represent continuing problems. Hæmorrhage during pregnancy or delivery, which has been another important cause of mortality among mothers, has shown some reduction in recent years.

Of the 219 maternal deaths in 1961, 53 resulted from complication arising during pregnancy, more than half of these from some type of toxæmia; 96 resulted from a complication of delivery, 44 from a post-delivery complication and 26 from abortive delivery.
19.-Maternal Mortality and Rates per 100,000 Live Births, by Cause, 1959-61

| International List No. | Cause of Death | Numbers of Deaths |  |  | Rates per 100,000 Live Births |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 1959 | 1960 | 1961 | 1959 | 1960 | 1961 |
|  | Complications of Pregnancy. | 82 | 69 | 53 | 17 | 14 | 11 |
| 640, 641 | Infections of the genito-urinary tract during pregnancy. | 2 | 1 | 1 |  |  |  |
| 642 | Toxæmias of pregnancy. ...................... | 42 | 36 | 29 | 9 | 8 | 6 |
| 643 644 | Placenta prævia noted before delivery ........ | 1 | 3 3 | - | 1 | 1 |  |
| 644 | Other hæmorrhage of pregnancy ............... | 4 | 3 7 | $\stackrel{3}{5}$ | 1 | 1 | 1 |
| 646-649 | Other complications of pregnancy | 24 | 19 | 15 | 5 | 4 | 3 |
| 650, 652 | Abortion. | 41 | 24 | 26 | 9 | 5 | 5 |
|  | Abortion without mention of sepsis | 17 | 6 | 10 | 4 | 1 | 2 |
|  | Abortion with sepsis................ | 24 | 18 | 16 | 5 | 4 | 3 |
| $\begin{aligned} & 660 \\ & 670 \end{aligned}$ | Complications of Delivery.................... | 95 | 83 | 96 | 20 | 17 | 20 |
|  | Delivery (without complication)................ | 1 | 1 | - | -- | -- | - |
|  | Delivery complicated by placenta prævia or antepartum hæmorrhage | 256 | 14 | 183 | 51 | 31 | 4 |
| 671 | Delivery complicated by retained placenta... |  |  |  |  |  |  |
| 672 | Delivery complicated by other postpartum hæmorrhage | 24 | 20 | 20 | 5 | 4 | 4 |
| 673, 674 | Delivery complicated by abnormality of bony pelvis or malposition of foetus. | 7 | 5 | 8 | 1 | 1 | 2 |
| 675 | Delivery complicated by prolonged labour of other origin | 6 | 6 |  | 1 | 1 | 1 |
| $\begin{array}{r} 676,677 \\ 678 \end{array}$ | Delivery with laceration or other trauma..... | 14 | 1815 | 17 | 3 | 3 | 4 |
|  | Delivery with other complications of childbirth. | 12 |  |  |  |  |  |
| $\begin{array}{r} 680 \\ 681 \\ 682-684 \end{array}$ | Complications of the Puerperium Puerperal urinary infection without other sepsis Sepsis of childbirth and the puerperium. Puerperal phlebitis, thrombosis, pyrexia, pulmonary embolism. | 45 | 39 | 44 | 9 | 8 | 9 |
|  |  | 11 | - | - | - | ${ }_{2}$ | - |
|  |  | 11 | 8 | 13 | 2 | 2 | 3 |
|  |  | 19 | 15 | 13 | 4 | 3 | 3 |
| $\begin{aligned} & 685,686 \\ & 687-689 \end{aligned}$ | Puerperal eclampsia and toxæmia Other. <br> Totals, All Puerperal Causes | 1910 | 511 | $\begin{array}{r} 0 \\ 3 \\ 15 \end{array}$ | 12 | 12 | 13 |
|  |  |  |  |  |  |  |  |
|  |  | 263 | 215 | 219 | 55 | 45 | 46 |

## 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, as previously stated, the collection of Canadian birth and death statistics began only in 1921, some idea of the rate of

[^65]

Age at Death.-Table 18 shows the distribution of maternal deaths by age group and average age at death; the latter is about four years higher than the average age of all mothers at the time of childbirth. Until recent years, the risk of mortality at childbirth was directly related to the age of the mother-in other words, for all mothers of over 20 years the rate rose with increasing age. 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.

## 18.-Maternal Mortality and Rates per $\mathbf{1 0 , 0 0 0}$ Live Births, by Age Group, 1959-61

(Exclusive of Newfoundland)

| Age Group | Maternal Deaths |  |  |  |  |  | Rates per 10,000 Live Births |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1959 |  | 1960 |  | 1961 |  | 1959 | 1960 | 1961 |
|  |  |  |  |  |  |  |  |  |  |
| Under 20 years. | 12 | 4.8 | 11 | 5.5 | 10 | 4.8 | 3.2 | 2.8 | 2.5 |
| $20-24$ " | 41 | 16.3 | 28 | 14.1 | 26 | 12.5 | 3.1 | 2.1 | 1.9 |
| $25-29$ " | 51 | 20.3 | 33 | 16.6 | 36 | 17.3 | 3.8 | 2.5 | 2.8 |
| $30-34$ " | 54 | 21.5 | 43 | 21.6 | 56 | 26.9 | 5.9 | 4.8 | 6.3 |
| $35-39$ " | 63 | 25.1 | 43 | 21.6 | 50 | 24.0 | 12.0 | 8.3 | 9.8 |
| 40 - 44 " | 25 | 10.0 | 33 | 16.6 | 25 | 12.0 | 16.6 | 21.6 | 16.0 |
| 45-49 " |  | 1.6 | 8 | 4.0 | 5 | 2.4 | 32.4 | 71.0 | 43.6 |
| 50 years or over. | 1 | 0.4 | - | - | - | - | -- | - |  |
| Totals, All Ages. | 251 | 100.0 | 199 | 100.0 | 208 | 100.0 | 5.4 | 4.3 | 4.5 |
| Average age at death.. | 31.8 |  | 32.8 |  | 32.5 |  | ... | $\cdots$ | $\cdots$ |

Causes of Maternal Deaths.-Table 19 shows the main causes of maternal deaths during the years 1959-61. Until a decade or so ago, sepsis and toxæmia were by far the most important causes of death of mothers at childbirth. The danger of death from sepsis and other infection has been sharply reduced over the past 15 to 20 years through the use of antibiotics and probably also through increased use of medical services. On the other hand, the number of deaths caused by toxæmia arising during pregnancy and other complications of both pregnancy and delivery represent continuing problems. Hæmorrhage during pregnancy or delivery, which has been another important cause of mortality among mothers, has shown some reduction in recent years.

Of the 219 maternal deaths in 1961, 53 resulted from complication arising during pregnancy, more than half of these from some type of toxæmia; 96 resulted from a complication of delivery, 44 from a post-delivery complication and 26 from abortive delivery.
19.-Maternal Mortality and Rates per 100,000 Live Births, by Cause, 1959-61

| International List No. | Cause of Death | Numbers of Deaths |  |  | Rates per 100,000 Live Births |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 1959 | 1960 | 1961 | 1959 | 1960 | 1961 |
|  | Complications of Pregnancy. | 82 | 69 | 53 | 17 | 14 | 11 |
| 640, 641 | Infections of the genito-urinary tract during pregnancy | 2 | 1 | 1 | , | -- | -- |
| 642 | Toxæmias of pregnancy. ..................... | 42 | 36 | 29 | 9 | 8 | 6 |
| 643 644 | Placenta prævia noted before delivery ........ | 1 | 3 3 | - 3 | -1 | 1 | 1 |
| 645 | Ectopic pregnancy.............................. | 9 | 7 | 5 | 2 | 1 | 1 |
| 646-649 | Other complications of pregnancy | 24 | 19 | 15 | 5 | 4 | 3 |
| 650, 652 | Abortion. | 41 | 24 | 26 | 9 | 5 | 5 |
|  | Abortion without mention of sepsis | 17 | 6 | 10 | 4 | 1 | 2 |
|  | Abortion with sepsis................ | 24 | 18 | 16 | 5 |  | 3 |
| 660670 | Complications of Delivery. | 95 | 1 | 96 | 20 | 17 | 20 |
|  | Delivery (without complication).............. | 1 |  | - | -- | -- | - |
|  | Delivery complicated by placenta prævia or antepartum hæmorrhage. | 25 | 144 | 183 | 51 | 31 | 41 |
| 671 | Delivery complicated by retained placenta... |  |  |  |  |  |  |
| 672 | Delivery complicated by other postpartum hæmorrhage | 24 | 20 | 20 | 5 | 4 | 4 |
| 673, 674 | Delivery complicated by abnormality of bony pelvis or malposition of foetus.. | 7 | 5 | 8 | 1 | 1 | 2 |
| 675 | Delivery complicated by prolonged labour of other origin | 6 | 6 | 3 | 1 | 1 | 1 |
| $\begin{array}{r} 676,677 \\ 678 \end{array}$ | Delivery with laceration or other trauma..... | 14 | 18 | 27 | 3 | 4 | 6 |
|  | Delivery with other complications of childbirth. | 12 | 15 | 17 | 3 | 3 | 4 |
| $\begin{array}{r} 680 \\ 681 \\ 682-684 \end{array}$ | Complications of the Puerperium........... | 45 | 39 | 44 | 9 | 8 | 9 |
|  | Puerperal urinary infection without other sepsis Sepsis of childbirth and the puerperium. | 11 | 8 | 13 | 2 | 2 | 3 |
|  | Puerperal phlebitis, thrombosis, pyrexia, pulmonary embolism |  |  |  | 412 | 312 | 313 |
| 685, 686 |  | $\begin{array}{r} 19 \\ 5 \end{array}$ | $\begin{array}{r} 15 \\ 5 \\ 11 \end{array}$ | $\begin{array}{r} 13 \\ 3 \\ 15 \end{array}$ |  |  |  |
| 687-689 | Other... |  |  |  |  |  |  |
| Totals, All Puerperal Causes.......... |  | 263 | 215 | 219 | 55 | 45 | 46 |

## 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, as previously stated, the collection of Canadian birth and death statistics began only in 1921, some idea of the rate of

[^66]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 <br> Average Annual Natural <br> Increase Rate (per 1,000 <br> Population) | Intercensal Period | Estimated Average Annual Natural <br> Increase Rate (per 1,000 Population) |
| :---: | :---: | :---: | :---: |
| 1851-61. | 23 | 1891-1901. | 14 |
| 1861-71. | 19 | 1901-11 | 18 |
| 1871-81. | 18 | 1901-11 | 18 |
| 1881-91.. | 16 | 1911-21... | 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 1920's 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 was a slight drop because of the declining birth rate, the natural increase rate stood at 19.0 in 1960 and 18.4 in 1961.

Table 20 shows the rates of natural increase in the provinces and for each sex separately for the 20 years 1941-61. The high rates in the Prairie Provinces, especially Alberta, are partly accounted for by their relatively younger populations and consequent low death rates. High birth rates and declining death rates have given Newfoundland, Alberta, Quebec, New Brunswick and Saskatchewan the highest rates of natural increase in Canada in recent years (excluding the Yukon and Northwest Territories).

## 20.-Natural Increase and Rates per 1,000 Population, by Sex and Province, 1941-61

Note.-Adjustments in intercensal populations on the basis of 1961 Census figures necessitated the revision of many of the 1959 and 1960 natural increase rates that appeared in the 1962 Year Book.


20.-Natural Increase and Rates per 1,000 Population, by Sex and Province, 1941-61—concluded


'Figures for Newfoundland are included from 1949 and those for the Yukon and Northwest Territories from 1950.

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 are presented in Table 2, pp. 222-226.

## Section 5.-Marriages and Divorces

## Subsection 1.-Marriages*

In 1961 Canada's crude marriage rate was 7.0 per 1,000 population, the lowest in over 20 years. Provincial rates varied from 6.0 per 1,000 population for Prince Edward Island to 7.9 for Alberta.

Table 21 provides a summary of the number of marriages and the marriage rates per 1,000 population for Canada and the provinces for the years 1941, 1951 and the three consecutive years 1959-61, and percentages of brides and bridegrooms, for the same years according to place of birth. For the country as a whole, over 82 p.c. of the grooms of 1961 were born in Canada and almost 68 p.c. in the province in which they were married; almost 86 p.c. of the brides were born in Canada and over 74 p.c. in the province in which they were married. However, as would be expected because of heavy immigration of young persons in the postwar years, an increasing number of marriages are of persons born outside the country. For example, 17.9 p.c. of the grooms married in 1961 were born outside Canada compared with 11.7 p.c. in 1941 ; for brides the proportions were 14.1 p.c. and 8.4 p.c., respectively. However, there are wide variations in this pattern as between provinces; in the older Atlantic Provinces and Quebec there is a greater tendency than in the other provinces to marry native Canadians. In these areas both partners in a marriage are often born in the same province.

* For international comparisons, see Section 7, pp. 256-257.
21.-Marriages and Rates per 1,000 Population, by Province, with Percentage Distribution of Bridegrooms and Brides by Nativity, 1941, 1951 and 1959-61

| Province and Year |  | Total Marriages | Rate per F1,000 Population | Born <br> 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. |
| Newfoundland. | . 1951 | 2,517 | 7.0 | 85.2 | 96.7 | 2.4 | 1.9 | 12.4 | 1.4 |
|  | 1959 | 2,893 | 6.6 | 86.4 | 96.5 | 3.3 | 1.4 | 10.3 | 2.1 |
|  | 1960 | 3,104 | 6.9 | 86.2 | 96.4 | 4.3 | 1.9 | 9.5 | 1.7 |
|  | 1961 | 3,306 | 7.2 | 88.0 | 97.2 | 3.8 | 1.6 | 8.2 | 1.2 |
| Prince Edward Island. | . 1941 | 673 | 7.1 | 78.8 | 86.6 | 15.0 | 9.4 | 6.2 | 4.0 |
|  | 1951 | 583 | 5.9 | 82.3 | 91.1 | 12.9 | 6.0 | 4.8 | 2.9 |
|  | 1959 | 639 | 6.3 | 84.4 | 92.0 | 11.9 | 5.9 | 3.8 | 2.0 |
|  | 1960 1961 | 690 624 | 6.7 6.0 | 79.6 81.7 | 91.2 89.6 | 14.8 15.4 | 6.4 7.2 | 5.7 2.9 | 2.5 3.2 |
| Nova Scotia. |  |  | 11.4 | 73.2 | 83.8 | 16.8 | 9.5 | 10.0 | 6.7 |
|  | 1951 | 5,094 | 7.9 | 78.2 | 86.7 | 15.9 | 9.0 | 6.0 | 4.3 |
|  | 1959 | 5,310 | 7.4 | 74.5 | 87.2 | 19.2 | 9.4 | 6.3 | 3.4 |
|  | 1960 | 5,250 | 7.2 | 76.2 | 87.8 | 17.9 | 8.8 | 5.9 | 3.4 |
|  | 1961 | 5,292 | 7.2 | 75.2 | 87.8 | 18.8 | 8.8 | 6.0 | 3.4 |

21.-Marriages and Rates per 1,000 Population, by Province, with Percentage Distribution of Bridegrooms and Brides by Nativity, 1941, 1951 and 1959-61-concluded

| Province or Territory and Year | Total Marriages | Rate per 1,000 Population | Born <br> 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. |
| New Brunswick. ................... 1941 | 4,941 | 10.8 | 78.5 | 84.4 | 13.3 | 9.7 | 8.2 | 5.9 |
| 1951 | 4,386 | 8.5 | 80.0 | 86.9 | 10.1 | 6.7 | 9.8 | 6.4 |
| 1959 | 4,310 | 7.4 | 73.8 | 84.7 | 14.1 | 7.9 | 12.2 | 7.4 |
| 1960 | 4,430 | 7.5 | 74.4 | 85.9 | 14.8 | 8.1 | 10.8 | 6.0 |
| 1961 | 4,504 | 7.5 | 75.4 | 86.3 | 14.9 | 7.9 | 9.7 | 5.8 |
| Quebec.............................. 1941 | 32,782 | 9.8 | 86.1 | 89.3 | 6.7 | 5.9 | 7.2 | 4.8 |
| Quebec..................... 1951 | 35,704 | 8.8 | 86.7 | 89.5 | 6.1 | 5.5 | 7.2 | 5.0 |
| 1959 | 37,124 | 7.4 | 82.8 | 86.6 | 5.7 | 4.4 | 11.5 | 9.0 |
| 1960 | 36,211 | 7.0 | 82.9 | 86.9 | 5.7 | 4.6 | 11.4 | 8.6 |
| 1961 | 35,943 | 6.8 | 83.6 | 87.4 | 5.7 | 4.8 | 10.7 | 7.8 |
| Ontario............................. 1941 | 43,270 | 11.4 | 89.2 | 89.0 | 4.2 | 4.5 | 6.7 | 6.5 |
| 1951 | 45,198 | 9.8 | 65.9 | 72.4 | 14.6 | 12.2 | 19.5 | 15.4 |
| 1959 | 46,598 | 7.8 | 58.9 | 64.8 | 13.2 | 11.1 | 27.8 | 24.1 |
| 1960 | 45,855 | 7.5 | 60.1 | 66.1 | 13.3 | 11.2 | 26.6 | 22.7 |
| 1961 | 44,434 | 7.1 | 61.5 | 67.2 | 12.9 | 11.0 | 25.6 | 21.8 |
| Manitoba. . . . . . . . . . . . . . . . . . . . 1941 | 8,305 | 11.4 | 63.0 | 73.7 | 17.4 | 15.0 | 19.6 | 11.4 |
| 1951 | 7,366 | 9.5 | 67.9 | 75.1 | 15.4 | 13.3 | 16.8 | 11.6 |
| 1959 | 6,661 | 7.5 | 65.1 | 75.1 | 17.8 | 12.7 | 17.0 | 12.3 |
| 1960 | 6,606 | 7.3 | 66.4 | 74.9 | 17.9 | 13.4 | 15.7 | 11.8 |
| 1961 | 6,512 | 7.1 | 66.6 | 74.5 | 18.5 | 14.5 | 14.8 | 11.0 |
| Saskatchewan....................... 1941 | 7,036 | 7.9 | 64.7 | 79.1 | 16.1 | 10.0 | 19.1 | 10.9 |
| 疗 1951 | 6,805 | 8.2 | 78.3 | 86.4 | 10.7 | 6.4 | 11.1 | 7.2 |
| 1959 | 6,388 | 7.0 | 78.2 | 86.2 | 12.2 | 7.0 | 9.6 | 6.8 |
| 1960 | 6,209 | 6.8 | 81.7 | 86.6 | 8.7 | 7.6 | 9.6 | 5.9 |
| 1961 | 6,149 | 6.6 | 79.3 | 85.8 | 11.9 | 8.7 | 8.8 | 5.5 |
| Alberta.............................. 1941 | 8,470 | 10.6 | 50.0 | 63.4 | 23.9 | 19.9 | 26.2 | 16.8 |
| 1951 | 9,305 | 9.9 | 56.0 | 67.4 | 25.7 | 19.6 | 18.3 | 13.0 |
| 1959 | 10,402 | 8.3 | 53.3 | 62.4 | 25.2 | 20.7 | 21.5 | 16.9 |
| 1960 | 10,482 | 8.1 | 54.3 | 62.2 | 25.4 | 20.9 | 20.3 | 16.8 |
| 1961 | 10,474 | 7.9 | 54.4 | 62.3 | 25.8 | 21.8 | 19.8 | 15.9 |
| British Columbia.................. 1941 | 9,769 | 11.9 | 35.9 | 43.5 | 35.6 | 37.1 | 28.5 | 19.4 |
| 1951 | 11,272 | 9.7 | 35.5 | 41.6 | 43.1 | 43.0 | 21.3 | 15.5 |
| 1959 | 11,910 | 7.6 | 33.3 | 42.3 | 36.9 | 33.5 | 29.8 | 24.2 |
| 1960 | 11,203 | 7.0 | 34.8 | 43.5 | 37.0 | 33.3 | 28.2 | 23.2 |
| 1961 | 10,964 | 6.7 | 36.4 | 45.9 | 35.9 | 32.4 | 27.7 | 21.8 |
| Yukon Territory........................ 1959 | 109 | 8.4 | 16.5 | 26.6 | 61.5 | 50.5 | 22.0 | 22.9 |
| $1960$ | 107 | 7.6 | 10.3 | 22.4 | 62.6 | 53.3 | 27.1 | 24.3 |
| 1961 | 128 | 8.8 | 12.5 | 24.2 | 63.3 | 52.3 | 24.2 | 23.4 |
| Northwest Territories.............. 1959 | 130 |  |  |  |  | 24.6 | 17.7 | 8.5 |
| 1960 | 191 | 8.7 | 64.9 | 74.9 | 28.8 | 19.4 | 6.3 | 5.8 |
| 1961 | 145 | 6.3 | 54.5 | 61.4 | 35.9 | 31.7 | 9.7 | 6.9 |
| Canadal............................ 19.41 | 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 |
| 1959 | 132,474 | 7.6 | 65.9 | 72.6 | 14.5 | 11.5 | 19.6 | 15.9 |
| 1960 | 130,338 | 7.3 7.0 | 67.0 67.9 | 73.4 | 14.3 | 11.6 | 18.7 | 15.0 |
| 1961 | 128,475 | 7.0 | 67.9 | 74.2 | 14.3 | 11.7 | 17.9 | 14.1 |

${ }^{1}$ Newfoundland included from 1951 and the Yukon and Northwest Territories from 1959.
Age and Marital Status of Brides and Bridegrooms.-Table 22 shows that over 91 p.c. of the marriages in 1961 were between persons who had not been married previously; 5.1 p.c. of the brides and 4.5 p.c. of the bridegrooms had been widowed, and almost 4 p.c. of the marriages were of divorced persons. The average age at marriage of bachelors was just under 26 years and that of spinsters just under 23 years. The average age of widowers and widows at time of remarriage was slightly more than double that of
bachelors and spinsters. Of the spinsters married in 1961, 92 p.c. were under 30 years of age, 35 p.c. were under 20 years and 46 p.c. were between 20 and 25 . Over 84 p.c. of the bachelors were under 30 years of age, 7 p.c. of them under 20 and over 51 p.c. from 20 to 24 years of age.

In recent years, couples have been marrying younger than they did a generation ago. Since 1940 the average age of men at the time of their first marriage has dropped from 28 years to less than 26 ; that of girls from 24 years, 5 months to less than 23 years.
22.-Brides and Bridegrooms, by Age and Marital Status, 1961

| Age Group | Brides |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Numbers |  |  |  | Percentages |  |  |  |
|  | Spinsters | Widows | Divorced | Total | Spinsters | Widows | Divorced | Total |
| Under 20 years........... | 40,614 | 15 | 26 | 40,655 | 34.7 | 0.2 | 0.5 | 31.6 |
| 20-24 " $\ldots$.......... | 53,827 | 177 | 595 | 54,599 | 46.0 | 2.7 | 12.1 | 42.5 |
| $25-29$ " | 13,278 | 309 | 1,119 | 14,706 | 11.3 | 4.8 | 22.7 | 11.4 |
| 30-34 " "........... | 4,680 | 496 | 1,092 | 6,268 | 4.0 | 7.6 | 22.1 | 4.9 |
| $35-39$ " | 2,147 | 634 | 826 | 3,607 | 1.8 | 9.8 | 16.7 | 2.8 |
| 40 - 44 " | 1,058 | 766 | 548 | 2,372 | 0.9 | 11.8 | 11.1 | 1.8 |
| 45 - 49 " "........... | 683 | 918 | 396 | 1,997 | 0.6 | 14.1 | 8.0 | 1.6 |
| 50-54 " $1 . . . . . . . . .$. | 341 | 800 | 192 | 1,333 | 0.3 | 12.3 | 3.9 | 1.0 |
| $55-59$ " | 216 | 786 | 88 | 1,090 | 0.2 | 12.1 | 1.8 | 0.8 |
| $60-64$ " | 114 | 652 | 38 | . 804 | 0.1 | 10.0 | 0.8 | 0.6 |
| 65 years or over $\qquad$ Totals, Stated Ages. . | 82 | 942 | 15 | 1,039 | 0.1 | 14.5 | 0.3 | 0.8 |
|  | 117,040 | 6,495 | 4,935 | 128,470 | 100.0 | 100.0 | 100.0 | 100.0 |
| Age not stated <br> Totals, All Ages | 5 | - | - | 5 | ... | ... | ... | $\ldots$ |
|  | 117,045 | 6,495 | 4,935 | 128,475 | 91.1 | 5.1 | 3.8 | 100.0 |
| Average ages............. | 22.9 49.7 34.8 24.7 |  |  |  | $\ldots$ | $\ldots$ | $\ldots$ | ... |
|  | Bridegrooms |  |  |  |  |  |  |  |
|  | Numbers |  |  |  | Percentages |  |  |  |
|  | Bachelors | Widowers | Divorced | Total | Bachelors | Widowers | Divorced | Total |
| Under 20 years. . . . . . . . . | $\begin{array}{r} 8,747 \\ 60,263 \end{array}$ |  | 18 182 | 8,750 60,479 | 7.4 51.2 | 0.6 | 3.6 | 6.8 47.1 |
| $25-29$ " |  | $\begin{array}{r}34 \\ 133 \\ \hline\end{array}$ | 853 | 31,388 | 25.9 | 2.3 | 16.9 | 24.4 |
| $30-34$ " | 10,301 | ${ }_{3}^{239}$ | 1,1181,004 | 11,658 | 8.83.4 | 4.1 | 22.119.8 |  |
| $35-39$ " | 3,988 | 355 |  | 2,777 |  |  |  | 9.1 |
| $40-44$ " | 1,662 | 416 | , 699 |  | 1.4 | 7.2 | 13.8 | 2.2 1.6 |
| $45-49$ " | 991 535 | 596 688 | ${ }_{346}^{512}$ | 2,099 | 0.8 | 10.2 | 10.1 | 1.6 |
| $55-59$ " | ${ }_{335}$ | 715 | 211 | 1,261 | 0.3 | 12.3 | 6.8 4.2 | 1.00.9 |
| 60-64 " | 182 | 834 | $\begin{aligned} & 86 \\ & 50 \end{aligned}$ | $\begin{aligned} & 1,102 \\ & \mathbf{2}, 043 \end{aligned}$ | $\begin{aligned} & 0.2 \\ & 0.2 \end{aligned}$ | 14.331.0 | 1.71.0 |  |
| 65 years or over........... | 189 | 1,804 |  |  |  |  |  | 1.6 |
| Totals, Stated Ages... | 117,595 | 5,816 | 5,062 | 128,473 | 100.0 | 100.0 | 100.0 | 100.0 |
| Age not stated........... | 2 | - | - | 2 | ... | ... | ... | ... |
| Totals, All Ages. . . . . | 117,597 | 5,816 | 5,062 | 128,475 | 91.5 | 4.5 | 3.9 | 100.0 |
| Average ages............. | 25.8 | 56.3 | 38.5 | 27.7 | ... | ... | ... | ... |

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 23 shows the very strong influence that religion has on
marriage. About 71 p.c. of all marriages are between persons of the same religious denomination; in 1961 among those of Jewish faith it was about 93 p.c.; among Roman Catholics about 88 p.c.; United Church about 60 p.c.; and Eastern Orthodox about 67 p.c.
23.-Marriages by Religious Denominations of Contracting Parties, 1961

| Denomination of Bridegroom | Denomination of Bride |  |  |  |  |  |  |  |  |  | Total Marriages | $\begin{gathered} \text { P.C. } \\ \text { of } \\ \text { Grooms } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Anglican | $\begin{aligned} & \text { Bap- } \\ & \text { tist } \end{aligned}$ |  | $\begin{aligned} & \text { Jew- } \\ & \text { ish } \end{aligned}$ | Lutheran | Pres-byterian | Roman Catholic ${ }^{1}$ | United Church | Other Sects | Not Stated |  |  |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |  |
| Anglican. | 7,216 | 518 | 100 | 13 | 391 | 624 | 1,934 | 3,291 | 528 | - | 14,615 | 11.4 |
| Baptist.......... | 566 | 2,082 | 13 | 1 | 111 | 160 | 417 | 864 | 275 | - | 4,489 | 3.5 |
| Eastern Orthodox | 125 | 30 | 1,670 | ${ }_{1}^{2}$ | 79 | 37 | 381 | 252 | 66 |  | 2,642 | 2.1 |
| Jewish............. | 39 | 2 | 1,63 | 1,401 | 10 | 7 | 57 | 20 | 23 | - | 1,562 | 1.2 |
| Lutheran.... | 544 | 149 | 83 | 5 | 2,295 | 152 | 827 | 918 | 320 | 2 | 5,295 | 4.1 |
| Presbyterian. .... | 799 | 183 | 26 | 2 | 127 | 1,681 | 566 | 1,112 | 191 | , | 4,688 | 3.6 |
| Roman Catholic ${ }^{1}$ | 1,956 | 384 | 211 | 23 | 767 | 492 | 53, 964 | 2,445 | 880 | 2 | 61,124 | 47.6 |
| United Church... | 3,304 | 828 | 163 | 8 | 712 | 982 | 2,411 | 14,454 | 969 | 2 | 23,833 | 18.6 |
| Other sects. | 721 | 309 2 | 65 | 10 | 292 4 | 205 1 | 1,124 4 | 1,218 3 | 6,256 3 | 3 | 10,203 | 7.9 |
| Totals | 15,275 | 4,487 | 2,334 | 1,465 | 4,788 | 4,341 | 61,685 | 24,577 | 9,511 | 12 | 128,475 | 100.0 |
| P.C. of brides | 11.9 | 3.5 | 1.8 | 1.1 | 3.7 | 3.4 | 48.0 | 19.1 | 7.4 | ... | 100.0 | $70.8{ }^{2}$ |

${ }^{1}$ Includes Greek Catholic.
${ }^{2}$ Percentage of marriages between contracting parties of the same religious denomination.

## Subsection 2.-Dissolutions of Marriage (Divorces)

Before World War I the number of divorces granted in Canada was very small. There were fewer than 20 divorces each year from Confederation to 1900, 21 in 1903, 51 in 1909 and 60 in 1913. These numbers represent less than one per 1,000 of the yearly number of marriages. At the end of World War I the number of divorces showed a definite increase, advancing to a peak of 8,213 in 1947, then declining gradually to a postwar low of 5,270 in 1951. From 1952 to 1959 the number fluctuated between 5,650 and 6,688 , rose to 6,980 in 1960 and declined to 6,563 in 1961. Preliminary figures show there were 6,709 in 1962, a slight increase over 1961, despite the fact that no divorces were approved by the Canadian Parliament during the year for residents of Quebec and Newfoundland.

## 24.-Dissolutions of Marriage (Divorces), by Province, 1941-62

Nore.-Figures for individual years from 1900 to 1952 are given in the 1956 Year Book, p. 230.

| Year | Nfld. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| Av. 1941-45. |  | 2 | 92 | 104 | 99 | 1,398 | 305 | 207 | 432 | 937 | 3,576 |
| " 1946-50. | 1 | 21 | 185 | 245 | 303 | 2,839 | 500 | 383 | 724 | 1,676 | 6,877 |
| " 1951-55. | 5 | 10 | 212 | 167 | 327 | 2,430 | 356 | 231 | 612 | 1,461 | 5,811 |
| " 1950-60. | 5 | 4 | 227 | 194 | 403 | 2,801 | 315 | 247 | 788 | 1,514 | 6,498 |
| 1953. | 9 | 15 | 185 | 181 | 273 | 2,824 | 374 | 218 | 603 | 1,478 | 6,160 |
| 1954. | 8 | 8 | 249 | 117 | 370 | 2,469 | 371 | 250 | 610 | 1,471 | 5,923 |
| 1955. | 1 | 7 | 253 | 181 | 396 | 2,531 | 337 | 237 | 627 | 1,483 | 6,053 |
| 1956. | 5 | 1 | 230 | 215 | 351 | 2,478 | 314 | 221 | 685 | 1,502 | 6,002 |
| 1957. | 6 | 2 | 250 | 206 | 519 | 2,873 | 305 | 242 | 726 | 1,559 | 6,688 |
| 1958. | 7 | 1 | 220 | 150 | 311 | 2,776 | 292 | 281 | 743 | 1,498 | 6,279 |
| 1959. | 1 | 6 | 215 | 221 | 351 | 2,915 | 301 | 276 | 836 | 1,420 | 6,5431 |
| 1960 | 6 | 10 | 221 | 178 | 481 | 2,965 | 361 | 213 | 951 | 1,592 | 6,980 |
| 1961. | 6 | 8 | 245 | 194 | 348 | 2,739 | 312 | 251 | 1,039 | 1,397 | 6,5633 |
| 1962p. | - | 5 | 229 | 181 | - | 3,081 | 339 | 281 | 1,084 | 1,490 | 6,709 ${ }^{6}$ |

[^67]
## Section 6.-Canadian Life Tables

Four 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 and 1956. In addition, tables have been computed for Canada as a whole for the years 1945 and 1947 but, since these are based on estimated populations by sex and age and the deaths recorded in those years, they are not considered as reliable as those for the census years. The life table values for 1956 are given in abbreviated form in Table 25.

Life tables give some measure of the health 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 1956, of 100,000 males born, 3,472 died in their first year so that 96,528 survived to one year of age; 241 died in their second year so that 96,287 survived to two years of age, and so on. At 100 years of age only 87 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 's 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 1956 life table (see Table 25) about 13,000 males would have died before reaching age 50 as compared with about 8,700 females; only 56,466 of the original group of 100,000 males would have survived to age 70 as compared with 70,327 females.
25.-Canadian Life Table, 1956

| Age | Males |  |  |  | Females |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number Living Age | Number Dying Between Each Age and the Next | Probability of Dying Before Reaching Next Birthday | Expectation of | Number Living Age | Number Dying Between Each Age and the Next | Probability <br> of Dying <br> Before <br> Reaching <br> Next <br> Birthday | Expectation of |
|  |  |  |  | yrs. |  |  |  | yrs. |
| At birth.......... | 100,000 | 3,472 | . 03472 | 67.61 | 100,000 | 2,767 | . 02767 | 72.92 |
| 1 year........... | 96,528 |  | . 00250 | 69.04 | 97,233 |  | . 00216 | 73.99 |
| 2 years.......... | 96,287 | 139 | . 00144 | 68.21 | 97,023 | 210 | . 00120 | 73.15 |
| 3 " | 96,148 |  | . 00115 | 67.31 | 96,907 | 116 | . 00093 | 72.24 |
| 4 " | 96,037 | 111 | . 00095 | 66.38 | 96,817 | 90 | . 00070 | 71.31 |
| 5 " | 95,946 | 91 | . 00083 | 65.45 | 96,749 | 68 | . 00058 | 70.35 |
| 10 " | 95,611 | 335 | . 00057 | 60.67 | 96,522 | 227 | . 00037 | 65.51 |
| 15 " | 95,297 | 598 | . 00099 | 55.86 | 96,330 | 192 | . 00047 | 60.64 |
| 20 " | 94,699 | 802 | . 00160 | 51.19 | 96,074 | 256 | . 00060 | 55.80 |
| 25 " | 93,897 |  | . 00169 | 46.61 | 95,762 | 312 | . 00075 | 50.97 |
| 30 " | 93,116 | 781 | . 00172 | 41.98 | 95,366 | 396 | . 00094 | 46.17 |
|  | 93,116 | 844 |  |  |  | 498 |  |  |

25.-Canadian Life Table, 1956-concluded


By 1956, life expectancy at birth in Canada had reached a new high record of 67.6 years for males and 72.9 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 risks may, on the average, expect to live an additional 69.0 years and a female 74.0 years, representing for an infant boy a gain of 1.4 years over his expectation at birth and for an infant girl a gain of 1.1 years. The expectation of life of a 15 -year-old boy is 55.9 additional years; of a 15 -year-old girl 60.6 years. At 25 years of age the expectation is about 46.6 years for men and almost 51 years for women and at age 70, 10.5 years for men and 12.2 years for women.

Table 26 summarizes the life expectancy figures extracted from the Canadian life tables for 1931, 1941, 1951 and 1956. According to these figures, life expectancy at birth for men increased 1.3 years from 1951 to 1956 compared with 3.4 years from 1941 to 1951 and 2.9 years from 1931 to 1941; females gained 2.1 years from 1951 to 1956 compared with 4.5 years and 4.2 years, respectively, in the preceding decades. Thus, from 1931 to 1956 a total of 7.6 years was added to male life expectancy and 10.8 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, since 1931, 3.2 years have been added to the life expectancy of a five-year-old male, 2.1 years to a 20 -year-old, nine months to a 40 -year-old and three months to a 60 -year-old as compared with 7.6 years for a newborn male. During this period, life expectancy for a five-year-old female gained 7.2 years, for a 20 -year-old 6.0 years, for a 40 -year-old 3.7 years and for a 60 -year-old 2.2 years as compared with 10.8 years for a newborn female.

Longevity has improved for both sexes, though more so and at all ages for females, but there has been 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 have been 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, has been subjected to the mortality rates in effect in 1955-57, 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 1955-57 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 1955-57.

The improvement in life expectancy, particularly among children and adolescents, is 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 quarter-century. As approximately 11 p.c. of deaths in 1955-57 occurred among infants and an additional 75 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-renal conditions and cancer.
26.-Expectation of Life, 1931, 1941, 1951 and 1956

| Age |  |  | 1931 |  | 1941 |  | 1951 |  | 1956 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Male | Female | Male | Female | Male | Female | Male | Female |
|  |  |  | yrs. | yrs. | yrs. | yrs. | yrs. | yrs. | yrs. | yrs. |
| At birth |  |  | 60.00 | 62.10 | 62.96 | 66.30 | 66.33 | 70.83 | 67.61 | 72.92 |
|  | ear. |  | 64.69 | 65.71 | 66.14 | 68.73 | 68.33 | 72.33 | 69.04 | 73.99 |
| 2 | ears. |  | 64.46 | 65.42 | 65.62 | 68.16 | 67.56 | 71.55 | 68.21 | 73.15 |
| 3 | " |  | 63.84 | 64.75 | 64.88 | 67.38 | 66.68 | 70.66 | 67.31 | 72.24 |
| 4 | " |  | 63.11 | 63.99 | 64.07 | 66.56 | 65.79 | 69.74 | 66.38 | 71.31 |
| 5 | * |  | 62.30 | 63.17 | 63.22 | 65.69 | 64.86 | 68.80 | 65.45 | 70.35 |
| 10 | " |  | 57.96 | 58.72 | 58.70 | 61.08 | 60.15 | 64.02 | 60.67 | 65.51 |
| 15 | * |  | 53.41 | 54.15 | 54.06 | 56.36 | 55.39 | 59.19 | 55.86 | 60.64 |
| 20 | " |  | 49.05 | 49.76 | 49.57 | 51.76 | 50.76 | 54.41 | 51.19 | 55.80 |
| 25 | " |  | 44.83 | 45.54 | 45.18 | 47.26 | 46.20 | 49.67 | 46.61 | 50.97 |
| 30 | " |  | 40.55 | 41.38 | 40.73 | 42.81 | 41.60 | 44.94 | 41.98 | 46.17 |
| 35 | " |  | 36.23 | 37.19 | 36.26 | 38.37 | 37.00 | 40.24 | 37.34 | 41.40 |
| 40 | " |  | 31.98 | 33.02 | 31.87 | 33.99 | 32.45 | 35.63 | 32.74 | 36.69 |
| 45 | " |  | 27.79 | 28.87 | 27.60 | 29.67 | 28.05 | 31.14 | 28.28 | 32.09 |
| 50 | " |  | 23.72 | 24.79 | 23.49 | 25.46 | 23.88 | 26.80 | 24.04 | 27.65 |
| 55 | " |  | 19.88 | 20.84 | 19.64 | 21.42 | 20.02 | 22.61 | 20.12 | 23.38 |
| 60 | " |  | 16.29 | 17.15 | 16.06 | 17.62 | 16.49 | 18.64 | 16.54 | 19.34 |
| 65 | " |  | 12.98 | 13.72 | 12.81 | 14.08 | 13.31 | 14.97 | 13.36 | 15.60 |
| 70 | " |  | 10.06 | 10.63 | 9.94 | 10.93 | 10.41 | 11.62 | 10.51 | 12.17 |
| 75 | " |  | 7.57 | 7.98 | 7.48 | 8.19 | 7.89 | 8.73 | 7.98 | 9.15 |
| 80 | " |  | 5.61 | 5.92 | 5.54 | 6.03 | 5.84 | 6.38 | 5.89 | 6.75 |
| 85 | " |  | 4.10 | 4.38 | 4.05 | 4.35 | 4.27 | 4.57 | 4.27 | 4.97 |
| 90 | " |  | 2.97 | 3.24 | 2.93 | 3.13 | 3.10 | 3.24 | 3.07 | 3.67 |
| 95 | " |  | 2.14 | 2.40 | 2.09 | 2.26 | 2.24 | 2.27 | 2.18 | 2.74 |
| 100 | " |  | 1.53 | 1.77 | 1.46 | 1.64 | 1.60 | 1.59 | 1.52 | 2.05 |

## Section 7.-International Comparisons of Vital Statistics

Table 27 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 four countries-Venezuela, the Union of Soviet Socialist Republics, Japan and the Netherlands-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, 13 countries reported lower rates of infant mortality.
27.-Principal Vital Statistics Rates of Selected Countries, 1961

Note.-Countries are ranked according to the highest rates for births, marriages and natural increase and according to the lowest for deaths.
Sourcr: United Nations publications.


## CHAPTER VI.-PUBLIC HEALTH, WELFARE AND SOCIAL SECURITY*

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing $p .1$ of this volume.

Canada's growth in the past eighteen years has created many new problems in the planning of health and welfare services. Population has increased by one half in this period. General prosperity, growing urbanization and industrialization, larger numbers of children and old persons in the population, and new concepts and knowledge in health and welfare matters have all contributed to needs for additional services and to a greater interdependence among the different health and welfare professions.

During 1962, the Royal Commission on Health Services continued its investigation into the existing health facilities and the future needs for health services for the people of Canada; its report is expected to be made during the summer of 1963. The nation's attention was attracted to health problems by two major events during the year. The tragic

[^68]discovery early in 1962 that a number of babies were born with deformed limbs, presumably because their mothers had taken thalidomide early in pregnancy, focused attention on the legislation controlling the introduction of new drugs. Three amendments to the Food and Drug Act were made in 1962 tightening the control over the distribution of drugs, and the Medical Rehabilitation Grant was increased to provide funds for the care and treatment of children whose deformities were attributable to thalidomide. More than 65 such children had been identified by March 1963. The implementation of the Saskatchewan Medical Care Insurance Plan on July 1, 1962 was accompanied by the withdrawal of normal services by most physicians in the province and the creation of a temporary emergency service operated by the College of Physicians and Surgeons in 29 hospitals; by July 23 agreement was reached on certain amendments in the Plan and normal services were restored. The Ontario and Alberta Legislatures early in 1963 were considering the possibility of introducing provincial medical care insurance plans, but for the most part insurance for medical care in Canada was still based on voluntary prepayment plans with approximately one half the population enrolled. However, over 98 p.c. of the insurable population was covered under the nation-wide hospital insurance and diagnostic services program operated by the provinces with federal financial support. During the year more than three million patients were admitted to general hospitals and almost 95 p.c. of the half-million births occurred in hospital.

Development in the sciences related to medicine, improved health services, and better nutritional and other standards are contributing to generally favourable health conditions-to a declining death rate and a longer expectation of life. Substantial progress in the fight against contagious diseases has not yet been paralleled by progress in solving the problems presented by chronic illness and the disabilities of older persons. Heart and hypertensive diseases, arthritis and rheumatism are among the leading causes of disability, although residual disability from stroke, Parkinson's disease, epilepsy and multiple sclerosis also accounts for large numbers of disabled persons. The death rate from lung cancer continues to increase and the disease is the subject of continuing investigation. Interest in mental illness has increased in recent years and new approaches to the solution of this major problem are being explored. Accidents, especially traffic accidents, constitute a steady and tragic problem, particularly as they affect children. Canada shares the world-wide concern for the hazards of radiation from medical and industrial causes as well as from fallout, and has devoted considerable attention to this problem.

Progress in the welfare field also continues to be substantial and efforts are concentrated on remaining problems, some of which are of considerable magnitude. Ontario in 1962 introduced a Bill to extend and improve private pension plans and to make pension benefits portable; a revised version of the Bill was introduced in March 1963 and was passed by the Legislature early in May. At the same time, the Federal Government continued to develop its plans for a nation-wide contributory old age, survivors' and disability insurance program, and requested provincial approval for a constitutional amendment to give it necessary authority. In November 1962 the Federal Government established a welfare grant program providing grants for general welfare projects, professional training and research; initially $\$ 250,000$ was allocated for this program, with the expectation of a tenfold increase in the next five years. This program takes its place beside the $\$ 5,000,000$ fitness and amateur sport grant program introduced in 1961 and the health grant program introduced in 1948, which now has an annual allocation of $\$ 55,000,000$. Proposals for improved general assistance programs are being explored and Quebec, in December 1961, set up an independent Committee on Public Assistance to study this whole question, including appropriate allowance scales and the co-ordination of public and private efforts.

Rapid urbanization, large-scale immigration and increasing numbers of older persons in the population are among the forces requiring new approaches to Canada's welfare problems. At the same time, the growth of the industrial community has been associated with a marked improvement in the general standard of living. Higher real income has
permitted better levels of nutrition and better housing in the urban industrial centres. During the past decade, many urban services have been extended to the rural population, so that improvements in the national standard of living are being shared more equally by the urban and rural populations.

## 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 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 Civil 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 has become a major activity during the past decade.

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.-National Health Grant Program

The National Health Grant Program, inaugurated in 1948, initially made ten federal grants available to the provinces for the development and strengthening of public health and hospital services. Nine were continuing grants: the Hospital Construction, Professional Training, General Public Health, Public Health Research, Mental Health, Tuberculosis Control, Cancer Control, Venereal Disease Control, and Crippled Children Grants. A Health Survey Grant lapsed in 1953 following completion of provincial health surveys. In 1953, after a review of the first five years of the Program, three new grants were established: Child and Maternal Health, Medical Rehabilitation, and Laboratory and Radiological Services.

In 1958, federal assistance under the Hospital Construction Grant was increased to $\$ 2,000$ per hospital bed (whether active treatment, chronic, mental or tuberculosis), double the previous grant for active treatment beds. In addition, funds were made available to meet up to one third of the cost of approved alterations and renovations to existing facilities, with the federal contributions being at least matched by the provinces.

Beginning with the fiscal year 1960-61, a redistribution and merging of certain grants was effected to provide a more flexible measure of assistance and at the same time make larger amounts available for programs where additional aid was necessary. Adjustments were also required for services aided under certain grants, such as laboratory and radiological services and cancer control, now aided under the Hospital Insurance Program. The total allocation remained approximately the same but the number of separate grants was reduced to nine. The General Public Health Grant was increased by almost $\$ 5,500,000$ and projects under two previously separate grants-the Laboratory and Radiological Services Grant and the Venereal Disease Control Grant-were absorbed into it. The Medical Rehabilitation and Crippled Children Grants were merged and the combined allocation increased by more than $\$ 1,000,000$. The Mental Health Grant was increased by more than $\$ 1,500,000$, and the Professional Training and the Public Health Research Grants by about $\$ 1,250,000$ each. The Tuberculosis Control Grant was decreased by nearly $\$ 750,000$ and the Child and Maternal Health and Cancer Control Grants by lesser amounts. The grants for professional training and public health research, previously fixed amounts, were placed on a per capita basis, to increase with expansion of the population.

Up to Mar. 31, 1962, aid for hospital construction had been approved for 101,322 beds, 12,633 bassinets, 20,495 nurses' beds, 663 interns' beds, and space in community health centres and laboratories. Approximately 33,694 health workers had been trained or were undergoing special training and more than 6,500 health workers were employed with federal grant assistance. The proportion of the total grants appropriation paid out to the provinces has increased steadily. Payments in 1961-62 totalled $\$ 48,999,753$, or 89 p.c. of the amount available; the average utilization during the fourteen years of the program was 76 p.c.
1.-Amounts Available and Amounts and Percentages Expended under the National Health Grant Program, by Grant, for the Fourteen-Year Period Ended Mar. 31, 1962 and for the Year Ended Mar. 31, 1962.

| Grant | 1948-62 Period |  |  | Year Ended Mar. 31, 1962 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount Available ${ }^{1}$ | FAmount Expended | Percentage <br> Expended | Amount Available ${ }^{1}$ | Amount Expended | Percentage Expended |
|  | \$ | \$ |  | \$ | \$ |  |
| Crippled Children ${ }^{2}$ | 6,207,728 | 4,431,677 | 71 | - | - |  |
| Professional Training | 9,704,544 | 9,176, 330 | 95 | 1,781,400 | 1,447,457 | 81 |
| Hospital Construction... | 170,949,852 | 152,810,959 | 89 | 17,367,320 | 18,999, $996{ }^{3}$ | 109 |
| Venereal Disease Control Mental Health........... | $\begin{array}{r}\text { 5, } \\ 91,781,336 \\ \hline\end{array}$ | $5,146,209$ $73,671,659$ | 86 80 | 8,765,391 | $8,237,447$ | 94 |
| Tuberculosis Control | 55, 5444,862 | 51,654,874 | 93 | $8,500,000$ | 3,249,366 | 93 |
| Public Health Research | 8,652,648 | 7, 386,920 | 85 | 1,781,400 | 1,617,096 | 91 |
| Health Surve ${ }^{\text {b }}$. ${ }^{\text {a }}$. | 645,180 | 7,540,960 | 84 |  | 1,617,008 |  |
| General Public Health | 112,765,401 | 77,687,139 | 69 | 14,251,200 | 9,659,723 | 68 |
| Cancer Control.................... | 50,065,653 | 34,875,936 | 70 | 3,500,000 | 2,785,311 | 80 |
|  | 47,404,300 | 14,450,881 | 30 |  | - |  |
| Medical Rehabilitation ${ }^{\text {² }}$. | 6,500,000 | 3,016,750 | 46 |  | - |  |
| Child and Maternal Health ${ }^{\text {s }}$ | 15,000,000 | 10,197,161 | 68 | 1,750,000 | 1,388,443 | 79 |
| Medical Rehabilitation and Crippled | 5,250,000 | 2,774,118 | 53 | 2,625,000 | 1,614,914 | 62 |
| Totals. | 586,440,169 | 447,821,573 | 76 | 55,321,711 | 48,999,753 | 89 |

[^69]
## Subsection 2.-Hospital Insurance

The federal-provincial hospital insurance program, established in all provinces and both territories, covers 98.7 p.c. of the insurable population of Canada. The system of federal grants-in-aid to the provinces to help meet the cost of specified hospital services is set out under the federal Hospital Insurance and Diagnostic Services Act of 1957. The methods of financing and administering the provincial plans, as well as the types of service offered above the minimum stipulated in the Act, rest with the provinces.

Federal legislation covers specified hospitals, generally including acute, chronic and convalescent institutions. Tuberculosis and mental hospitals are excluded from the federal-provincial plan, as are institutions providing custodial care. On the other hand, the psychiatric and tuberculosis units of general hospitals are included.

The range of in-patient benefits that, under the Act, is required to be provided 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 outpatients, although authorized for assistance under the federal legislation, are not mandatory upon provincial plans. All provinces but one provide insured 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.

There is considerable variation between provinces in the administration and financing of programs. General revenues, provincial sales taxes and personal premiums are utilized, separately and in combination, in different provinces. The Federal Government pays each province 25 p.c. of the per capita cost of in-patient services in Canada as a whole, together with 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 shareable costs. However, for individual provinces the proportion of shareable costs met by the Federal Government varies, with a higher proportion of the cost of low-cost programs being met than of high-cost programs. Federal payments to the provinces under the program from July 1, 1958 to Mar. 31, 1962, as shown in Table 2, totalled nearly $\$ 680,000,000$.

## 2.-Federal Payments to Participating Provinces under the Hospital Insurance and Diagnostic Services Act, July 1, 1958-Mar. 31, 1962

| Province or Territory | $\begin{gathered} \text { July 1-Dec. } 31, \\ 1958 \end{gathered}$ | $\begin{gathered} \text { Calendar Year } \\ 1959 \end{gathered}$ | $\begin{gathered} \text { Calendar Year } \\ 1960 \end{gathered}$ | $\underset{1961}{\text { Calendar Year }}$ | $\begin{gathered} \text { Jan. 1-Mar. } \\ 1962 \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Contributions | Contributions | Advances ${ }^{3}$ | Advances ${ }^{3}$ | Advances ${ }^{3}$ |
|  | § | \$ | \$ | 8 | \$ |
| Newfoundland. | 1,990,135 | 4,788, 014 | 4,993,524 | 5,626,924 | 1,490,205 |
| Prince Edward Island | - | 235,524 | 1,072,409 | 1,203,258 | 328,848 |
| Nova Scotia.... |  | 8,149,540 | 9,284,357 | $10,595,263$ $9,086,618$ | $3,174,483$ $2,294,131$ |
| New Brunswick. | 二 | 3,331,614 | 7,324,198 | $9,086,618$ $66,746,709$ | 20,212,549 |
| Ontario. | - | 72,610,304 | 80,860,904 | 95,016,981 | 25,528,010 |
| Manitoba. | 4,779,866 | 11,556,010 | 12,599,069 | 14,086,401 | 3,746,496 |
| Saskatchewan | 5,775,876 | 13, 276,380 | 14,087,668 | 15,119,648 | 3,956,524 |
| Alberta. | 6,494,722 | 14,362,6631 | 16,378,050 | 18,778, 936 | 5,095, 077 |
| British Columbia | 8,609,463 | 20,033,811 | 21,955,550 | 24,271,046 |  |
| Yukon Territory...... | 二 | - | 112,206 180,126 | 269,521 362,037 | $\begin{aligned} & 82,994 \\ & 97,628 \end{aligned}$ |
| Totals | 27,650,062 | 148,343,860 ${ }^{2}$ | 168,848,061 | 261,163,343 | 72,518,194 |
| $\begin{gathered} \text { Cumulative Total, July } \\ \text { 1958-Mar. 31, 1962...... } \end{gathered}$ |  |  |  |  | 678,553,520 |

[^70]The data appearing in Tables $\mathbf{3}$ to $\mathbf{5}$ pertain either to hospitals in the provinces participating during the whole calendar year or (where noted) to hospitals in provinces participating by the end of 1960 . The tables refer to hospitals listed in the hospital insurance agreements. Hospitals participating in hospital insurance programs are designated as "budget review hospitals", which comprise the bulk of hospitals listed in the agreements, and contract hospitals, which are defined in the hospital insurance regulations as private or industrial hospitals with which a province has contracted for the provision of insured services. Federal hospitals, also listed in the agreements, are included in Tables 3 and 4. Budget review hospitals include general hospitals designed for acute or short-term care, special hospitals and chronic hospitals.

On Dec. 31, 1960, nine provinces and both territories were participating in the hospital insurance program. The 1,024 hospitals of all categories reporting showed a total of 86,178 beds and cribs set up at the end of 1960, a rate of 6.7 beds per thousand population; provincial rates ranged from 4.3 in Newfoundland to 8.4 in Alberta. The volume of hospital days per thousand population also varied considerably from province to province; the rate for the nine provinces participating in the hospital insurance program during 1960 was $1,980.4$ days, a rate considerably below the averages in Saskatchewan and Alberta but well above the averages in Newfoundland and Prince Edward Island. In these nine provinces, 87.1 p.c. of all days of care in hospital were insured days in 1960.
3.-Number of Beds and Cribs in Hospitals Listed in Hospital Insurance Agreements, with Rate per 1,000 Population, by Province, as at Dec. 31, 1960

| Province or Territory |  |
| :--- | :--- | ---: | ---: | ---: |

${ }^{1}$ Per 1,000 population; based on population estimated as at Jan. 1, 1961.
4.-Total Patient-Days and Insured Patient-Days in Hospitals Listed in Hospital Insurance Agreements, with Rates per 1,000 Total and Insured Population, by Province, 1960

| Province | No. of Hospitals Reporting | Total Patient-Days during Year |  | Insured Patient-Days during Year |  | Insured as a Percentage of Total Patient-Days |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Number | Rate ${ }^{1}$ | Number | Rate ${ }^{2}$ |  |
| Newfoundland. | 40 | 579,867 | 1,294.3 | 524,656 | 1,148.0 | 90.5 |
| Prince Edward Island | 9 | 160,926 | 1,562.4 | 140,857 | 1,622.6 | 87.5 |
| Nova Scotia..... | 48 | 1,153,602 | 1,586.8 | 1,030,541 | 1,468.0 | 89.3 |
| New Brunswick | 38 | 1,097, 127 | 1,862.7 | 929,674 | 1,780.1 | 84.7 |
| Ontario. | 323 | 12,196,676 | 1,995.9 | 10,587,204 | 1,857.9 | 86.8 |
| Manitoba.. | 100 | 1,797,564 | 1,984.1 | 1,543,755 | 1,750.1 | 85.9 |
| Saskatchewan | 159 | 2,118,510 | 2,315.3 | 1,990,543 | 2,240.5 | 94.0 |
| Alberta. | 121 | 2,840,181 | 2,200.0 | 2,540,354 | 1,997.1 | 89.4 |
| British Columbia | 112 | 3,191,467 | 1,992.2 | 2,595,285 | 1,628.2 | 81.3 |
| Totals, Nine Provinces. . | 950 | 25,135,920 | 1,980.4 | 21,882,869 | 1,808.0 | 87.1 |

[^71]The total cost of operating budget review hospitals in the nine participating provinces in 1960, including items of expense not covered under the hospital insurance program, was $\$ 462,400,000$. This total included $\$ 298,800,000$ for salaries and wages, $\$ 15,900,000$ for medical supplies, $\$ 20,100,000$ for drugs, $\$ 30,800,000$ for food, $\$ 63,900,000$ for other departmental supplies and expenses, and $\$ 32,900,000$ for other expenses consisting mainly of interest payments and depreciation allowances. Table 5 gives various classifications of these expenditures.

The per patient-day cost of salaries and wages ranged from a low of $\$ 8.67$ for Prince Edward Island to a high of $\$ 15.34$ for British Columbia, the average for the nine provinces being $\$ 13.88$. There was little variation among the provinces in costs of drugs and of medical supplies. Since raw food cost includes food supplied to staff, in-patients and visitors, the differences in such costs per patient-day probably reflect variations in the proportion of hospital staff taking meals at the hospitals rather than variations in the cost of food per meal served. The main items comprising "Other Supplies and Expense" are fuel, electricity, water, insurance, replacements of bedding and linen, laundry supplies, housekeeping and cleaning supplies, repairs to buildings, repairs to furniture and equipment, maintenance of physical plant, printing, postage, stationery, office supplies and telephone.

The total per capita operating cost of hospitals in the nine provinces was $\$ 36.43$, ranging from $\$ 21.06$ in Newfoundland to $\$ 42.33$ in Saskatchewan. The variations in total per capita expenses are very large, partly because of the variation in the number of hospital days of care provided per thousand persons in each province.

The percentage distribution of expenses shows that about 65 p.c. of the operating costs of the hospitals was for wages and salaries, 3 p.c. for medical supplies, 4 p.c. for drugs, 7 p.c. for food, 14 p.c. for other departmental supplies and expenses and 7 p.c. for depreciation, interest and other non-departmental expenses. British Columbia hospitals spent almost 68 p.c. of their operating funds on salaries and wages as compared with 52 p.c. in Prince Edward Island.
5.-Revenue Fund Expenditures of Budget Review Hospitals, by Type of Account and by Province, 1960

| Province | Departmental Expenditures |  |  |  |  |  | Total <br> Revenue Fund Expense ${ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Salaries and Wages | Medical and <br> Surgical Supplies | Drugs | $\xrightarrow{\text { Raw }}$ Food | Other Supplies and Expense | Total <br> Depart <br> mental <br> Expense |  |
|  | Amounts of Expenditures |  |  |  |  |  |  |
|  | \$ | \$ | \$ | \$ | \$ | \$ | \$ |
| Newfoundland......... | 5,048,899 | 363,583 | 569,968 | 1,120,465 | 1,811,294 | 8,914,209 | 9,436,015 |
| Prince Edward Island.. | 1,333,588 | 86,258 | 129,942 | -242,473 | 497,893 | 2,290,154 | 2,575,236 |
| Nova Scotia.. | 12,835,999 | 896,059 | 927,174 | 1,927,770 | 4,178,915 | 20,765,917 | 22,158,661 |
| New Brunswick | 150,913,386 | 766,472 $7,750,063$ | 9, 9 | 14, 1400,042 | 30,851,743 | 18,316, 21888 | 229,573,410 |
| Manitoba | 21,260,533 | 1,092,248 | 1,665,945 | 1,963,310 | 4,377,444 | 30,359,480 | 32,368,470 |
| Saskatchewan........... | 25,384,723 | 1,162,311 | 1,632,918 | 2,417,729 | 5,375,049 | 35,972,730 | 38,729,329 |
| Alberta. | 29,999,355 | 1,875,291 | 1,970,099 | 3,631,264 | 5,820,980 | 43,296,989 | 47,058,143 |
| British Columbia...... | 40,486,093 | 1,937,112 | 2,514,737 | 3,514,122 | 7,536,733 | 55,988,797 | 59,618,610 |
| Totals, Nine Provinces. | 298,776,938 | 15,929,397 | 20,137,558 | 30,778,737 | 63,867,296 | 429,489,926 | 462,360,478 |

For footnote, see end of table.
5.-Revenue Fund Expenditures of Budget Review Hospitals, by Type of Account and by Province, 1960-concluded

| Province | Departmental Expenditures |  |  |  |  |  | Total Revenue Fund Expense ${ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Salaries and Wages |  | Drugs | $\xrightarrow[\text { Raw }]{\text { Rood }}$ | Other Supplies and Expense | Total <br> Departmental Expense |  |
|  | Expenditures per Patient-Day ${ }^{2}$ |  |  |  |  |  |  |
|  | \$ | \$ | \$ | \$ | \$ | \$ | \$ |
| Newfoundland......... | 10.57 | 0.76 | 1.19 | 2.34 | 3.79 | 18.66 | 19.75 |
| Prince Edward Island. . | 8.67 | 0.56 | 0.84 | 1.58 | 3.24 | 14.89 | 16.74 |
|  | 12.42 | 0.87 | 0.90 | 1.87 | 4.04 | 20.10 | 21.45 |
| New Brunswick........ | 11.79 | 0.78 | 0.98 | 1.70 | 3.50 | 18.75 | 21.34 |
| Ontario.. | 14.72 | 0.76 | 0.95 | 1.40 | 3.01 | 20.84 | 22.40 |
| Manitoba....... | 13.65 | 0.70 | 1.07 | 1.26 | 2.81 | 19.50 | 20.79 |
| Saskatchewan. | 13.37 | 0.61 | 0.86 | 1.27 | 2.83 | 18.94 | 20.39 |
| Alberta. | 11.79 | 0.74 | 0.77 | 1.43 | 2.29 | 17.01 | 18.49 |
| British Columbia...... | 15.34 | 0.73 | 0.95 | 1.33 | 2.86 | 21.22 | 22.60 |
| Totals, Nine Provinces........ | 13.88 | 0.74 | 0.94 | 1.43 | 2.97 | 19.95 | 21.47 |
|  | Expenditures per Captia ${ }^{3}$ |  |  |  |  |  |  |
|  | \$ | \$ | \$ | \$ | \$ | \$ | \$ |
| Newfoundland......... | 11.27 | 0.81 | 1.27 | 2.50 | 4.04 | 19.90 | 21.06 |
| Prince Edward Island.. | 12.95 | 0.84 | 1.26 | 2.35 | 4.83 | 22.23 | 25.00 |
| Nova Scotia........ | 17.66 | 1.23 | 1.28 | 2.65 | 5.75 | 28.56 | 30.48 |
| New Brunswick........ | 19.55 | 1.30 | 1.62 | 2.82 | 5.80 | 31.10 | 35.39 |
| Ontario................ | 24.69 | 1.27 | 1.60 | 2.34 | 5.05 | 34.95 | 37.57 |
| Manitoba............... | 23.47 | 1.20 | 1.84 | 2.17 | 4.83 | 33.51 | $-35.73$ |
| Saskatchewan. | 27.74 | 1.27 | 1.78 | 2.64 | 5.87 | 39.31 | 42.33 |
| Alberta................ | 23.24 | 1.45 | 1.53 | 2.81 | 4.51 | 33.54 | 36.45 |
| British Columbia. | 25.27 | 1.21 | 1.57 | 2.19 | 4.70 | 34.95 | 37.22 |
| Totals, Nine Provinces. | 23.54 | 1.25 | 1.59 | 2.43 | 5.03 | 33.84 | 36.43 |

Percentage Distribution of Expenditures

| Newfoundland Prince Edward Island. | 53.5 | 3.9 | 6.0 | 11.9 | 19.2 | 94.5 | 100.0 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 51.8 | 3.3 | 5.0 | 9.4 | 19.3 | 88.9 | 100.0 |
| Nova Scotia... | 57.9 | 4.0 | 4.2 | 8.7 | 18.9 | 93.7 | 100.0 |
| New Brunswick | 55.2 | 3.7 | 4.6 | 8.0 | 16.4 | 87.9 | 100.0 |
| Ontario. | 65.7 | 3.4 | 4.3 | 6.2 | 13.4 | 93.0 | 100.0 |
| Manitoba.............. | 65.7 | 3.4 | 5.1 | 6.1 | 13.5 | 93.8 | 100.0 |
| Saskatchewan.......... | 65.5 | 3.0 | 4.2 | 6.2 | 13.9 | 92.9 | 100.0 |
| Alberta...... | 63.7 | 4.0 | 4.2 | 7.7 | 12.4 | 92.0 | 100.0 |
| British Columbia | 67.9 | 3.2 | 4.2 | 5.9 | 12.6 | 93.9 | 100.0 |
| Provinces. | 64.6 | 3.4 | 4.4 | 6.7 | 13.8 | 92.9 | 100.0 |

[^72]
## Subsection 3.-Food and Drug Control

The Food and Drugs Act is a federal statute with provisions applying 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. The sale for human consumption of meat from animals that were not healthy at the time of slaughter or that died from disease is expressly prohibited. With advances in modern food technology, methods of laboratory analysis must be developed to assure the safety of new types of ingredients and packaging materials. In recent years there has been an increase in the number of chemicals used in foods and the safety of the foods to which they are added becomes a matter for special research. Another subject of current importance is the bacteriology of frozen foods in guarding against contamination through improper storage of frozen foods already cooked. Since the Food and Drugs Act is intended for the protection of consumers, a section of the Food and Drug Directorate has been established to obtain consumer opinion and deal with individual consumer complaints as well as to provide sound information on which consumers can base opinions.

Drug standards are subject to continuous review and testing. Stringent licensing controls apply to drugs made for injection into the human body, such as vaccines, sera and antibiotics and, prior to licensing, the safety of the product is verified in federal laboratories. Detailed information on all new drugs must be reviewed by the Directorate before release for sale is permitted. The listing of drugs to be sold only on prescription is determined in co-operation with the medical and pharmaceutical associations. In general, any drug that can be classed as a sedative, hypnotic or tranquillizer goes automatically on the prescription list. To provide more effective control of certain drugs coming mainly under the class of barbiturates and commonly known as 'goof balls', an amendment to the Food and Drugs Act was enacted in 1961. This requires the licensing of persons dealing in these substances, as well as the keeping of special records, and limits the importation, manufacture, distribution and use of such drugs to medical purposes.

The Food and Drug Directorate also administers the Proprietary or Patent Medicine Act which is concerned with the registration before marketing and the annual licensing of secret-formula medicines sold under proprietary or trade names.

Regulation of the supply and use of narcotic drugs is carried out under the Narcotic Control Act. The legislation, as revised in 1961, authorizes more severe penalties for smuggling and trafficking in narcotic drugs, and introduces special provisions relating to the control and custody of narcotic addicts for purposes of treatment. The minimum sentence of six months for illegal possession is removed and the legislation now prescribes a penalty of seven years with no minimum for this offence; the maximum penalty for trafficking is increased from 14 years to life imprisonment; and illegal export and import is established as a special offence for which the minimum and maximum penalties are, respectively, seven years and life imprisonment. Persons convicted of offences under the Act who are found to be drug addicts may be sentenced for treatment, for an indeterminate period, in institutions that will operate under the penitentiaries system and the National Parole Board service.

During 1962 three amendments to the Food and Drug Act were enacted to reinforce certain aspects pertaining to the control of drugs. These were concerned with providing authority (1) to prescribe the conditions respecting the distribution of samples of drugs by pharmaceutical manufacturers to the medical, dental, veterinary and pharmacy professions; (2) to prohibit the sale of certain designated drugs (Schedule H) in the interests of public health; and (3) to define more clearly the requirements regarding the introduction of new drugs for clinical trial and marketing.

## Subsection 4.-Medical Services

Indians and Eskimos.-Through the Directorate of Medical Services, the Department of National Health and Welfare staffs and operates various facilities for a registered population of about 192,000 Indians and 12,000 Eskimos. Responsibility for the general welfare of Indians and Eskimos in the community is shared with the Indian Affairs Branch of the Department of Citizenship and Immigration and with the Department of Northern Affairs and National Resources.

In the provinces, the Department provides medical and public health services to registered Indians or Eskimos who are not included under provincial arrangements and who are unable to afford to provide for themselves. A large volume of the service in treatment and health education is rendered to patients through departmental clinics of the outpatient type which are 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; about 50 of these were operated throughout Canada in 1962. The Department maintains about 20 hospitals at strategic points and co-operates elsewhere with community, mission or company hospitals. General and chronic hospital care is prepaid as part of provincial hospital insurance schemes, and mental and tuberculosis care is met directly by the Federal Government.

The accessibility of essential medical and health services to most of the Indian population and, to a lesser extent the Eskimo, has made possible a steady decline in the incidence of disease, although the rate is still high. Wherever practicable, there has been an increasing integration with provincial and municipal health agencies. Native health workers are being 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 Directorate 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 health department for the Council of the Northwest Territories and assists the territorial government of the Yukon in its steps to provide certain health services. A close liaison is maintained with the federal departments directly responsible for administrative matters affecting these groups or geographic areas.

In the Yukon Territory, services for the white 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 Northern Health Service of the Department of National Health and Welfare. In the Northwest Territories similar services are administered through the Northern Health Service, the costs being shared by the Department of Northern Affairs and National Resources 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.

Hospital insurance plans in both the Yukon and Northwest Territories came into operation in 1960.

Immigrants.-The Department of National Health and Welfare advises on the administration of sections of the Immigration Act dealing with health, and conducts in Canada and other countries the medical examination of applicants for immigration. It also provides care for immigrants who become ill en route to their destination or while awaiting employment. Further assistance in the provision of hospital and medical services is available to indigent immigrants during their first year in Canada, either from the Federal Government or from the province with federal sharing of costs.

Quarantine.-Under the Quarantine Act, all vessels, aircraft and other conveyances together with their crew members and passengers arriving in Canada from foreign countries are inspected by quarantine officers to detect and correct conditions that could lead to the entry and spread of quarantinable diseases in Canada. Fully organized quarantine stations are located at all major seaports and airports.

Under the provisions of the Leprosy Act, modern facilities for the diagnosis and treatment of leprosy are provided at Tracadie, N.B., for the small number of persons in Canada suffering from this disease.

Sick Mariners.-Under the authority of Part V of the Canada Shipping Act, the Department of National Health and Welfare provides prepaid health services for crew members of foreign-going ships arriving in Canada and Canadian coastal vessels in interprovincial trade; crew members of Canadian fishing and government vessels may participate on an elective basis. Hospital care of crew members having residence in Canada is the responsibility of the provincial hospital insurance authority concerned.

Civil Aviation Medical Service.-Medical examiners are responsible for the standard of physical fitness of personnel flying civil aircraft.

Civil Service Health Counselling Service.-Formerly available chiefly to the public service in Ottawa, health counselling is now offered through major medical services units to federal employees throughout the country.

## Subsection 5.-Medical Research and International Health

Medical Research.*-Medical research in Canada is carried on in universities and hospitals and by research institutes and government departments. Financial support for such research, provided by the federal and provincial governments, by private foundations and voluntary agencies and by the universities and hospitals themselves, assists in establishing research fellowships for training, in providing salaries to established investigators and in the awarding of grants in aid of research in the various disciplines of the medical sciences.

The Department of National Health and Welfare conducts intramural research related to its statutory functions and with the object of preserving and improving the health of Canadians. Within the Department, research is done in the laboratories or clinic services of the Health Services Directorate (particularly its Laboratory of Hygiene and Divisions of Occupational Health, Radiation Protection, Nutrition, and Epidemiology), of the Food and Drug Directorate, and of the Medical Services Directorate. In the Administration Branch, the Research and Statistics Division carries out special studies, including surveys, in social and medical economics. The Department of National Defence maintains well-equipped laboratories in which research is carried out concerned chiefly with raising the operating efficiency of the person working in the military environment. The Department of Veterans Affairs encourages research in its own hospitals, mainly in the fields of chronic illness such as arthritis, atherosclerosis, and metabolic, nutritional, neurological and mental disorders.

A great variety of medical problems are studied in medical school laboratories, hospitals and other medical institutes. In this area, funds from the federal treasury are provided through the Medical Research Council, the Department of National Health and Welfare and the Defence Research Board. The Medical Research Council has an interest in the broad field of the medical sciences and has an established policy with respect to the support of scientific personnel and to grants in aid of research. The former category involves awards to Medical Research Fellows who are in training, as well as to Medical Research Scholars and Medical Research Associates who are independent scientists, the first less senior than the second. The grants in aid of research involve assistance

[^73]covering the whole or part of the costs of investigations in the basic medical sciences, such as anatomy, physiology, pharmacology, biochemistry, bacteriology and pathology, as well as of investigations in the clinical sciences, including experimental medicine and surgery.

The Department of National Health and Welfare provides grants in aid of medical research sponsored by the provinces and conducted in universities, hospitals and other institutions from funds established under the National Health Grant Program (see p. 260). The Public Health Research Grant makes available about $\$ 1,800,000$ annually to assist in stimulating and developing public health research including studies on health services and on hospital administration. In addition, other grants in the areas of mental health, child and maternal health, general public health, and medical rehabilitation and crippled children amount to an approximate $\$ 2,000,000$ annually. This grant-providing program is guided by research sub-committees for various subjects, by a Research Advisory Committee of the Dominion Council of Health, and by conferring with representatives from provinces, from other federal agencies (the Medical Research Council, the Defence Research Board, and the Department of Veterans Affairs) and from voluntary groups such as the National Cancer Institute.

The Defence Research Board awards grants for research related to problems of importance for defence such as shock, preservation of blood, use of blood substitutes, effects of low temperature, etc.

Provincial branches of the Canadian Cancer Society and such government foundations as the Ontario Cancer Treatment and Research Foundation, and the Alcoholism and Drug Addiction Research Foundation give financial support for research in their fields in medical schools and hospitals. Fraternal societies and clubs such as the Rotary Club and private foundations like the J. P. Bickell Foundation, the Atkinson Charitable Foundation, the Muscular Dystrophy Association of Canada, the Canadian Life Insurance Officers Association, the Banting Research Foundation, the Multiple Sclerosis Society and pharmaceutical companies also contribute significantly to the support of medical research in Canada and, in addition, it should be mentioned that granting agencies in the United States give funds in aid of research to many investigators working in universities in Canada.

International Health.-Canada actively assists and co-operates with the World Health Organization 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 under-developed 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. 148 and pp. 153-154). In this respect, during the year 1962 a total of 185 scholars and trainees in a wide range of health disciplines were in Canada under the External Aid Program commencing, continuing or completing their respective studies or observation courses. Some 36 additional applications were being processed or placement was pending at the year's end.

Canadian experts in health legislation and public health engineering undertook specific assignments abroad during the year and specialists in anaesthesiology, pathology and medical technology were provided for teaching and service in Ghana. A radiologist together with two additional anaesthesiologists were recruited for the staff of the developing medical school in Nigeria. By way of capital assistance, the provision of cobalt beam therapy units for centres in the Colombo Plan area was continued. By the end of 1962, 11 units had been shipped, five additional were on order, one new source had been shipped and one was on order.

At the sixteenth World Health Assembly in May, Canada was elected to name a person to serve for a three-year term on the Executive Board of the World Health Organization. Having been elected to the Executive Board of UNICEF by ECOSOC during the previous year, Canada's term of office on that body commenced at the beginning of the year and similarly extends over a three-year period.

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. 268).

The Department is responsible for the enforcement of requirements governing the handling and shipping of shellfish under the International Shellish 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 the World Health Organization and certain duties in connection with the Commission on Narcotic Drugs of the United Nations.

## Section 2.-Provincial and Local Health Services

Provincial and local health services may be grouped into several broad categories: general public health services, primarily of a preventive nature; services for specific diseases or disabilities combining prevention and treatment; services related to general medical and hospital care; and rehabilitation services for disabled persons.

## Subsection 1.-General Public Health Services

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.

Environmental Health.-The control of factors in the environment that are harmful to physical health is a rapidly expanding area of public health activity. For many years, much of the work in this field was related to inspection duties long associated with community health sanitation, such as maintenance of pure milk, water and food supplies, supervision of plumbing and sewage disposal systems, and provision of general sanitary conditions in public areas. Increasing industrialization, however, has imposed new responsibilities calling for new techniques in public health engineering and sanitary services. Air pollution, water pollution and radiation are emerging as major environmental health problems, necessitating co-ordinated effort by 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 consulting 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 communicable disease control in six provinces; in the other provinces these functions are handled by provincial medical health officers. 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.

Through agreements with the Federal Government, all provincial health departments have made Salk vaccine available for free immunization of children and adults; similarly, in 1962, live oral poliovirus (Sabin) vaccine was used extensively in seven provinces. During 1959, the incidence of paralytic poliomyelitis rose in all provinces to its highest level since vaccination began but in 1960 it dropped by more than one half and in 1962 reached a record low. Very few who had received the prescribed number of inoculations contracted the disease.

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 have consultant nursing 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 and in the administration of National Health Grants, including the Child and Maternal Health Grant.

Local health departments serving a very high proportion of the population carry out generalized public health programs, including the provision of maternal and child health services. The basic staff consists of a medical officer of health, public health nurses and sanitary inspectors. Programs and services for mothers and children may include prenatal education, home visiting, child health conferences and school health services. Other health personnel-dentists, nutritionists, health educators and social workers-share interests in the promotion of family health.

Dental Health.-All provincial health departments have dental health divisions which administer programs, varying under local conditions but directed almost entirely to health education and the care of children. Training of dentists and dental hygienists in public health, the operation of children's preventive and treatment clinics, and health education are being undertaken in all provinces. Water fluoridation projects involving a total of more than $1,780,000$ people are in operation in seven provinces. 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 successful locally sponsored plan in which the cost of dental services for children is shared by the local 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 come under a broader grouping of departmental services.

Health Education.-In most provinces a professional full-time 'health educator' is a member of the public health team. A basic concern of provincial health information services is to stimulate public interest in important health needs.

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. New central and branch laboratories have been set up in recent years and the scope of services expanded beyond the routine, but necessary, bacteriological examination of water, milk and food samples. Clinical bacteriology and special pathological services, including medical testing for physicians and hospitals, are steadily increasing in volume. Efforts to co-ordinate public health and hospital laboratory services, special measures to bring laboratory facilities to rural areas, and devices to reduce the direct cost of clinical laboratory procedures to the individual are notable in the growth of public laboratory services.

## Subsection 2.-Services for Specific Diseases or Disabilities

Each province has developed special programs to deal with health problems of particular severity and prevalence, many of which are chronic or long-term in nature. The services and facilities provided are generally similar across the country.

Mental Health.-Major developments in provincial mental health programs have included the expanding and modernizing of mental hospitals, the training of various kinds of psychiatric personnel, and the extension of community mental health services outside mental institutions. Assistance to patients in securing employment and in social adjustment following discharge from mental hospitals-a relatively new field of rehabilitationis being promoted by voluntary groups and government agencies in several provinces.

With the exception of the municipally owned local institutions in Nova Scotia and hospitals in Quebec that operate under religious or lay auspices, most mental institutions are administered by provincial authorities. A great part of the cost is borne by the provincial governments, although a charge, according to ability to contribute, may be made for care in some provinces. Newfoundland and Saskatchewan provide complete free care; Manitoba assumes a minimum maintenance cost 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.

Most public mental institutions provide care and treatment for all types of mental illness; as facilities expand, it is becoming possible to segregate those under intensive treatment from those receiving long-term care. Some provinces maintain separate accommodation for certain categories of the mentally ill. For example, in British Columbia and Alberta, homes for the senile aged are an integral part of the mental institution system. Quebec has separate institutions for epileptics. Eight provinces operate schools for residential treatment and education of mentally defective persons and the maintenance of mentally retarded children in approved boarding or foster homes is receiving government support in a number of provinces. Local day classes, usually sponsored by organizations of parents, offer training opportunities for mentally deficient children in the community.

As the needs of patients are more fully understood and better methods of treatment develop, the daily routine of the mental patient is becoming less restrictive, as is shown by the increasing number of persons coming voluntarily for treatment. Custodial care and locked doors are giving way to open wards where patients may have unrestricted access to grounds and to occupational and recreational areas.

One of the greatest changes in the past decade has been in the extension of community mental health services outside mental institutions. General hospitals have expanded their psychiatric services in both in-patient and out-patient departments. About 50 general hospitals have organized units where psychiatric treatment is provided by professional staffs. Community clinics, where mental disorder may be treated at an early stage and guidance given to children and parents, play an important part in prevention and treatment within the home environment. Fostering this expansion of service are provincial health departments, municipalities or health units, mental institutions, general and allied special hospitals, school boards and voluntary organizations. Day and night care centres form part of the psychiatric service of two large general hospitals in Montreal and day care centres, admitting patients on a nine-to-five basis, are conducted in several other hospitals.

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, is provided. In two provinces extensive BCG programs are in effect and in the other provinces this prophylactic is provided to groups at special risk. Special case-finding 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 82 p.c. since 1951. In 1960 the rate was 4.6 per 100,000. The number of beds set up in sanatoria declined from a peak of 18,977 in 1953 to 11,467 in 1961.

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. In at least five provinces these benefits apply also to out-patients. In others, the previous pattern of services to out-patients-that of assessing costs of treatment in relation to ability to pay-is still in effect. 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. Recent legislation in Newfoundland, Nova Scotia 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. A brief description of the programs of some of these agencies is given in the 1962 Year Book, pp. 270-274 (not carried in this edition), and in Subsection 4 on Services for the Disabled and Chronically Ill, pp. 275-276.

## Subsection 3.-Public Medical Care

Saskatchewan operates a province-wide medical care insurance program (which came into effect on July 1, 1962), and in two other provinces public medical care programs are established for residents of particular areas. Approximately one half of the population of Newfoundland receives physicians' services at home or in hospital under the provincially administered Cottage Hospital Medical Care Plan which is financed in part on a premium basis. Medical indigents not under the plan may also receive care at provincial expense. In addition, all Newfoundland children under the age of 16 years are entitled to free medical and surgical care in hospital. In Manitoba, locally operated, municipal doctor programs, receiving provincial grants, cover about 28,000 persons. Similar programs covered about 158,000 persons in Saskatchewan prior to July 1962.

For several years the Provinces of Nova Scotia, Ontario, Saskatchewan, Alberta and British Columbia have financed the cost of providing health services for specified categories of persons in need and receiving regular public assistance. Manitoba began a comprehensive program in 1960. In some of these provinces the beneficiaries include persons in
receipt of means-tested old age security supplements, old age assistance, blindness and disability allowances, mothers' allowances and certain child welfare cases, and unemployed employables. Nova Scotia covers only mothers' allowance recipients and their dependants, and blindness allowance recipients. In Saskatchewan, old age assistance recipients (for health services other than hospital and medical care), disabled persons, blind persons not receiving a supplemental allowance, and persons on local relief (social aid) are the responsibility of the municipality of residence in regard to health services. The Manitoba program covers cases of need among the aged and infirm, including those in nursing homes or institutions, the blind and the physically or mentally disabled, mothers with custody of dependent children, and neglected children. Indigent persons not covered by these programs may have necessary care financed by the municipalities in which they reside.

Under the Ontario program, the principal medical service covered is physicians' care in the home and office, including certain minor surgical procedures and prenatal and postnatal care. Emergency drugs are a benefit and basic dental care is available to the children of mothers' allowance recipients. In addition to such medical services, Nova Scotia provides major and minor surgical and obstetrical services and medical attendance in hospital. The programs in Saskatchewan, Alberta and British Columbia give complete medical care in the home, office and hospital, including surgical and obstetrical services, all generally used prescription drugs (except in Alberta, and with a 50-p.c. co-charge limitation in Saskatchewan for non-life-saving drugs where financial hardship is not demonstrated), and dental and optical care, sometimes only on special authorization and/or with dollar limits. Prior to July 1, 1962, beneficiaries among the old age assistance group in Saskatchewan were entitled to insured hospital services only, but since that date they have been included under the medical care insurance plan of that province for insured services although personally exempt from premium payments. Services that are paid for in Manitoba include medical and surgical care in homes and doctors' offices, as well as optical and dental care, basic drugs, diagnostic tests, remedial care, appliances, and treatment including physiotherapy. Chiropody, chiropractic and emergency transportation may also be provided. Physicians are expected to offer care in hospital without charge, as in Ontario.

In Alberta, Saskatchewan, Manitoba and Nova Scotia, health services for eligible provincial public assistance recipients are wholly financed from provincial general revenues. In British Columbia, costs are shared on a $90-10$ basis with the municipalities assuming their 10-p.c. share on a basis proportionate to population; in Ontario per capita contributions toward the cost of medical services for unemployed on relief are shared on an 80-20 basis with the municipality of residence.

Since July 1962, every person who has resided in the Province of Saskatchewan for three months (and is not entitled to receive medical services from the Government of Canada) and has paid, or has had paid on his behalf, any premium he is required to pay under the Saskatchewan Medical Insurance Act, is entitled to have payment made on his behalf from the Medical Care Insurance Fund, for medical, surgical and obstetrical care, without limit, in the office, home or hospital, from his physician of choice (including payment at specialists' rates for referred specialists' services). Out-of-province benefits are also paid, on a patientreimbursement basis. There are no restrictions relating to age or pre-existing conditions, or other factors, except the requirement of three months' residence in the province. Physicians providing insured medical services may elect to receive payment in a number of ways: (1) they may contract for a salary or similar arrangement; (2) they may choose to receive direct payment from the administering public agency, 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 payment in full; (3) they may bill their patients directly, the patient in turn being paid by the Commission, on presentation of an itemized account (bill) or receipt, an amount equal to 85 p.c. of the assessed fee; (4) the physician may practise for private fees, whereby the patient assumes all responsibility for payment of the doctor's fee
without any claim on the Commission. In addition, patients may enrol, voluntarily, with an approved health agency upon payment of a fee to cover administration costs. The agency is billed directly by the participating physician and the agency pays the physician, as payment in full, an amount equal to the amount paid to the agency by the Commission in respect of the physician's assessed account.

Municipal doctor plans formerly operating in Saskatchewan were discontinued with the introduction of the province-wide medical care insurance program but arrangements were being completed in the spring of 1963 to continue, under local auspices, insured medical services for some 57,000 residents of the Swift Current Health Region which has operated a prepaid medical-dental program for nearly 17 years.

The Saskatchewan medical care insurance program is financed from personal premiums plus general revenue contributions. No premiums were levied in respect of 1962 but an annual premium of $\$ 12$ per adult or a maximum annual premium of $\$ 24$ per family has been levied for 1963 for medical care coverage. Special corporation and personal income taxes have been introduced to help support the program, along with the use of a portion of revenues from a 5-p.c. retail sales tax.

## Subsection 4.-Services for the Disabled and Chronically Ill

The success of rehabilitation programs for injured workers, war veterans, handicapped children and other disability groups such as the blind and tuberculous has encouraged recent efforts to extend rehabilitation services to all handicapped persons. Examples of the improved services for the disabled and chronically ill are the physical restoration facilities in hospitals and rehabilitation centres, the provincial vocational rehabilitation programs described in Part II, pp. 301-302, and the broader educational and vocational opportunities for handicapped children provided in special schools, classes and training centres. Increasing interest in the social problems created by disability and aging is being taken by the official and voluntary health and welfare agencies, many of which co-operate through social planning bodies at community, provincial and national levels.

Effective rehabilitation depends upon a broad range of services that should be available at the proper time to persons who need them. Based upon a system for case finding, assessment and follow-up, the continuum of organized rehabilitation services encompasses medical care including surgery, restorative services such as physical, occupational and speech therapy and prosthetic services, vocational evaluation, training and counselling, job placement and supportive health and social services.

General and chronic hospitals in the larger cities have set up departments of physical medicine and rehabilitation; many also operate out-patient clinics for various chronic diseases such as arthritis and rheumatism, diabetes, glaucoma, poor vision and deafness, and for orthopaedic and neurological conditions. Separate rehabilitation centres in each province serve the more seriously disabled who require long-term treatment or training to be restored to their usual activities. Among these are a number of special centres for injured workmen and handicapped children, and several for epileptics and paraplegics. Voluntary agencies concerned with specific disability groups including arthritics, the blind, the deaf, children suffering from cystic fibrosis or muscular dystrophy, the mentally ill or retarded, and other categories are also intensifying their rehabilitation efforts. Supportive services such as home care programs that provide therapy and housekeeping services, recreation for the handicapped, sheltered workshops and employment for the home-bound are provided by a growing number of agencies.

Efforts are being made to identify children with congenital anomalies, to develop an adequate system of registration of all handicapped children by locality as well as provincially, and to extend adequate treatment facilities and other services. Several provincial
health departments have set up handicapped children's registries and, in co-operation with the handicapped children's societies, they provide remedial treatment and education at children's hospitals, rehabilitation centres and special schools. The public school systems in the larger cities operate special classes for children with orthopaedic, vision, hearing and mental defects; voluntary agencies also sponsor special classes for the mentally retarded, cerebral palsied, emotionally disturbed and other groups. In addition, there are eight residential schools for the deaf and six for the blind, most of them administered by the provincial education departments.

In addition to its treatment responsibilities carried out on behalf of disabled Indians and Eskimos by the Medical Services Directorate, the Department of National Health and Welfare supports provincial rehabilitation activities through the National Health Grants designated for the extension of medical rehabilitation and crippled children's services and for rehabilitation of the mentally ill or deficient, the tuberculous and other chronically ill persons. In 1961-62, over 75 p.c. of the $\$ 1,614,914$ spent under the Medical Rehabilitation and Crippled Children Grant (see p. 261) was used to extend medical rehabilitation services in hospitals, rehabilitation centres and other facilities. Grant funds were also used for the professional training of medical rehabilitation personnel, for the support of seven schools of physiotherapy, occupational therapy, and audiology and speech therapy, and one school of social work, and for equipment and research.

## 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. 262-265). Another project deals with Civil Service illness. 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. 239-242; those on hospital statistics in Subsection 1 following; and those on notifiable diseases and illness in the Civil Service in Subsection 2. A brief outline of the scope and methods of the Sickness Survey of $1950-51$ is given in the 1955 Year Book and some of the results are published in the 1955, 1956 and 1957-58 editions. Details are available in bulletin form (Catalogue Nos. 82-501 to 82-511).

## Subsection 1.-Hospital Statistics*

For statistical purposes, hospitals are classified in two ways-first by ownership, i.e., public, private or federal, and second by type, i.e., general, allied special (including chronic, convalescent, maternity, communicable diseases and orthopaedic hospitals), mental and tuberculosis.

In 1962 there were 1,376 hospitals of all types operating in Canada, having a rated bed capacity of 199,345 (excluding bassinets for newborn). Of the total, 1,027 were general hospitals with 103,551 beds, 217 were allied special hospitals with 17,382 beds, 83 were hospitals for mental patients with 67,739 beds, and 49 were tuberculosis sanatoria with 10,673 beds. It should be noted that a recent re-evaluation of facilities resulted in the removal from the list of "hospitals" of a number of institutions providing mainly custodial or domiciliary care.

[^74]
## 6.-Hospitals (Public, Private and Federal) Operating in Canada, by Province, 1962


${ }^{1}$ Mental hospitals only; does not include psychiatric or mental units in other hospitals.
${ }^{2}$ Tuberculosis hospitals only; does not include tuberculosis units in other hospitals.

# 7．－Bed Capacity of Hospitals（Public，Private and Federal）Operating in Canada， by Province，as at Dec．31， 1962 

（Excluding bassinets）

| Province or Territory and Category of Hospital | General |  | Allied Special |  | Mental |  | Tuberculosis |  | Totals |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Beds | $\begin{gathered} \mathrm{Per} \\ 10,000 \\ \mathrm{Popu}- \\ \text { lation }^{1} \end{gathered}$ | Beds | $\begin{gathered} \text { Per } \\ 10,000 \\ \text { Popu- } \\ \text { lation }^{1} \end{gathered}$ | Beds | Per <br> 10，000 <br> Popu－ <br> lation | Beds | Per <br> 10，000 <br> Popu－ <br> lation ${ }^{1}$ | Beds | Per 10， Popu lation |
|  | No． | No． | No． | No． | No． | No． | No． | No． | No． | No． |
| Newfoundland－ |  |  |  |  |  |  |  |  |  |  |
| Private．．．．．．．．．． | － | $\bigcirc$ | － | － | － | － | － | － | － |  |
| Federal． | 35 | 0.7 | － | － | － | － | － | － | 35 | 0.7 |
| Prince Edward Island－ |  |  |  |  |  |  |  |  |  |  |
| Private．．．．．．．．．．．．．．．．． | － | － | － | － |  | － | － |  |  |  |
| Federal． | － | － | － | － | － | － | － | － | － | － |
| Nova Scotia－ |  |  |  |  |  |  |  |  |  |  |
| Private． | － 16 | 0.2 | － | － | － | － | 510 | 6.8 | ${ }^{7} 16$ | 0.2 |
| Federal． | 621 | 8.3 | － | － | － | － | － | － | 621 | 8.3 |
| New Brunswick－ |  |  |  |  |  |  |  |  |  |  |
| Private．．．．．．．．．．．．．．．．．．．． | 3，200 | $\underline{52.8}$ | 2 |  |  |  | － | － |  |  |
| Federal．．．．．．．．．．．．．．．．． | 400 | 6.6 | 12 | 0.2 | － | － | － | － | 412 | 6.8 |
|  |  |  |  |  |  |  |  |  |  |  |
| Public．． | 23，000 | 42.9 | 4，523 | 8.4 | 21，674 | 40.4 | 3，336 | 6.2 | 52，533 | 97.9 |
| Private． | 2，991 | 1.8 | 2，361 | 4.4 | － | ． | 25 | 0.1 | 3，377 | 6.3 |
| Federal． | 1，060 | 2.0 | 1，206 | 2.2 | － | － | － | － | 2，266 | 4.2 |
| Ontario－ |  |  |  |  |  |  |  |  |  |  |
| Public．．．．．．．．．．．．．．．．． | 31，629 | 49.9 | 4，387 | 6.9 | 22，028 | 34.7 | 2，659 | 4.2 | 60，703 | 95.7 |
| Private． | 763 | 1.2 | 708 | 1.1 | 392 | 0.6 | － |  | 1，863 | 2.9 |
| Federal． | 3，643 | 5.8 | － | － | － | － | 155 | 0.2 | 3，798 | 6.0 |
| Manitoba－ |  |  |  |  |  |  |  |  |  |  |
| Public．． | 4，698 | 50.3 | 1，128 | 12.1 | 3，575 | 38.2 | 508 | 5.4 | 9，909 | 106.0 |
| Private． | 93 | 1.0 | 50 | 0.5 | － | － | － |  | 143 | 1.5 |
| Federal． | 856 | 9.2 | － | － | － | － | － | － | 856 | 9.2 |
|  |  |  |  |  |  |  |  |  |  |  |
| Public．．．． | 6，332 | 68.1 | 515 | 5.5 | 3，491 | 37.5 | 306 | 3.3 | 10，644 | 114.4 |
| Private． <br> Federal | ${ }_{166}$ | 1.8 | 12 | － | 二 | － | 二 | 二 | 166 | －1．8 |
| Alberta－          <br> $\begin{array}{l}\text { Public }\end{array}$ 8,027 58.6 1,360 9.9 4,908 35.8 600 4.4 14,895 <br> 108.7          |  |  |  |  |  |  |  |  |  |  |
| Public．． | 8，027 | 58.6 | $\underline{1,360}$ | $\underline{9.9}$ | 4，908 | $\xrightarrow{35.8}$ |  | 4.4 | 14，895 | 108.7 |
| Federal | 576 | 4.2 | － | － | － | － | 500 | 3.7 | 1，076 | 7.9 |
|  |  |  |  |  |  |  |  |  |  |  |
| Public．．． | 8，792 | 53.0 0.5 | 452 | 2.7 | 6,136 73 | 37.0 0.4 | 409 | 2.5 | 15,789 149 | 95.2 0.9 |
| Private．．．．．．．．．．．．．．．． | 1，575 | 0.5 9.5 | － | － | 73 | － | 510 | 3.1 | 2，085 | 12.6 |
| Yukon and Northwest Territories－ |  |  |  |  |  |  |  |  |  |  |
| Public．．．．．．．．．．．．．．．． | 401 |  | － |  |  | － | 33 | 8.5 | 434 22 | 11.3 |
| Private．．．．．．．．．．．．．．．．． | ＋298 | 5.6 76.4 | － | － | － | － | 二 | 二 | 298 | 76.4 |
| Canada－ |  |  |  |  |  |  |  |  |  |  |
| Private． | 1，961 | 1.1 | 13，131 | 1.7 | ${ }^{6} \mathbf{4 6 5}$ | 0.2 | ${ }^{1} 25$ |  | 5，582 | 3.0 |
| Federal． | 9，230 | 5.0 | 1，218 | 0.6 | － | － | 1，165 | 0.6 | 11，613 | 6.2 |

[^75]Information on the number of hospitals operating in Canada and their bed capacities (Tables 6 and 7) was available for the year 1962 at the time of preparation of this Chapter, but the most recent figures on movement of patients, patient-days, hospital facilities and hospital finances (Tables 8 to 14) were for 1961.

Admissions to hospitals numbered almost $3,300,000$ in 1961 , or 18,079 per 100,000 population. The average number of patients in hospital on any one day during the year was 175,956 , or one in every 104 persons in Canada.

## 8.-Movement of Patients ${ }^{1}$ and Patient-Days of Reporting Public, Private and Federal Hospitals, by Type, 1957-61

| Type of Service and Item | 1957 | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Public Hospitals |  |  |  |  |
|  |  |  |  |  |  |
| Hospitals reporting. .................... No. | 820 | 833 | 846 | 844 | 841 |
| ing | 98.4 | 98.2 | 98.9 | 99.1 | 98.2 |
|  | 2,675,400 | 2,764,214 | 2,844,352 | 2,935,067 | 3,012,219 |
| Per 100,000 population.................... " | , 16,128 | 16,214 | 16,307 | 16,476 | 16,516 |
| Discharges and deaths..................... " | 2,673,034 | 2,760,932 | 2,840,916 | 2,934,925 | 3,008,708 |
| Patients in hospital at Dec. 31 | -58,359 | 62,561 | 64,836 | 64,322 | 67,211 |
| Per 100,000 population................... " | ${ }^{4}$, 352 | ${ }_{25} 752$ 367 | ${ }^{\text {c }}$, ${ }^{372}$ | ${ }^{27}{ }^{361}$ | 28, $767{ }_{928}^{368}$ |
| Patient-days................................ " | 24,910,797 | 25,752,916 | 26,914,286 | 27, 862,783 | 28,767,928 |
| Chronic and Convalescent- |  |  |  |  |  |
| Percentage of operating hospitals reporting. | 51 85.0 | 82.9 | 88.0 | 96.1 | 92.1 |
|  | 10,297 | 10,941 | 11,710 | 12,822 | 17,284 |
| Per 100,000 population. . . . . . . . . . . . . . . . . " | 62 |  |  |  |  |
| Discharges and deaths................... " | 9,980 | 10,902 | 11,303 | 12,646 | 17,214 |
| Patients in hospital at Dec. 31............. " | 7,898 | 9,131 | 9,895 | 7,977 | 8,740 |
| Per 100,000 population.................... " | 48 | 54 | 57 | 45 | 48 |
| Patient-days............................... " | 2,879,856 | 3,336,708 | 3,542,419 | 2,947,193 | 3,237,864 |
| Maternity- |  |  |  |  |  |
| Hospitals reporting. . . . . . . . . . . . . . . . . . . . . No. Percentage of operating hospitals report- | 12 | 11 | 13 | 13 | 14 |
| ing.................................p.c. | 92.3 | 78.6 | 100.0 | 92.9 | 100.0 |
|  | 25,695 | 24,114 | 48,429 | 43,749 | 46,435 |
| Per 100,000 population. . . . . . . . . . . . . . . . . . . " | 155 | 141 | 278 | 246 | 255 |
| Discharges and deaths................... " | 25,716 | 24,118 | 48,344 | 43,783 | 46,368 |
| Patients in hospital at Dec. 31............. " | 443 | 432 | 1,211 | 617 | 685 |
| Per 100,000 population................. " | 3 | 3 |  |  | 4 |
| Patient-days.............................. " | 189,290 | 174,652 | 327,938 | 277,588 | 287, 199 |
| Mental- |  |  |  |  |  |
| Hospitals reporting. $\qquad$ No. | 72 | 71 | 69 | 67 | 72 |
| Percentage of operating hospitals reporting. | 100.0 | 100.0 | 100.0 | 95.7 | 90.0 |
|  | 26,133 | 27,238 | 29,840 | 28,582 | 34,990 |
| Per 100,000 population. . . . . . . . . . . . . . . . . " | 158 | 160 | 171 | 160 | 192 |
| Discharges and deaths.................... " | 24,821 | 26,172 | 28,144 | 27,506 | 34,883 |
| Patients in hospital at Dec. 31............. " | 63,318 | 63,861 | 63,872 | 63,981 | 73,937 |
| Per 100,000 population................... " | 382 | , 375 | ${ }_{367}$ | , 359 | ${ }^{405}$ |
| Patient-days.............................. " | 23,393,648 | 23,942,562 | 24,049, 237 | 24,199,750 | 24,646,914 |
| Tuberculosis-4 |  |  |  |  |  |
| Hospitals reporting. Percentage of operating hospitals report- | 54 | 51 | 50 | 52 | 50 |
| ing.................................p.c. | 100.0 | 100.0 | 100.0 | 98.1 | 100.0 |
|  | 15,075 | 13,352 | 12,571 | 12,561 | 12,891 |
| Per 100,000 population................... "/ |  | 78 | 72 |  | 71 |
| Discharges and deaths................... " | 18,160 | 15,674 | 13,777 | 13,577 | 14,069 |
| Patients in hospital at Dec. $31 . \ldots . . . . . . .$. Per 100,000 population................ ${ }^{\text {a }}$ " | 9,657 | 8,371 | 7,276 | 6,774 | 5,453 |
| Patient-days................................ . | 3,887,198 | 3,413,428 | 3,131, 830 | - $2,978,494$ | - ${ }^{\text {2, }}$ (17,612 |

For footnotes, see end of table, p. 281.

## 8.-Movement of Patients ${ }^{1}$ and Patient-Days of Reporting Public, Private and Federal Hospitals, by Type, 195\%-61-continued

|  |  |  |  |
| :---: | ---: | ---: | ---: | ---: | ---: |
| Type of Service and Item |  |  |  |

For footnotes, see end of table.

## 8.-Movement of Patients ${ }^{1}$ and Patient-Days of Reporting Public, Private and Federal Hospitals, by Type, 1957-61-concluded

| Type of Service and Item | 1957 | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Federal Hospitals-concluded |  |  |  |  |
| Totals, Federal Hospitals-5 49 47 53 77 73 |  |  |  |  |  |
|  |  |  |  |  |  |
|  | 100.0 | 100.0 | 72.6 | 83.7 | 85.9 |
|  | 77,665 | 76,205 | 81,212 | 84,448 | 82,108 |
|  | 468 | 7447 | ${ }^{1} 466$ | 84.474 | ${ }^{8} 450$ |
| Discharges and deaths. | 77,927 | 76,488 | 81,413 | 84,887 | 82,052 |
|  | 8,713 | 8,477 | 7,805 45 | 7,072 | 7,030 38 |
|  | 3,597,154 | 3,503,386 | 3,154,697 | 3,216,581 | 3,062,640 |
|  | All Hospitals |  |  |  |  |
| General- |  |  |  |  |  |
| Hospitals reporting.................... No. | 918 | 921 | 958 | 975 | 961 |
| Percentage of operating hospitals reporting. | 97.0 | 96.3 | 95.3 | 95.7 | 94.4 |
| Admissions ${ }^{2}$.............................. No. | 2,797,474 | 2,892,119 | 2,985,445 | 3,075,462 | 3,148,199 |
| Per 100,000 population.................... " | 16,863 | 16,965 | 17,116 | 17,264 | 17, 261 |
| Discharges and deaths................... " | 2,795,185 | 2,888,829 | 2,982,061 | 3,075,707 | 3,144,555 |
| Patients in hospital at Dec. 31............. " | 66,681 | 70,649 | 71,924 | 71,519 | 73,372 |
| Per 100,000 population. .................. | 402 | 414 | 412 | 401 | 402 |
| Patient-days............................... " | 28,387,840 | 29,082,386 | 29,946,532 | 31,045,960 | 31,447,412 |
| Mental- |  |  |  |  |  |
| Hospitals reporting....................... No. | 77 | 76 | 76 | 73 | 79 |
| Percentage of operating hospitals reporting. | 97.5 | 96.2 | 96.2 | 94.8 | 88.8 |
|  | 28,251 | 29,839 | 33,146 | 31,527 | 38,251 |
| Per 100,000 population................... " | 170 | 175 | 190 | 177 | 210 |
| Discharges and deaths.................... " | 26,886 | 28,781 | 31,418 | 30,437 | 38,138 |
| Patients in hospital at Dec. $31 . . . . . . . . .$. . " | 63,745 | 64,188 | 65,450 | 64,360 | 74,393 |
| Per 100,000 population................. " | 23,543, 384 | 24 064,497 | 24,631,582 | 24 344.361 | ${ }^{24} 802408$ |
| Patient-days............................... " | 23,543,661 | 24,064,492 | 24,631,582 | 24, 344,250 | 24,802,382 |
| Tuberculosis-4 |  |  |  |  |  |
| Hospitals reporting. $\qquad$ No. Percentage of operating hospitals report- | 60 | 56 | 55 | 58 | 55 |
| ing. <br> ntage of operating hospitals reportp.c. | 100.0 | 100.0 | 100.0 | 96.7 | 98.2 |
|  | 15,825 | 14,046 | 13,074 | 13,260 | 13,924 |
| Per 100,000 population.................. " |  |  |  | 74 | 76 |
| Discharges and deaths................... " | 19,166 | 16,624 | 14,422 | 14,341 | 15,095 |
| Patients in hospital at Dec. 31............ " | 10,433 | 9,067 | 7,707 | 7,361 | 6,049 |
| Per 100,000 population.................. " Patient-days |  |  |  | ${ }_{3}{ }^{4} 519$ | 33 |
| Patient-days.............................. " | 4,206,834 | 3,711,226 | 3,419,222 | 3,355,167 | 2,960,637 |
| Totals, All Hospitals-s |  |  |  |  |  |
| Hospitals reporting . . . . . . . . . . . . . . . . . . . . No. Percentage of operating hospitals re- | 1,306 | 1,301 | 1,349 | 1,279 | 1,269 |
| Percentage of operating hospitals reporting. | 93.5 | 93.1 | 90.7 | 94.7 | 92.3 |
| Admissions ${ }^{2} \ldots \ldots . . . . . . . . . . . . . . . . . . . .$. No. | 2,915,099 | 3,006,285 | 3,136,162 | 3,221,634 | 3,297,382 |
| Per 100,000 population................... " | 17,572 | 17,634 | 17,981 | 18,085 | 18,079 |
| Discharges and deaths................... " | 2,914,241 | 3,003,908 | 3,131,418 | 3,221,539 | 3,294,397 |
| Patients in hospital at Dec. 31............ " | 153,638 | 158,834 | 163,881 | 155,313 | 167,146 |
| Per 100,000 population................. " Patient-days...............$~$ |  |  |  |  | 916 |
| Patient-days.............................. " | 60,854,293 | 62,324,201 | 63,728,183 | 63,321,263 | 64,224,297 |

[^76]Radiology and clinical laboratory facilities were available to patients in about 90 p.c. of the general hospitals in Canada in 1961 and electrocardiography and blood service were available in 76 p.c. and 64 p.c., respectively, of all general hospitals.

## 9.-Percentages of Reporting Public General and Allied Special Hospitals with Facilities Available, by Province, 1961



Average length of stay in general hospitals in 1961 was 10.0 days, slightly longer than in 1960. Length of stay tends to increase with the size of hospital because more specialized treatment is available in larger hospitals and because these hospitals therefore act as major referral centres.
10.-Average Length of Stay of Adults and Children in Public General and Allied Special Hospitals, by Province, 1961

| Type of Hospital | New-foundland | Prince Edward Island | Nova Scotia | New Brunswick | Quebec | Ontario |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | days | days | days | days | days | days |
| General. | 13.8 | 10.0 | 9.8 | 9.5 | 10.2 | 10.5 |
| 1- 9 beds.................. | - | 7.8 | 7.2 | 6.8 | 5.8 | 5.7 |
| 10-24 " | 3.6 | 6.7 | 7.2 | 7.4 | 7.2 | 7.8 |
| 25-49 " | - | 8.0 | 8.1 | 7.3 | 6.4 | 8.8 |
| 50-99 " | - | 7.2 | 9.7 | 8.0 | 8.0 | 9.9 |
| 100-199 " | 9.7 | 10.9 | 9.2 | 8.9 | 8.7 | 8.9 |
| 200-299 " |  | 10.3 | 10.7 | 9.9 | 9.7 | 10.2 |
| 300-499 " ${ }^{\text {500-999 }}$ " | 27.5 | 二 | $\overline{13.0}$ | $\overline{15.8}$ | 10.3 13.4 | 10.6 |
| 1,000 or more beds | - | - | $\underline{-}$ | 15.8 | 13.8 | 14.6 |
| Allied Special- <br> Chronic. <br> Convalescent. $\qquad$ <br> Maternity $\qquad$ <br> Other. $\qquad$ <br> Totals, All Hospitals. |  |  |  |  |  |  |
|  | 173.7 | - | - | - | 220.5 | 364.3 |
|  | - | - | 32.9 | 31.3 | 41.3 | 44.9 |
|  | - | - | 5.7 | 10.0 | 5.5 | 6.3 |
|  | 75.7 | 136.2 | - | 40.6 | 23.0 | 16.0 |
|  | 14.9 | 10.4 | 9.8 | 9.9 | 11.6 | 11.8 |
|  | Manitoba | Saskatchewan | Alberta | British Columbia | Yukon and Northwest Territories | Canada |
|  | days | days | days | days | days | days |
| General. | 8.9 | 9.7 | 9.1 | 9.9 | 7.0 | 10.0 |
| 1- 9 beds. | 8.1 | 7.4 | 5.3 | 3.8 | 5.4 | 7.0 |
| 10-24 " | 7.0 | 7.4 | 7.0 | 7.4 | 6.9 | 7.2 |
| 25-49 " | 6.8 | 7.8 | 6.7 | 7.6 | 7.5 | 7.5 |
| 50-99 " ${ }_{\text {" }}$ (10................. | 8.4 | 8.2 | 8.0 | 8.3 | - | 8.7 |
| 100-199 " $\ldots . . . . . . . . . . . . . . .$. | 9.0 | 9.9 | 8.9 | 9.1 | - | 9.0 |
| 200-299 " | 8.0 | 13.5 | 9.1 | 8.7 | - | 10.0 |
| 300-499 " | 9.0 | 12.0 | 9.6 | 11.0 | - | 10.8 |
| 1,000 or more beds | 11.6 | 13.8 | 10.2 | 11.3 | - | 12.2 |
| Allied Special- |  |  |  |  |  |  |
|  |  | 22.4 | 476.3 | 102.6 | - | 241.2 |
| Convalescent. | - | - | - | 39.6 | - | 40.1 |
| Maternity . . . . . . . . . . . . . . . . . . . . | - | - | 5.6 | 6.7 | - | 6.0 |
| Other. | - | - | 13.0 | 269.5 | - | 22.9 |
| Totals, All Hospitals. | 11.1 | 10.4 | 9.9 | 10.1 | 7.0 | 11.1 |

The 987 public hospitals reporting financial data for 1961 spent a total of $\$ 841,245,000$ in that year and had revenues amounting to $\$ 811,427,000$ (see footnote 1 , Table 11). The 987 hospitals represented 92 p.c. of those required to submit financial data and they contained 96 p.c. of the beds in the public hospitals of Canada. Of the total expenditure, salaries and wages accounted for 64.7 p.c. and medical and surgical supplies and drugs for 7.7 p.c. Of the total revenue, 78.2 p.c. was in-patient earnings.
11.-Revenues and Expenditures of Reporting Public Hospitals, by Type, 1960 and 1961

| Year and Type of Hospital | Hospitals Reporting | Revenues |  |  |  | Expenditures |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Net <br> Inpatient Earnings | Net Outpatient Earnings | Grants and Other Income | Total ${ }^{1}$ | Gross Salaries Wages | Medical and <br> Surgical Supplies <br> Supplie | Drugs | Other | Total |
|  | No. | p.c. | p.c. | p.c. | \$'000 | p.c. | p.c. | p.c | p.c. | \$'000 |
| General..... | 798 | 86.9 | 5.0 | 8.1 | 530,085 | 63.5 | 3.5 | 4.7 | 28.3 | 555,814 |
| 10- ${ }_{10}{ }^{9} 4$ beds.... | 52 225 | 89.4 87.1 | 3.9 4.2 | 12.7 8.7 | 1,961 16,164 | 59.8 57.2 | 2.9 3.8 | 4.9 5.4 | 92.4 34.1 | 2,084 17,123 |
| 25-49 $49 . .$. | 182 | 87.9 | 4.8 | 7.8 | 30,845 | 59.8 | 3.4 | 5.4 5.0 | 34.8 | 32,425 |
| 50-99 " ..... | 114 | 89.6 | 3.6 | 6.8 | 39,139 | 61.7 | 3.0 | 4.9 | 30.4 | 41,114 |
| 100-199 " | 119 | 87.7 | 5.5 | 6.8 | 99,807 | 63.5 | 3.4 | 4.7 | 28.4 | 103,312 |
| 200-299 " $\ldots .$. | 37 | 86.2 | 4.6 | 9.2 | 55,322 | 62.5 | 3.5 | 4.5 | 29.7 | 57,677 |
| 300-499 " $\cdots$. | 39 | 87.2 | 4.9 | 7.9 | 106,081 | 65.8 | 8.6 | 4.6 | 26.0 | 110,710 |
| 500-999 " | 24 | 85.9 | 5.4 | 8.7 | 128,577 | 63.9 | 3.8 | 4.5 | 27.8 | 129,985 |
| 1,000 or more beds | 6 | 85.2 | 4.8 | 10.0 | 57,197 | 64.7 | 3.7 | 4.5 | 27.1 | 61,485 |
| Allied Special- |  |  |  |  |  |  |  |  |  |  |
| Chronic.......... | 38 | 94.1 | 0.2 | 5.7 | 21,787 | 65.9 | 0.9 | 2.5 | 30.7 | 22,085 |
| Convalescent.... | 7 | 91.5 | 0.2 | 8.3 | 2,216 | 61.3 | 1.4 | 2.1 | 35.2 | 2,279 |
| Maternity........ | 9 | 89.4 | 0.5 | 10.1 | 3,839 | 64.5 | 4.2 | 2.6 | 28.7 | 4,011 |
| Other.. | 13 | 64.9 | 4.3 | 30.8 | 8,165 | 60.4 | 1.9 | 2.4 | 35.3 | 8,653 |
| Mental... | 63 | 32.9 | 0.1 | 67.0 | 116,700 | 64.6 | 0.7 | 2.7 | 32.0 | 116,585 |
| Tuberculosis....... | 52 | 73.6 | 0.5 | 25.9 | 31,080 | 61.0 | 1.6 | 1.8 | 35.5 | 31,900 |
| Totals, 1960. | 980 | 77.5 | 3.8 | 18.7 | 713,873 | 63.6 | 2.9 | 4.1 | 29.4 | 741,327 |
| 1961 |  |  |  |  |  |  |  |  |  |  |
| General............ | 793 | 87.9 | 4.8 | 7.3 | 611,815 | 64.7 | 3.3 | 4.4 | 27.6 | 636,205 |
| 10-94 9 beds... | 48 198 | 88.0 878 | 4.0 | 8.0 | 1,928 15,377 | 61.9 58.5 | 2.6 3.0 | 4.9 5.1 | 30.6 38.4 | 2,027 16,515 |
| 25-49 " ${ }^{10}$ - | 192 | 89.0 | 4.6 | 6.4 | ${ }_{93,767}^{18}$ | 60.8 | 3.0 | 4.7 | 31.5 | 35, 402 |
| 50-99 " $\quad . .$. | 126 | 90.4 | 3.9 | 6.7 | 48,489 | 63.9 | 2.9 | 4.4 | 28.8 | 50,458 |
| 100-199 " $\ldots$. | 118 | 89.1 | 5.0 | 5.9 | 108,200 | 64.9 | 3.8 | 4.6 | 27.2 | 112,268 |
| 200-299 " $\ldots .$. | 45 | 87.2 | 4.7 | 8.1 | 73,777 | 63.9 | 3.8 | 4.4 | 29.0 | 76,891 |
| 300-499 " $\ldots$... | 40 | 88.6 | 5.0 | 6.4 | 117,370 | 66.4 | 3.4 | 4.4 | 25.8 | 121,584 |
| 500-999 " | 25 | 86.3 | 5.0 | 8.7 | 147,032 | 65.9 | 3.4 | 4.8 | 27.0 | 158,890 |
| 1,000 or more beds | 6 | 86.5 | 4.5 | 9.0 | 65,885 | 65.4 | 3.5 | 4.2 | 26.9 | 68,771 |
| Allied Special- <br> Chronic | 42 | 93.8 | 0.2 | 6.0 | 25,271 | 67.1 | 1.0 | 2.5 | 29.4 | 26,253 |
| Convalescent.... | 10 | 84.2 | 4.8 | 11.0 | 3,633 | 63.3 | 1.8 | 2.0 | 32.9 | 3,652 |
| Maternity........ | 14 | 92.4 | 1.2 | 6.4 | 4,689 | 65.3 | 4.1 | 2.6 | 28.0 | 4,743 |
| Other. | 9 | 67.2 | 4.9 | 27.9 | 7,513 | 59.1 | 1.6 | 2.4 | 36.9 | 8,152 |
| Mental............. | 72 | 20.5 | - | 79.5 | 130,303 | 65.3 | 0.5 | 2.1 | 32.1 | 132,206 |
| Tuberculosis.. | 47 | 74.2 | 0.5 | 25.3 | 28,202 | 63.4 | 1.3 | 1.9 | 33.4 | 30,034 |
| Totals, 1961. . | 987 | 78.2 | 3.8 | 18.0 | 811,427 | 64.7 | 2.7 | 3.9 | 28.7 | 841,245 |

[^77]
## 12.-Revenues and Expenditures of Reporting General Public Hospitals, by Province, 1961

| Province or Territory | Hospitals Reporting | Revenues |  |  |  | Expenditures |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Net Inpatient Earnings | Net Outpatient Earnings | Grants and Other Income | Total ${ }^{1}$ | 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 |
| Newfoundland..... | 27 | 83.0 | 7.3 | 9.7 | 9,942 | 54.9 | 3.4 | 5.9 | 35.8 | 10,460 |
| Prince Edward | 8 | 76.3 | 6.2 | 17.5 | 2,794 | 54.1 | 3.3 | 4.3 | 38.3 | 3,015 |
| Nova Scotis....... | 44 | 85.9 | 6.7 | 7.4 | 23,469 | 59.7 | 3.5 | 4.2 | 32.6 | 23,672 |
| New Brunswick.... | 33 | 80.7 | 3.7 | 15.6 | 21,970 | 57.3 | 3.4 | 4.2 | 35.1 | 22,645 |
| Quebec.. | 105 | 85.9 | 5.9 | 8.2 | 143,076 | 61.9 | 3.2 | 4.9 | 30.0 | 156,049 |
| Ontario............. | 169 | 89.0 | 5.1 | 5.9 | 236,475 | 66.9 | 3.4 | 4.2 | 25.5 | 238,646 |
| Manitoba. .......... | 74 | 90.8 | 2.9 | 6.3 | 31,226 | 66.4 | 3.2 | 4.9 | 25.5 | 31,696 |
| Saskatchewan...... | 143 | 90.8 | 3.3 | 5.9 | 38,773 | 66.5 | 3.0 | 4.1 | 26.4 | 39,978 |
| Alberta............ | 100 | 87.5 | 3.3 | 9.2 | 44,457 | 64.7 | 3.4 | 4.2 | 27.7 | 47,434 |
| British Columbia.. | 86 | 90.0 | 3.2 | 6.8 | 59,208 | 67.9 | 3.2 | 4.1 | 24.8 | 62,134 |
| Yukon Territory... | 2 | 86.1 | 7.2 | 6.7 | 155 | 55.1 | 1.6 | 5.7 | 37.6 | 166 |
| Northwest Territories. | 2 | 84.0 | 9.3 | 6.7 | 269 | 52.0 | 2.4 | 4.8 | 40.8 | 308 |
| Canada........ | 793 | 87.9 | 4.8 | 7.3 | 611,815 | 64.7 | 3.3 | 4.4 | 27.6 | 636,205 |

[^78]Patient-day cost in general hospitals in 1961 was $\$ 24.32$, an amount 6.9 p.c. higher than in 1960. In such hospitals, per diem cost usually rises with the size of hospital; in hospitals with one to nine beds the patient-day cost was $\$ 19.94$ compared with $\$ 30.09$ in hospitals with 1,000 or more beds.

## 13.-Revenues and Expenditures of Reporting Public Hospitals per Patient-Day (excluding Newborn), 1960 and 1961

| Year and Type of Hospital | Hospitals Reporting | Revenues |  |  |  | Expenditures |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Net Outpatient Earning | Grants and <br> Other <br> Income | Total ${ }^{1}$ | Galaries and <br> Wages |  | Drugs | Other | Total |
|  | No. | \$ | \$ | $\delta$ | \$ | \$ | \$ | \$ | \$ | \$ |
| 1960 |  |  |  |  |  |  |  |  |  |  |
| General.. | 798 | 18.85 | 1.08 | 1.77 | 21.70 | 14.45 | 0.80 | 1.06 | 6.44 | 22.75 |
| 1-1-9 94 beds.... | 62 285 | 16.54 | 0.76 | 2.48 | 19.58 | 12.15 | 0.58 | 1.00 | 6.58 | 20.51 |
| 25-49 " ${ }^{10}$, | 182 | 14.60 | 0.68 0.80 | 1.41 1.82 | 16.24 16.62 | 9.83 10.45 | 0.58 0.59 | 1.92 0.87 | 6.88 5.86 | 17.20 17.47 |
| 50-99 " $\cdots$. | 114 | 15.29 | 0.62 | 1.16 | 17.07 | 11.07 | 0.54 | 0.88 | 5.44 | 17.98 |
| 100-199 " . | 119 | 17.59 | 1.11 | 1.36 | 20.06 | 13.20 | 0.70 | 0.98 | 5.89 | 20.77 |
| 200-299 " $\quad . .$. | 87 | 18.64 | 0.98 | 1.99 | 21.61 | 14.08 | 0.74 | 1.02 | 6.70 | 22.53 |
| 300-499 ${ }_{500}$ " $\quad \cdots$. | 39 | 21.24 | 1.20 | 1.99 | 24.37 | 16.72 | 0.92 | 1.17 | 6.62 | 25.48 |
| $\stackrel{500-999}{ }{ }_{1}$ " 000 ... |  | 20.61 | 1.30 | 2.09 | 24.00 | 16.12 | 0.95 | 1.14 | 7.01 | 25.23 |
| 1,000 or more beds | 6 | 22.71 | 1.28 | 2.67 | 26.66 | 18.54 | 1.05 | 1.29 | 7.75 | 28.64 |
| Allied Special- |  |  |  |  |  |  |  |  |  |  |
| Chronic.......... | 38 | 7.85 | 0.01 | 0.47 | 8.33 | 5.58 | 0.08 | 0.21 | 2.59 | 8.46 |
| Convalescent..... | 7 | 9.56 | 0.02 | 0.86 | 10.44 | 6.58 | 0.15 | 0.23 | 3.78 | 10.74 |
| Maternity......... | 9 | 22.90 | 0.13 | 2.58 | 25.61 | 17.27 | 1.12 | 0.70 | 7.67 | 26.76 |
| Other............. | 13 | 13.11 | 0.86 | 6.22 | 20.19 | 12.92 | 0.40 | 0.51 | 7.57 | 21.39 |
| Mental............. | 63 | 1.63 | -- | 3.32 | 4.95 | 3.24 | 0.03 | 0.14 | 1.51 | 4.94 |
| Tuberculosis. | 52 | 7.52 | -- | 2.62 | 10.14 | 6.69 | 0.17 | 0.18 | 3.37 | 10.41 |

${ }^{1}$ Subject to later adjuatmenta by Provincial Plan.

## 13.-Revenues and Expenditures of Reporting Public Hospitals per Patient-Day (excluding Newborn), 1960 and 1961-concluded

| Year and Type of Hospital | Hospitals Reporting | Revenues |  |  |  | Expenditures |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Net Inpatient Earnings | Net Outpatient Earnings |  | Total ${ }^{1}$ |  |  | Drugs | Other | Total |
|  | No. | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ |
| 1961 |  |  |  |  |  |  |  |  |  |  |
| General. | 793 | 20.55 | 1.12 | 1.69 | 23.36 | 15.74 | 0.80 | 1.07 | 6.71 | 24.32 |
| 1- 9 beds. | 43 | 16.65 | 0.76 | 1.51 | 18.92 | 12.34 | 0.52 | 0.98 | 6.11 | 19.94 |
| 10-24 " | 198 | 15.12 | 0.74 | 1.37 | 17.23 | 10.89 | 0.56 | 0.96 | 6.19 | 18.50 |
| 25-49 " | 192 | 16.14 | 0.84 | 1.16 | 18.14 | 11.57 | 0.58 | 0.90 | 6.00 | 19.02 |
| 50-99 " | 126 | 16.90 | 0.72 | 1.07 | 18.69 | 12.48 | 0.57 | 0.87 | 5.64 | 19.59 |
| 100-199 " . | 118 | 19.01 | 1.07 | 1.24 | 21.32 | 14.35 | 0.73 | 1.02 | 6.03 | 22.13 |
| 200-299 " | 45 | 21.06 | 1.13 | 1.96 | 24.15 | 15.80 | 0.82 | 1.10 | 7.25 | 24.98 |
| 300-499 " | 40 | 21.63 | 1.22 | 1.42 | 24.27 | 16.80 | 0.86 | 1.10 | 6.46 | 25.21 |
| 500-999 " | 25 | 23.15 | 1.34 | 2.38 | 26.82 | 18.22 | 0.95 | 1.20 | 7.52 | 27.89 |
| 1,000 or more beds | 6 | 24.94 | 1.28 | 2.61 | 28.83 | 19.68 | 1.06 | 1.26 | 8.09 | 30.09 |
| Allied Special- |  |  |  |  |  |  |  |  |  |  |
| Chronic.......... | 42 | 9.19 | 0.02 | 0.59 | 9.80 | 6.83 | 0.10 | 0.25 | 3.00 | 10.18 |
| Convalescent..... | 10 | 13.37 | 0.76 | 1.75 | 15.88 | 10.11 | 0.28 | 0.32 | 5.25 | 15.96 |
| Maternity......... | 14 | 24.74 | 0.32 | 1.72 | 26.78 | 17.68 | 1.11 | 0.70 | 7.58 | 27.08 |
| Other............ | 9 | 18.40 | 1.33 | 7.66 | 27.39 | 17.60 | 0.48 | 0.71 | 10.94 | 29.72 |
| Mental............. | 72 | 1.27 | -- | 4.94 | 6.21 | 4.23 | 0.04 | 0.16 | 1.78 | 6.21 |
| Tuberculosis....... | 47 | 8.50 | 0.06 | 2.90 | 11.45 | 7.74 | 0.16 | 0.22 | 4.07 | 12.20 |

${ }^{1}$ Subject to later adjustments by Provincial Plan.

## 14.-Revenues and Expenditures of Reporting Public Hospitals per Patient-Day (excluding Newborn), by Province, 1961

| Province and Type of Hospital | Hospitals Reporting | Revenues |  |  |  | Expenditures |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Net Inpatient Earnings | Net Outpatient Earnings | Grants and Other Income | Total ${ }^{1}$ | Gross <br> Salaries and Wages | Medical and Surgical Supplies | Drugs | Other | Total |
|  | No. | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ |
| NewfoundlandGeneral | 27 | 15.72 | 1.38 | 1.84 | 18.94 | 10.93 | 0.68 | 1.18 | 7.13 | 19.92 |
| Mental........... | 1 | 0.31 | 1.38 | 7.88 | 8.19 | 4.59 | 0.30 | 0.05 | 3.24 | 8.19 |
| Tuberculosis. | 2 | 0.27 | - | 13.31 | 13.59 | 8.60 | 0.49 | 0.25 | 4.25 | 13.59 |
| Prince Edward Island- |  |  |  |  |  |  |  |  |  |  |
| General....... | 8 | 13.48 | 1.10 | 3.08 | 17.66 | 10.31 | 0.62 | 0.83 |  |  |
| Mental....... | 1 | 0.64 | $\overline{0.38}$ | 4.26 0.65 | 4.90 12.38 | 2.63 6.43 | 0.03 0.34 | 0.22 0.21 | 2.03 5.40 | 4.90 12.38 |
| Tuberculosis. | 1 | 11.33 | 0.38 | 0.65 | 12.38 | 6.43 | 0.34 | 0.21 | 5.40 | 12.38 |
| Nova ScotiaGeneral | 44 | 20.10 | 1.58 | 1.72 | 23.40 | 14.10 | 0.82 | 1.00 | 7.69 | 23.61 |
| $\underset{\text { Allied Special- }}{\text { Convalescent. }}$ | 2 | 15.95 | 4.60 | 3.48 | 24.03 | 14.25 | 0.64 | 0.45 | 8.86 | 24.19 |
| Maternity..... | 1 | 22.80 | 0.23 | 1.74 | 24.77 | 15.00 | 1.07 | 0.69 | 7.64 | 24.39 |
| Mental........... | 9 | 2.11 | - | 3.62 | 5.73 | 3.44 | 0.01 | 0.13 | 2.00 | 5.58 |
| Tuberculosis..... | 3 | 7.69 | 0.04 | 10.10 | 17.82 | 12.14 | 0.14 | 0.31 | 5.23 | 17.82 |
| New BrunswickGeneral. | 33 | 18.78 | 0.86 | 3.61 | 23.25 | 13.73 | 0.81 | 1.00 | 8.43 | 23.97 |
| Allied SpecialConvalescent. . | 2 | 17.10 |  | 0.50 | 17.97 | 10.76 | 0.86 | 0.86 | 5.72 | 18.21 |
| Maternity...... | 1 | 24.12 | - | 8.03 | 32.15 | 15.50 | 0.84 | 0.21 | 19.07 | 35.63 |
| Other........... | 1 | 13.71 | 2.57 | 0.52 | 16.80 | . | .. | .. | .. | 17.38 |

[^79]
## 14.-Revenues and Expenditures of Reporting Public Hospitals per Patient-Day (excluding Newborn), by Province, 1961-concluded



[^80]Diagnoses of Patients in Institutions for Psychiatric Disorders and for Tuber-culosis.-Tables 15 and 16 summarize the most recent data available on diagnosis according to sex and age group of in-patients in psychiatric institutions and tuberculosis hospitals, including those in psychiatric wards and tuberculosis wards of other hospitals.

Of the total of 76,486 psychiatric patients reported at Dec. $31,1961,35$ p.c. suffered from schizophrenia, the most frequent form of psychosis (insanity); 26 p.c. suffered from other forms of psychosis and 29 p.c. were mentally deficient. In most diagnostic classes, males outnumbered females; exceptions were certain psychoses, neuroses and drug addiction.

## 15.-Diagnoses of In-patients on the Books of Psychiatric Institutions, by Age Group and Sex, Dec. 31, 1961

Nore.-Data from 111 institutions, including psychiatric wards of general hospitals; at Dec. 31, 1961, 10 p.c. of the patients on the books were on probation pending official release.

| Diagnoses | Age Group |  |  |  |  |  | All Ages ${ }^{1}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0-9 | 10-14 | 15-19 | 20-39 | 40-59 | $60+$ | Males | Females | Total |
| All Psychoses (excl. alcoholic) Functional ${ }^{2}$ Of old age. Other | Numbers |  |  |  |  |  |  |  |  |
|  | 513615 | 91 | 526 10,062 |  | 18,090 | 16,595 | 23,840 | 21,632 | 45,472 |
|  |  | 68 | 489 | 8,774 | 14,977 | 9,885 | 18,036 | 16,188 | S4,224 |
|  |  | 08 | 87 | 1,283 | 102 | 4,7052,005 | 2,1803,684 | 2,635 | 4,8156,453 |
|  |  | 23 |  |  | 3,011 |  |  | 2,809 |  |
| Neurose ${ }^{3}$. | 3 | 10 | 77 | 774366141 | 863 | 470242 | 761357128 | $\begin{array}{r}1,438 \\ 675 \\ 155 \\ \hline\end{array}$ | $\begin{gathered} 2,199 \\ 1,038 \\ 888 \end{gathered}$ |
| Depression. | - | - | 35 |  | 388 |  |  |  |  |
| Anxiety.... | - | 2 | 9 |  | 89 | 41 |  |  |  |
| All Other ${ }^{3}$ <br> Mental deficiency Alcoholism (incl. psychotics) Epilepsy. <br> Totals. | $\begin{array}{r} 2,736 \\ 2,520 \\ \hline 140 \end{array}$ | $\begin{gathered} 3,508 \\ 9,178 \\ \hline 187 \end{gathered}$ | $\begin{array}{r} 3,923 \\ 3,397 \\ 28 \\ 223 \end{array}$ | $\begin{array}{r} 9,596 \\ 7,640 \\ 297 \\ 774 \end{array}$ | 6,266 | 2,7651,382689150 | 16,26412,5541,3951,018 |  |  |
|  |  |  |  |  | 4,189 |  |  | 9,971 | $\begin{gathered} 28,815 \\ 28,585 \\ 1,768 \\ 1,948 \end{gathered}$ |
|  |  |  |  |  | 934 |  |  | ${ }^{367}$ |  |
|  |  |  |  |  | 467 |  |  | 989 |  |
|  | 2,790 | 3,609 | 4,526 20,432 |  | 25,219 | 19,830 | 40,865 | 35,621 | 76,486 |
|  | Rates per 100,000 Population |  |  |  |  |  |  |  |  |
| All Psychoses (excl. alcoholic). Functional ${ }^{2}$ Of old age. | - ${ }^{1}$ | 5-4-1 | $\begin{aligned} & 36 \\ & 30 \end{aligned}$ | $\begin{aligned} & 202 \\ & 176 \end{aligned}$ | $\begin{array}{r} 483 \\ 400 \\ 8 \\ 80 \end{array}$ | 831495296100 | 256 | 237 | 2471882635 |
|  |  |  |  |  |  |  | 194 | 178 |  |
|  |  |  |  | -26 |  |  | 28 99 | 29 31 |  |
| Neuroses ${ }^{3}$ | 二 |  | 5 <br> $\mathbf{2}$ <br> 1 | $\begin{array}{r} 16 \\ 7 \\ 8 \end{array}$ | $\begin{array}{r} 23 \\ 10 \\ 2 \end{array}$ | 24122 | 841 | 1672 | 12 |
| Depression....................... |  |  |  |  |  |  |  |  |  |
| Anxiety.......................... |  |  |  |  |  |  |  |  |  |
| All Other ${ }^{3}$ | $\begin{array}{r} 62 \\ -\quad \\ -\quad \end{array}$ | 187169-10 | 271295 | 1921536 | 16711295 | 1396997 | 175 | 138 | 1561811011 |
| Mental deficiency............... |  |  |  |  |  |  |  |  |  |
| Alcoholism (incl. psychotics)... Epilepsy.................... |  |  | ${ }_{15}$ |  | 25 12 | ${ }^{27}$ | 15 11 | $10^{4}$ |  |
| Totals. | 64 | 192 | 313 | 410 | 674 | 993 | 439 | 391 | 415 |

${ }^{1}$ Includes ages not stated. cholia, paranoia and paranoid states.
${ }^{2}$ Comprises schizophrenia, manic depressive psychosis, involutional melan${ }^{3}$ Includes other diagnoses not specified below.

Of the 5,387 patients with respiratory tuberculosis on the books of tuberculosis institutions at the end of 1961,63 p.c. were males. Males outnumbered females in all age groups except for the ages from 0 to 19 years. The peak frequency for men $(1,116)$ occurred in the $40-59$ age group, and for women (688) in the 20-39 age group. The male rate rose steadily up to 60 years while the female rate, following somewhat the same pattern, showed a decline in age group 40-59. The over- 40 male rates were much higher than those for the younger male age groups.

16．－Diagnoses of Patients on the Books of Reporting Tuberculosis Hospitals，by Age Group and Sex，as at Dec．31， 1961
Nore．－Figures include patients in 66 tuberculosis hospitals and patients in tuberculosis units in general hospitals but exclude tubercular patients in mental hospitals．

| Diagnosis | Age Group |  |  |  |  | Total ${ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0－14 | 15－19 | 20－39 | 40－59 | $60+$ |  |
|  | Numbers |  |  |  |  |  |
| Respiratory tuberculosis $\qquad$ |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| With occupational disease of lung．．．．．．．．．．．．．．．．．．．．．．${ }_{\text {F }}$ ． | $\begin{array}{r}346 \\ 1 \\ \hline\end{array}$ | 二 | － | － | 1 1 | 1462 |
| Minimal pulmonary ．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． $\mathrm{M}_{\text {．}}$ | 2854 | 34 | 146 | 144 | 107 |  |
| M |  | 46 | 176 | 94 | 49 | 420 |
| Moderately advanced pulmonary．．．．．．．．．．．．．．．．．．．．．． $\mathrm{M}_{\text {．}}$ ． | 1822 | 51 | 307 | 425 | 380 | 1，183 |
| Far advanced pulmonary |  | 59 | 281 | 191 | 158 |  |
| Far advanced pulmonary．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | 9 | 24 20 | 205 | 185 | 140 | 1，288 |
| Other and unspecified pulmonary．．．．．．．．．．．．．．．．．．．．．．${ }_{\text {M }}$ ． | 10 | 5 | 6 | 18 | 12 | 3926 |
| ， |  | 7 | 24 | 1 | 15 |  |
| Pleurisy with or without effusion．．．．．．．．．．．．．．．．．．．．．．M． | 14 |  |  | 19 |  | 7939 |
| Primary infection ${ }^{\text {F．}}$ | ${ }^{8}$ | 74 | 16 | 4 | 41 |  |
| Primary infection．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．${ }_{\text {M }}^{\text {F }}$ ． | 251 |  |  |  |  |  |
| Other．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | 219 7 | 1 | 1 | － | －1 | 229 10 |
| Tuberculosis，other forms．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | $\begin{aligned} & 18 \\ & 48 \\ & 56 \end{aligned}$ | 1 | ${ }_{2}^{1}$ | 二 | 1 | 102424 |
|  |  | $\begin{aligned} & 19 \\ & 24 \end{aligned}$ | 8060 | 5839 | 3922 |  |
|  |  |  |  |  |  | 202 |
|  |  | Rates per 100，000 Population |  |  |  |  |
| Respiratory tuberculosis．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． M ． | 10.5 | 17.119.9 | 31.427.6 | 58.8 | 103.7 | 36.4 |
| With occupational disease of lung． |  |  |  | 1.6 | 3.23.2 | 0．7 |
|  | 11.3 | 10 | $\stackrel{-}{-}$ |  |  |  |
| Minimal pulmonary．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．${ }_{\text {M．}}^{\text {．}}$ | 0.9 | 4.6 |  | 7.6 | 11.1 |  |
| ， | 1.8 | 6.4 | 5.8 7.1 | 5.6 | 4.7 | 4.6 |
| Moderately advanced pulmonary．．．．．．．．．．．．．．．．．．．．．．M． | 0.6 | 6.9 | 12.2 | 22.4 | 39.3 | 12.77.8 |
|  | 0.7 | 8.2 | 11.3 | 10.4 | 15.3 |  |
| Far advanced pulmonary．．．．．．．．．．．．．．．．．．．．．．．．．．．．．M． | 0.2 | 3.3 | 12.1 | 25.9 | 47.1 | 13.9 |
|  | 0.3 | 2.8 0.7 | 8.2 | 10.0 | 1.2 | 0.4 |
| Other and unspecified pulmonary．．．．．．．．．．．．．．．．．．．．．${ }_{\text {F }}$ ． |  | 0.7 | 0.2 | 0.3 |  |  |
| Pleurisy with or without effusion．．．．．．．．．．．．．．．．．．．．．．．． | 0.4 | 0.9 | 1.00.6 | 1.0 | 0.1 | 0.30.9 |
| Pleurisy with or without effusion．．．．．．．．．．．．．．．．．．．．．．．．．． |  |  |  |  | 1.6 |  |
| Primary infection．．．．．．．．．．．．．．．．．．．．．．．．．．．M． | 7.9 | 1.0 | － | 0.2 | 0.4 0.1 | 2.8 |
| Other | 7.2 | 1.1 | 0.1 | 二 | 0.1 | 2.50.1 |
| Other．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． $\mathrm{M}_{\mathrm{F}}$ ． |  |  |  |  |  |  |
| Tuberculosis，other forms．．．．．．．．．．．．．．．．．．．．．．．．．．．．．${ }_{\text {M．}}^{\text {M }}$ ． | $\begin{aligned} & 0.6 \\ & 1.5 \end{aligned}$ | 0.12.63.6 | 0.13.2 | － | $\stackrel{0.1}{-}$ | 0.22.6 |
| Tuberculosis，other forms．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． |  |  |  | 3.1 | 4.0 |  |
| F． | 1.8 | 3.3 | 2.4 | 2.1 | 2.1 | 2.2 |

${ }^{1}$ Includes ages not known．

## Subsection 2．－Notifiable Diseases and Other Health Statistics＊

In addition to the administrative，or non－morbidity，type of hospital statistics dealt with on pp．276－287，health statistics collected nationally include series on notifiable diseases and illness among federal civil servants；these are dealt with briefly below．

Notifiable Diseases．－In terms of number of new cases，the major infectious diseases reportable on a national basis were，in 1961，the venereal diseases，scarlet fever and strep－ tococcal sore throat，and infectious and serum hepatitis．

Higher incidence of the reportable venereal diseases（combined）occurred in the Yukon and the Northwest Territories and in all provinces except Newfoundland，Nova Scotia

[^81]and New Brunswick. In Newfoundland the level of venereal infections was the lowest since that province entered Confederation-283 cases, or a case-rate of 61.8 per 100,000 population. The largest number of cases $(3,880)$ occurred in British Columbia, but the rate per 100,000 population in that province (238.2) was lower than those of the Yukon, the Northwest Territories and Manitoba. Among the reportable types of venereal disease, gonorrhoea accounted for 87.7 p.c. of total cases nationally, and for 94.5 p.c. of cases in British Columbia.

Although the incidence of scarlet fever and streptococcal sore throat continued at a high level relative to other notifiable diseases, the 12,765 cases reported in 1961 represented a 40.0 -p.c. decline from the 1960 total. The decrease in cases was common to all provinces and most marked, in percentage terms, in Quebec. Provincially, the highest case-rate was Prince Edward Island's 1,284.8, which was more than 17 times the national average of 70.0 cases per 100,000 population.

The number of cases of infectious and serum hepatitis increased from 6,314 in 1960 to 12,381 in 1961. Higher incidence in comparison with the previous year was recorded in every four-week period of 1961, and all provinces were affected to a greater or lesser degree.

From a 1960 record high of 3,279 cases, the incidence of dysentery declined in 1961 by 6.9 p.c. to 3,053 cases. The latter were fairly evenly divided between bacillary dysentery and the miscellaneous classification, which covers such conditions as dysenteric diarrhoea and haemorrhagic dysentery. Only 12 cases of amoebic dysentery, a fairly uncommon form, were reported.

A nation-wide decline in the incidence of paralytic poliomyelitis was also noted in 1961. The numbers of cases (189) and the rate per 100,000 population (1.0) approximated the previous low levels established in 1957.

## 17.-Reported Cases of Selected Notifiable Diseases and Rates per $\mathbf{1 0 0 , 0 0 0}$ Population, 1958-61

| International List No. | Disease | Cases |  |  |  | Rates per 100,000 Population |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 19581 | $1959{ }^{1}$ | $1960{ }^{2}$ | $1961{ }^{2}$ | 1958 ${ }^{1}$ | 19591 | $1960{ }^{2}$ | $1961{ }^{2}$ |
|  |  | No. | No. | No. | No. |  |  |  |  |
| 044 | Brucellosis (undulant fever)... | 113 | 120 | 142 | 109 | 0.7 | 0.8 | 0.9 | 0.6 |
| 764 | Diarrhoea of the newborn, epidemic. | 3 | 92 | 72 | 81 | 3 | 0.5 | 0.7 | 0.7 |
| 055 | Diphtheria...................... | 66 | 38 | 55 | 93 | 0.4 | 0.2 | 0.3 | 0.5 |
| 045, 046, 048 | Dysentery ${ }^{4}$ | 1,562 | 1,416 | 3,279 | 3,053 | 9.2 | 8.1 | 18.4 | 16.7 |
| 046 | Amoebic. |  |  | , 4 | 12 |  |  | 5 | 0.1 |
| 045 | Bacillary. | 1,553 | 1,238 | 2,640 | 1,479 | 9.0 | 7.1 | 14.8 | 8.1 |
| 082.0 | Encephalitis, infectious. | 3 | 15 | 9 | 1 |  | 0.1 | 0.1 |  |
| $\begin{gathered} 049.0, \\ 042.1, \\ 049.2 \end{gathered}$ | Food poisoning. | ${ }^{3}$ | 847 | 1,216 | 1,288 | 3 | 4.9 | 10.4 | 10.7 |
| 092, N998.5 | Hepatitis, infectious (including serum hepatitis). | 4,515 | 4,728 | 6,314 | 12,381 | 26.5 | 27.1 | 35.4 | 67.9 3.5 |
| 080.2, 082.1 | Meningitis, viral or aseptic.... |  | 896 | - 694 | 411 |  | 5.1 | 6.0 | 3.5 |
|  | Meningococcal infections...... | 283 | 201 | 158 | 120 | 1.7 | 1.2 | 0.9 | 0.7 |
| 766 | Pemphigus neonatorum (impetigo of the newborn) | 3 | 5 | 7 | 13 | 3 | 5 | 0.1 | 0.1 |
| 056 | Pertussis (whooping cough)... | 6,932 | 7,259 | 5,992 | 5,478 | 40.7 | 41.6 | 33.6 | 30.0 |
| 080.0, 080.1 | Poliomyelitis, paralytic....... | 249 | 1,886 | 909 | 189 | 1.5 | 10.8 | 5.1 | 1.0 |
| 050, 051 | Scarlet fever and streptococcal sore throat. | 11,118 | 23,413 | 21,251 | 12,765 | 65.3 | 134.2 | 119.3 | 70.0 |
| 040, 041 | Typhoid and paratyphoid fever. |  |  | 335 | 266 | 1.8 | 3.1 | 1.9 | 1.5 |
| 020-039 | Venereal diseases ${ }^{\text {a }}$. $\ldots$ | 17,086 | 16,978 | 17,834 | 18,777 | 100.2 | 97.3 | 100.1 | 103.0 |
| 030-035 | Gonorrhoea. | 15,040 | 14,826 | 15,661 | 16,463 | 88.2 | 85.0 | 87.9 | 90.8 |
| 020-029 | Syphilis.... | 2,038 | 2,144 | 2,168 | 2,311 | 12.0 | 12.3 | 12.2 | 12.7 |

[^82]
## 18.-Reported Cases of Selected Notifiable Diseases and Rates per $\mathbf{1 0 0 , 0 0 0}$ Population, by Province, 1961



[^83]Illness in the Federal Civil Service.-A study of the incidence and duration of illness among federal civil servants is made annually from data supplied by medical certificates, which are required for all absences of more than three days at one time and for absence of any duration after seven days of casual leave have been taken. During the calendar year 1961, of an estimated 145,300 civil servants covered by Civil Service Leave Regulations,

48,263 reported ill by medical certificate. The number of new illnesses, as certified by medical certificate, was 74,542 , somewhat higher than the 70,243 reported for 1960 . Similarly, the number of days of completed illnesses increased to $1,034,593$ in 1961 from the 990,804 reported for 1960. Other relevant statistics for 1961 indicate that, on the average, 7.5 working days were lost through illness by each employee, including 4.9 days of certified and 2.6 days of casual sick leave.

Several rates related to sickness absenteeism were calculated from the 1961 survey, based on the number of certified illnesses that occurred at some time during the year but not necessarily completed during the same year. These illnesses totalled 76,505 . The severity rate or average number of calendar days per illness was 13.5 and the average number of working days was 9.3 . The frequency rate or the average number of illnesses per 100 employees was 52.7. In addition, for each working day during the year, about two of every 100 civil servants were absent on certified sick leave.

## 19.-Rates per 1,000 Employees of Illnesses and Days of Illness for Federal Civil Servants, by Cause, 1961

(Certified sick leave only)

| InternationalListNumber | Cause | Rates per 1,00C Employees |  |
| :---: | :---: | :---: | :---: |
|  |  | Illnesses | Days of Illness |
|  |  | No. | No. |
| 001-138 | Infective and parasitic diseases. | 13.5 | 263.0 |
| 140-239 | Neoplasms .............. | 8.6 | 295.7 |
| 240-289 | Allergic, endocrine system, metabolic, and nutritional diseases. | 9.3 | 149.9 |
| 290-299 | Diseases of the blood and blood-forming organs......................... | 1.7 | 35.5 |
| 300-326 | Mental, psychoneurotic, and personality disorders. | 16.8 | 489.4 |
| 330-398 | Diseases of the nervous system and sense organs... | 20.6 | 324.8 |
| 400-468 | Diseases of the circulatory system.. | 28.6 | 932.4 |
| $470-527$ $530-587$ | Diseases of the respiratory system ... | 213.8 74.9 | $1,580.2$ $1,026.1$ |
| $530-587$ $590-637$ | Diseases of the digestive system...... Diseases of the genito-urinary system. | 74.9 24.9 | 1, 392.7 |
| 640-689 | Deliveries and complications of pregnancy, childbirth, and the puerperium | 1.7 | 23.7 |
| 690-716 | Diseases of the skin and cellular tissue............. | 14.6 | 163.1 |
| 720-749 | Diseases of the bones and organs of movement. | 32.5 | 524.6 |
| 750-759 | Congenital malformations .i........... | 0.5 | 18.6 |
| $780-795$ $\mathrm{~N} 800-\mathrm{N} 999$ | Symptoms, senility, and ill-defined conditions. | 24.4 37.4 | 281.6 584.7 |
|  | Totals, All Illnesses. | 526.5 | 7,096.1 |

## PART II.-PUBLIC WELFARE AND SOCIAL SECURITY

Responsibility for social welfare is shared by all levels of government. Comprehensive income-maintenance measures such as old age security and family allowances, and programs such as unemployment insurance and the National Employment Service where nation-wide co-ordination is required, are administered federally. Substantial federal aid is given to the provinces in meeting the costs of public assistance. The Federal Government 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; the Departments of Veterans Affairs, Citizenship and Immigration, and Northern Affairs and National Resources also operate programs for specific groups. The Unemployment Insurance Commission is responsible for the operation of unemployment insurance and the National Employment Service.

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.

## Section 1.-Federal Government Programs

## Subsection 1.-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 aged 10 or over but under 16 years. If the allowances are not spent 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. A Regional Director for the Yukon and Northwest Territories is located at Ottawa.

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 and for a maximum period of one year, is not payable for a child eligible for family allowances.
1.-Family Allowances Statistics, by Province, Year Ended Mar. 31, 1962 with Totals for 1958-62
Nors.-Provincial figures for each year from the inception of the Act to 1961 are given in the corresponding table of previous Year Books, beginning with the 1947 edition.

| Province or Territory | Families Receiving Allowance in March | Children for Whom Allowance Paid in March | Average Number of Children per Family in March | Average Allowance ${ }^{1}$ |  | Net <br> Total <br> Allowances <br> Paid during <br> Fiscal Year |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Per Family | $\stackrel{\mathrm{Per}}{\mathrm{Cbil}}$ |  |
|  | No. | No. | No. | \$ | \$ | \$ |
| Newfoundland............... | 65,705 | 204,855 | 3.12 | 20.87 | 6.69 | 16,336,849 |
| Prince Edward Island......... | 14,190 | 39,931 | 2.81 | 18.98 | 6.74 | 3,204,881 |
| Nova Scotia.... | 105,868 | 271,036 | 2.56 | 17.14 | 6.70 | 21,623,655 |
| New Brunswick | 83,014 | 239,340 | 2.88 | 19.41 | 6.73 | 19,222,615 |
| Quebec.. | 739,126 | 1,976,677 | 2.67 | 17.96 | 6.71 | 157,712,911 |
| Ontario... | 929,461 | 2,133,116 | 2.29 | 15.32 | 6.68 | 168,442,100 |
| Manitoba | 132,338 | 315,238 | 2.38 | 15.94 | 6.69 | 25,065,334 |
| Saskatchewan | 131,975 | 329,681 | 2.50 | 16.70 | 6.69 | 26,313,109 |
| Alberta....................... | 204,698 | 496,712 | 2.43 | 16.13 | 6.65 | 38,928,125 |
| British Columbia.............. | 236,646 | 538,934 | 2.28 | 15.24 | 6.69 | 42,687,279 |
| tories....................... | 6,296 | 16,767 | 2.66 | 17.04 | 6.40 | 1,244,335 |
| Canada. . . . . . . . . . . 1962 | 2,649,317 | 6,562,287 | 2.48 | 16.58 | 6.69 | 520,781,193 |
| 1961 | 2,602,930 | 6,397,134 | 2.46 | 16.42 | 6.68 | 506,191,647 |
| 1960 | 2,551,264 | 6,219,989 | 2.44 | 16.27 | 6.67 | 491,214,359 |
| 1959 | 2,492,581 | 6,035,256 | 2.42 | 16.15 | 6.67 | 474,787,068 |
| 1958 | 2,406,734 | 5,796,380 | 2.41 | 16.08 | 6.68 | 437,886,560 |

[^84]
## Subsection 2.-Old Age Security

The Old Age Security Act of 1951, as amended, provides a universal pension of $\$ 65$ a month payable by the Federal Government to all persons aged 70 or over, subject to a residence qualification. To qualify for pension a person must have resided in Canada for ten years immediately preceding its commencement or, if absent during that period, must have been actually present in Canada prior to it for double any period of absence and must have resided in Canada at least one year immediately preceding commencement of pension. Payment of pension may be continued for any period of residence outside Canada if the pensioner has resided in Canada for at least 25 years after attaining the age of 21 or, if he has not, it may be continued for six consecutive months exclusive of the month of departure from Canada. The program is administered by the Department of National Health and Welfare through regional offices located in each provincial capital.

The pension is financed on the pay-as-you-go method through a 3-p.c. sales tax, a 3p.c. tax on corporation income and, subject to a limit of $\$ 90$ a year, a 3-p.c. tax on taxable personal income. Yields from these taxes are paid into the Old Age Security Fund; if they are insufficient to meet the pension payments, temporary loans or grants are made from the Consolidated Revenue Fund.

## 2.-Operations of the Old Age Security Fund, Years Ended Mar. 31, 1958-62

| Item | 1958 | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | \$ | \$ |
| Revenue- |  |  |  |  |  |
| Sales tax.......................... | 175,792,442 | 173,622,697 | 270,000,055 | 270,231,478 | 284,879,239 |
| Corporation income tax. | 60,664,000 | 55,328,000 | 91,336,000 | 103,500,000 | 100,125,000 |
| Individual income tax. | 135,001,000 | 146,350,000 | 185,550,000 | 229,400, 000 | 258,950,000 |
| Grant from Consolidated Revenue Fund. | 102,401,662 | 183, 979, 162 | - | - | - |
| Loan from Consolidated Revenue Fund. | - | - | 28,000,991 | - | - |
| Totals, Revenue............... | 473,859, 104 | 559, 279, 858 | 574,887, 046 | 603,131,478 | 643, 954, 239 |
| Expenditure- |  |  |  |  |  |
| Benefit payments.................. | 473, 859,104 | 559, 279, 858 | 574, 887, 046 | 592,413,283 | 625,107,804 |
| Excess of Revenue over Benefit Payments. | - | - | - | 10,718, $195{ }^{1}$ | 18,846, 435 ${ }^{2}$ |

[^85]
## 3.-Old Age Security Statistics, by Province, Year Ended Mar. 31, 1962 with Totals for 1958-62

Note.-Provincial figures for each year from the inception of the Act to 1961 are given in the corresponding table of previous Year Books beginning with the 1952-53 edition.

| Province | Pensioners in March | Net <br> Pensions Paid during Fiscal Year | Province or Territory | Pensioners in March | Net Pensions Paid during Fiscal Year |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | S |  | No. | \$ |
| Newfoundland. | 17,801 | 11,947,626 | British Columbia.......... | 117,815 | 79,622,315 |
| Prince Edward Island. | 7,603 | 5,151, 999 | Yukon and Northwest |  |  |
| Nova Scotia.... | 42,572 | 28,895,584 | Territories. | 656 | 439,865 |
| New Brunswick. | 31,316 | 21,291,111 |  |  |  |
| Quebec. | 196,827 335,339 | $\begin{array}{r}131,711,372 \\ 226 \\ \hline\end{array}$ | Canada........... 1962 | 927,590 | 625,107,804 |
| Ontario.. | 1355,339 56,567 | $226,065,413$ $38,085,361$ | 1961 | 904,906 | 592,413,283 |
| Saskatchewan. | 58,436 | 39,621,029 | 1959 | 854,234 | 559,279,858 |
| Alberta. | 62,658 | 42,276,129 | 1958 | 827,560 | 473,859,103 |

## Subsection 3.-Other Federal Government Programs

Unemployment Insurance and National Employment Service.-In 1940, by an amendment to the British North America Act, the Federal Government was given jurisdiction in the field of unemployment insurance and the Unemployment Insurance Act was passed establishing a national system of unemployment insurance which is outlined in Chapter XVI.

The National Employment Service is operated in conjunction with the unemployment insurance scheme. Statistics of positions offered and placements made are given in Chapter XVI.

Prairie Farm Assistance.-The Prairie Farm Assistance Act is administered by the Department of Agriculture; a description of the legislation is given in Chapter IX.

Welfare Services for Indians and Eskimos.-Indians and Eskimos benefit as other Canadians under the federal income maintenance programs, but welfare services are administered by the Department of Citizenship and Immigration and the Department of Northern Affairs and National Resources, respectively, with some provincial participation. This topic is covered in the Population Chapter (pp. 189-191).

## Section 2.-Federal-Provincial Programs

## Subsection 1.-Old Age Assistance

The Old Age Assistance Act of 1951, as amended, provides for federal reimbursement to the provinces for assistance to persons aged 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. On reaching age 70 a pensioner is transferred to old age security. The federal contribution may not exceed 50 p.c. of $\$ 65$ 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. All provinces use a maximum payment of $\$ 65 \mathrm{a}$ month and the income limits set out below.

For an unmarried person, total income allowed, including assistance, may not exceed $\$ 1,140$ a year. For a married couple it may not exceed $\$ 1.980$ a year or, when the spouse is
blind within the meaning of the Blind Persons Act, $\$ 2,340$ 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. Where the amount of aid is determined through an individual assessment of need, which takes the recipient's requirements and resources into consideration, the Federal Government may share in it under the Unemployment Assistance Act.

## 4.-Old Age Assistance Statistics, by Province, Year Ended Mar. 31, 1962 with Totals for 1958-62

Nore.-Provincial figures for each year from the inception of the Act to 1961 are given in the corresponding table of previous Year Books, beginning with the 1952-53 edition.

| Province or Territory | Recipients in Month of March | Average Amount of Monthly Assistance | P.C. of <br> Recipients to Population Age 65-69 | Federal Government Contribution during Year |
| :---: | :---: | :---: | :---: | :---: |
|  | No. | \$ |  | \$ |
| Newfoundland | 5,184 | $52.4{ }^{1}$ | 52.90 | 1,672,510 |
| Prince Edward Island | 897 | $49.07^{2}$ | 24.92 | 248,608 |
| Nova Scotia. | 5,248 | $51.76{ }^{2}$ | 24.64 | 1,569,348 |
| New Brunswick | 5,421 | $62.42^{2}$ | 33.46 | 1,760,484 |
| Quebec. | 34,615 | $50.84{ }^{2}$ | 28.94 | 10,896,302 |
| Ontario.. | 22,868 | $58.24{ }^{2}$ | 12.54 | 6,903,031 |
| Manitoba. | 5,082 | $62.11^{2}$ | 18.09 | 1,652,229 |
| Saskatchewan. | 5,760 | $50.47^{2}$ | 20.79 | 1,761,661 |
| Alberta | 6,494 | $50.08{ }^{2}$ | 20.23 | 2,000,956 |
| British Columbia | 7,189 | $51.64{ }^{1}$ | 14.32 | 2,283,927 |
| Yukon Territory. | 46 | $54.39^{2}$ | 23.00 | 15,507 |
| Northwest Territories. | 140 | $53.83{ }^{3}$ | 46.67 | 46,021 |
| Canada.................................. 1962 | 98,944 | 53.874 | 20.14 | 30,810,585 |
| 1961 | 100,184 | 50.56 | 20.57 | 30,657,396 |
| 1960 | 98,773 | 50.74 | 20.57 | 30,349,393 |
| 1959 | 97,836 | 50.97 | 20.64 | 30,207,284 |
| 1958 | 92,484 | 52.19 | 19.78 | 24,961,383 |

[^86]
## Subsection 2.-Allowances for Blind Persons

The Blind Persons Act of 1951, as amended, provides for federal reimbursement to the provinces for allowances to blind persons aged 18 or over who are in need and who have resided in Canada for at least ten years. The federal contribution may not exceed 75 p.c. of $\$ 65$ 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. All provinces use a maximum payment of $\$ 65$ a month and the income limits set out below.

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. For an unmarried person, total income including the allowance may not exceed $\$ 1,380$ a year; for a person with no spouse but with one or more dependent children, $\$ 1,860$; for a married couple, $\$ 2,340$. When the spouse is also blind, income of the couple may not exceed $\$ 2,460$. 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. Where the amount of aid is determined through an individual assessment of need, which takes the recipient's requirements and resources into consideration, the Federal Government may share in it under the Unemployment Assistance Act.
5.-Statistics of Allowances for the Blind, by Province, Year Ended Mar. 31, 1962 with Totals for 1958-62
Nore.-Provincial figures for each year from the inception of the Act to 1961 are given in the corresponding table of previous Year Books beginning with the 1952-53 edition.

| Province or Territory | Recipients in Month of March | Average <br> Amount of Monthly Allowance | P.C. of Recipients to <br> Population Age 20-69 | Federal Government Contribution during Year |
| :---: | :---: | :---: | :---: | :---: |
|  | No. | \$ |  | 5 |
| Newfoundland. | 429 | $54.40{ }^{1}$ | 0.204 | 208,816 |
| Prince Edward Island | 80 | 63.132 | 0.157 | 40,168 |
| Nova Scotia. | 771 | $63.74{ }^{2}$ | 0.205 | 386,325 |
| New Brunswick | 697 | $64.24^{2}$ | 0.241 | 349,237 |
| Quebec. | 2,901 | 53.592 | 0.104 | 1,412,002 |
| Ontario. | 1,846 | $57.94{ }^{2}$ | 0.053 | 836,687 |
| Manitoba. | 378 | $62.93{ }^{2}$ | 0.076 | 188,335 |
| Saskatchewan. | 406 | 53.032 | 0.085 | 193,308 |
| Alberta...... | 454 | $53.17{ }^{2}$ | 0.063 | 222,545 |
| British Columbia | 563 | 53.471 | 0.062 | 270, 365 |
| Yukon Territory. | 3 | $55.00^{2}$ | 0.036 | 1,485 |
| Northwest Territories. | 45 | $52.11^{3}$ | 0.372 | 20,580 |
| Canada...................................... . . 1962 | 8,573 | 56.784 | 0.087 | 4,129,852 |
| 1961 | 8,642 | 52.97 | 0.089 | 4,161,833 |
| 1960 | 8,671 | 53.05 | 0.090 | 4,197,087 |
| 1959 | 8,747 | 53.15 | 0.092 | 4,235,131 |
| 1958 | 8,400 | 54.02 | 0.090 | 3,575,724 |

${ }^{1}$ The increase in the maximum rate of allowance from $\$ 55$ to $\$ 65$ a month was effective in these provinces from Apr. 1, 1962. 2 The effective date for the increase from $\$ 55$ to $\$ 65$ a month in the maximum rate of allowance was Feb. 1, 1962 in these jurisdictions but not all of them had made the adjustments by Mar. 31, 1962.
${ }^{3}$ The effective date of the increase from $\$ 55$ to $\$ 65$ a month in the maximum rate of allowance was July 1,1962 . . The average monthly allowance was $\$ 62.65$ for June 1962, the first month for which an average based on the maximum of $\$ 65$ a month was computed.

## Subsection 3.-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 aged 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. To qualify for an allowance a person must meet the definition of permanent and total disability set out in the Regulations to the Act which requires that a person must be suffering from a major physiological, anatomical or psychological impairment, verified by objective medical findings; the impairment must be one that is likely to continue indefinitely without substantial improvement and that will severely limit activities of normal living. The federal contribution may not exceed 50 p.c. of $\$ 65$ 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. All provinces use a maximum payment of $\$ 65$ a month and the income limits set out in the following paragraph.

For an unmarried person, total income including the allowance may not exceed $\$ 1,140$ a year. For a married couple the limit is $\$ 1,980$ a year except that if the spouse is blind within the meaning of the Blind Persons Act, income of the couple may not exceed $\$ 2,340$ 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 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. When a recipient is required to enter a public or private hospital, the allowance may be paid for no more than two months of hospitalization in a calendar year, excluding months of admission and release, but for the period that a recipient is in hospital for therapeutic treatment for his disability or rehabilitation, the allowance may continue to be paid.

As in previous years, disabilities in the two medical classes-mental, psychoneurotic and personality disorders, and diseases of the nervous system and sense organs-were found to be the most prevalent among the persons becoming eligible for allowance in the year ended Mar. 31, 1962; diseases of the circulatory system was the third largest class. Mental deficiency, the most frequently occurring disability, accounted for over one quarter of all cases granted an allowance.

Recipients of disability allowances who are in need may receive supplementary aid under general assistance programs in the province. Where the amount of aid is determined through an individual assessment of need, which takes the recipient's requirements and resources into consideration, the Federal Government may share in it under the Unemployment Assistance Act.

## 6.-Statistics of Allowances for Disabled Persons, by Province, Year Ended Mar. 31, 1962 with Totals for 1958-62

Nore.- Provincial figures for each year from the inception of the Act to 1961 are given in the corresponding table of previous Year Books beginning with the 1956 edition.

| Province or Territory | Recipients in Month of March | Average <br> Amount of Monthly Allowance | P.C. of Recipients to Population Age 20-69 | Federal Government Contribution during Year |
| :---: | :---: | :---: | :---: | :---: |
|  | No. | \$ |  | \$ |
| Newfoundland. | 1,292 | $54.51{ }^{1}$ | 0.616 | 413,676 |
| Prince Edward Island | 780 | $64.44{ }^{2}$ | 1.529 | 258,995 |
| Nova Scotia | 2,776 | $64.02{ }^{2}$ | 0.737 | 908,644 |
| New Brunswick. | 2,000 | $64.54{ }^{2}$ | 0.692 | 668,392 |
| Quebec. | 22,528 | $54.09^{2}$ | 0.806 | 7,460,933 |
| Ontario. | 13,762 | $63.47{ }^{2}$ | 0.394 | 4,503,239 |
| Manitoba. | 1,447 | $64.04{ }^{2}$ | 0.290 | 477,943 |
| Saskatchewan | 1,502 | $54.33{ }^{2}$ | 0.315 | 489,505 |
| Alberta. | 1,762 | $53.22^{2}$ | 0.246 | 558,533 |
| British Columbia | 2,156 | $54.02{ }^{1}$ | 0.239 | 685,428 |
| Yukon Territory. | 2,15 | $55.00^{2}$ | 0.060 | 1,760 |
| Northwest Territories. | 19 | $55.00^{3}$ | 0.157 | 6,563 |
| Canada. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 1962 | 50,029 | 58.074 | 0.509 | 16,433,611 |
| 1961 | 50,650 | 53.80 | 0.522 | 16,385,820 |
| 1960 | 49,889 | 53.86 | 0.520 | 16,050,514 |
| 1959 | 48,040 | 53.84 | 0.508 | 15,330,368 |
| $1958{ }^{5}$ | 41,840 | 53.88 | 0.450 | 11,091,661 |

[^87]
## Subsection 4.-Unemployment Assistance

Unemployment assistance is a federal grant-in-aid program under which the Federal Government shares with the provinces and their municipalities the costs of general assistance. The general assistance programs in the various provinces are known by different names, such as social allowances, social aid, social assistance and general welfare 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. All provinces and the two territories have signed agreements under the Act. The rates and conditions of assistance are determined by the province or municipality. Payments to both employable and unemployable persons who are unemployed and in need are shareable under the agreement as are the costs of maintaining persons in homes for special care (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 both of the recipient's basic requirements and of his financial resources.

During the year ended Mar. 31, 1962, the Federal Government made payments for unemployment assistance amounting to $\$ 92,044,244$. The federal share of assistance costs shown in Table 7, however, is based on payments for the months in which the assistance was actually given and, since claims may be submitted at any time within six months after the month to which they relate, the figures for each fiscal year include certain reimbursements made to the provinces after the end of that year.

## 7.-Unemployment Assistance, by Province, Year Ended Mar. 31, 1962 with Totals for 1958-62

Nore.-Provincial figures for each year from the inception of the Act to 1961 are given in the corresponding table of previous Year Books beginning with the 1957-58 edition.

| Province | Recipients ${ }^{1}$ in March | Federal Share of Unemployment Assistance Costs ${ }^{2}$ | Province or Territory | Recipients ${ }^{1}$ in March | Federal Share of Unemployment Assistance Costs ${ }^{2}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | \$ |  | No. | \$ |
| Newfoundland. | 59,1443 | 4,064,063 | British Columbia.... | 91,816 ${ }^{3}$ | 15,965,364 |
| Prince Edward Island. | 2,819 | 174,422 | Yukon Territory.......... | 205 233 | $\begin{array}{r} 39,820 \\ 32 \end{array}$ |
| Nova Scotia ${ }_{\text {New Brunswick...... }}$ | $26,200{ }^{\text {a }}$ $33,841^{3}$ | $1,673,624$ $1,526,972$ | Northwest Territories...... |  |  |
| Quebec. | 253,584 | 32,339, 377 | Canada............ 1962 | 703,739 | 87,831,749 |
| Ontario. | 123,923 | 18,741,458 | 1961 | 562,720 | 59,707,964 |
| Manitobs... | 32,3483 | 4,285, 212 | 1960 | 322,553 | 38,201,087 |
| Saskatchewan. | ${ }^{44,490}{ }^{3}$ | 4,525, 334 | 1959 | 297,760 | 30,849,721 |
| Alberta....... | $35,136^{3}$ | 4,462,337 | $1958{ }^{4}$ | 182,054 | 10,813,003 |

[^88]provinces only participating; all provinces and territories were participating in the program in 1959.

## Subsection 5.-Fitness and Amateur Sport Program

The Fitness and Amateur Sport Act, passed Sept. 25 and proclaimed Dec. 15, 1961, brought a new focus and impetus to the development of fitness in Canada and to efforts to raise levels of participation and proficiency in both competitive and non-competitive sports. The Act is administered by the Fitness and Amateur Sport Directorate in the Welfare Branch of the Department of National Health and Welfare.

The new legislation provides for an annual $\$ 5,000,000$ allocation "to encourage, promote and develop fitness and amateur sport'". The program operates through three main channels. Grants are made to national organizations to assist national and international
aspects of the program, and to the provinces to develop and extend community effort. In addition, federal co-ordinating and developmental work is carried on by the department which works in close co-operation with other federal agencies concerned with different aspects of fitness and amateur sport.

A 30-member National Advisory Council on Fitness and Amateur Sport was appointed in 1962 and, in addition, a federal-provincial committee, at the deputy minister level, is concerned with the federal-provincial aspects of the program. Through these two groups the Minister of National Health and Welfare is advised, both from the point of view of the private citizens of Canada and from that of the governments directly concerned with the program. Specialist committees of experts advise on technical aspects of the program as required.

One of the main tasks to be undertaken under the new program is the building up of training courses for leaders, coaches and other professional personnel at the community level. The new Act bolsters and enlarges the emphasis already being given to this work by programs in operation in a number of provinces. Awards of scholarships, fellowships and bursaries will assist persons in undertaking professional studies in physical education, recreation and the medical aspects of fitness, which should do much to overcome acute shortages of trained personnel.

The Act provides for aid to research on aspects of physical performance, such as the effects of activity on different age groups and the effects of different kinds of activity on physical development. Surveys of resources, of facilities and of personnel may also be assisted. The urgent need for new and greatly expanded informational material for both the expert and the public has long been recognized; through the new program, instructional material suitable to Canadian needs can be developed with the co-operative efforts of experts from across Canada.

Provision is made for recognition of achievement in fitness and amateur sport activities through awards or citations. Also, the promotion and development of participation in national and international sport competitions will be assisted. Because of the ease with which it could be implemented, this aspect of the Act could receive early attention. In view of the high costs involved and the practically unlimited demand for new sports and recreational facilities, this type of assistance is restricted to the construction of national or provincial training centres serving large areas. The major vehicle for federal aid to construction of local sports and recreational facilities is the municipal winter works program administered by the Department of Labour.

The groundwork of the program was laid during the first year of operation when $\$ 230,000$ was expended on grants to organizations. During the second year, expenditure amounted to $\$ 1,000,000$ on projects which included research, scholarships, bursaries and fellowships, educational and information services, grants to the provinces for the development of services at the community level and grants to national agencies to assist international and national competition and for organizational and instructional purposes.

## Subsection 6.-National Welfare Grant Program

In November 1962, the Federal Government established a national welfare grant program consisting of general welfare and professional training grants and welfare research grants; an amount of $\$ 250,000$ was allocated for the first fiscal year (1962-63) of its operation. The program provides funds for demonstration and other projects designed 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. Costs are shared by the federal and provincial governments.

Also on a cost-sharing basis, funds are available for bursaries for graduate study at Canadian Schools of Social Work to students who have just completed their undergraduate studies, to persons who have left employment in welfare and related fields to start or
complete their training, and to persons employed in public and voluntary welfare agencies in Canada who have been granted educational leave as part of agency staff-development plans. Funds are also available for a variety of short-term staff-training programs for graduate social workers and non-graduate welfare personnel employed by public or voluntary welfare agencies on direct service, supervisory or administrative work, where this can be justified as a means of achieving more effective and efficient administration.

Teaching and field instruction grants are available to Canadian Schools of Social Work to assist in the employment of additional faculty members and field instructors required as a result of the welfare grant program.

Funds are available to public and voluntary agencies for a variety of surveys, studies and research projects. Priority is given to those projects holding promise of making significant steps forward in the organization, co-ordination and staffing of existing welfare services and in the development of new services focused on the prevention of welfare problems and dependency.

Each year scholarships for graduate study in social work will be awarded from federal funds to those persons who have completed their undergraduate studies with high academic standing. Fellowships for study at Canadian and foreign universities will also be awarded to persons who have demonstrated leadership qualities and ability of high order in the fields of administration, teaching and research in welfare.

## Subsection 7.-Vocational Rehabilitation

The nation-wide vocational rehabilitation program, started in 1952, has been consolidated and extended since the enactment of 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 cooperation with existing services. Services, which may be either provided directly or obtained from other agencies or individuals by provincial rehabilitation authorities, include medical, social and vocational assessment, counselling, restorative services, vocational training and employment placement. They are designed to assist individuals having a substantial physical or mental disability to become vocationally useful in gainful employment or in the home. A provincial Co-ordinator or Director of Rehabilitation, placed in the health or welfare department, is responsible for the co-ordination and administration of vocational rehabilitation services to disabled individuals.

The National Co-ordinator in the Civilian Rehabilitation Branch, Department of Labour, administers the federal aspects of this program including the co-ordination of federal activities in vocational rehabilitation and the provision of consultative services. A National Advisory Council composed of representatives of the provinces, employers, labour, the medical profession, national voluntary agencies and the universities has been established under the Act. A federal Interdepartmental Committee on Vocational Rehabilitation and the Co-ordination of Rehabilitation Services has also been formed. In the fiscal year 1961-62, prior to the new legislation becoming effective, federal-provincial expenditures under the old program (exclusive of vocational training) totalled $\$ 364,850$. Full reports were received of 1,669 disabled persons rehabilitated during the year; before rehabilitation the majority of these persons and their dependants relied on relatives or public assistance for support at an estimated annual cost of $\$ 900,000$, whereas following rehabilitation the estimated total annual earnings of those gainfully employed was estimated to be $\$ 3,200,000$.

Although administered separately, medical rehabilitation, vocational training and special employment services for the handicapped are available as integral parts of the federal-provincial rehabilitation program. The provincial co-ordinators seek out disabled persons for assessment and referral to appropriate services. Suitable training where required is supplied through the federal-provincial agreements made under the Technical and Vocational Training Assistance Act administered by the Department of Labour.


#### Abstract

"Program 6", Training of the Disabled of the Canadian Vocational Training Program, provides for equal sharing by Canada and the provinces of the cost of approved programs for the training of disabled persons who require such training to fit them for gainful employment. The training costs cover vocational assessment, pre-vocational preparation, tuition, books and supplies, maintenance allowances, travel expenses and extra costs necessitated by disability. Disabled persons approved by provincial training selection committees may attend regular provincial or municipal vocational schools, private trade schools, universities, special classes, or be trained on the job. During 1961-62 there were 2,765 disabled persons enrolled in various courses at a total cost of $\$ 736,372 ; 1,457$ of these persons completed their training within the year.

The National Employment Service continues its responsibility for job placement of disabled persons with occupational handicaps. Employment liaison officers of the Special Services Section, who advise on employment conditions and the working capabilities of disabled persons, have been seconded to the offices of the provincial co-ordinators of rehabilitation in five provinces. Referrals for job placement are made to some 350 Special Services Officers in the local employment offices. Special placements of handicapped persons who required assistance in finding work in 1962 (including those referred from provincial rehabilitation authorities) numbered 20,403.

The Federal Government also provides direct services for particular groups through programs administered by the Department of Veterans Affairs for disabled, chronically ill, and aging veterans, by the Department of Citizenship and Immigration for physically and socially handicapped Indians, and by the Department of Northern Affairs and National Resources for the training and resettlement of disabled Eskimos and Indians within its jurisdiction.


## 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 care and protection. In most provinces responsibility for a number of the programs is shared by the provinces and their municipalities. Provincial administration of welfare services 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.

In recent years, the provinces have assumed a substantial share of the costs of general assistance or residual aid, and some have broadened the area of social allowances, formerly limited almost entirely to mothers' allowances, in which the municipalities do not share costs. The financial contributions of the Federal Government to the provinces for unemployment assistance (see p. 299) has doubtless been an important contributing factor in these developments.

All provinces continue to give consideration to the need for planning on behalf of older citizens. A number have increased their capital or maintenance grants to municipalities and to voluntary groups for homes for the aged and are also assisting in the construction of low-rental housing projects.

The main efforts in child welfare have been directed toward improvement of standards and greater flexibility of services, with particular emphasis on preventive casework services for children in their own homes, development of specialized children's institutions, and the finding of adoption homes for all children in need of them.

The public services are supplemented by an impressive number of voluntary agencies which also contribute to community welfare, including 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 the services they render, although, with the exception of the semi-public children's aid societies, their main support may be from united funds or community chests, or from sponsoring organizations.

## Subsection 1.-Mothers' Allowances

All provinces make provision for allowances to needy mothers who are deprived of the breadwinner and are unable to maintain their dependent children without assistance. A number of provinces include mothers' allowances in a broadened program of provincial allowances to several categories of persons with long-term need. There is a tendency to incorporate 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 and in the same way 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 may be eligible under particular 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 school or if he 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.

The numbers of families and children assisted in each province as at Mar. 31, 1962, together with the amounts of benefits paid during the year are given in Table 8 and rates of benefit as at December 1962 in Table 9.

## 8.-Mothers' Allowances, by Province, as at Mar. 31, 1962 with Totals for 1958-62

Nort.-Provincial figures for each year from the inception of the allowance to 1961 are given in the corresponding table of previous Year Books.

| Province |  | Families Assisted | Children Assisted | Payments during the Year Ended Mar. 31 |
| :---: | :---: | :---: | :---: | :---: |
|  |  | No. | No. | 8 |
| Newfoundland. |  | 4,498 | 12,315 | 4,308,762 |
| Prince Edward Island. |  | 269 | 649 | 131,300 |
| Nova Scotia. |  | 2,759 | 7,452 | 2,258,875 |
| New Brunswick. |  | 2,119 | 6,178 | 1,356,078 |
| Quebec. |  | 19,842 | 52,462 | 19,479,716 |
| Ontario.. |  | 10,359 | 25,537 | 13,650,401 |
| Manitoba. |  | 1,6381 | 3,6351 | 2,360,594 |
| Saskatchewan. |  | 2,382 | 5,837 | 2,679,587 |
| Alberta ${ }^{2}$. $\ldots \ldots \ldots \ldots$British Columbia |  | 1,611 | 3,319 | 1,879,195 |
|  |  | . | . | .. |
| Canada ${ }^{4}$ | . 1962 | 45,477 | 117,384 | 48,104,508 |
|  | 1961 | 45,918 ${ }^{\text {r }}$ | 119,423r | 46,245,303 |
|  | 1960 | 43,937r | 114,469r | 44,881,971 |
|  | 1959 | 44,2401 | 116,000 ${ }^{1}$ | 41,478,206 |
|  | 1958 | 39,300 ${ }^{1}$ | 101,500 ${ }^{1}$ | 30,881,225 |

[^89]9.-Maximum Monthly Rates under Provincial Mothers' Allowances Programs, December 1962

| Province | Mother and One Child | Each Additional Child | Disabled Father at Home | Family Maximum | Supplementary |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Nfld....... | Food: $\$ 35$ or $\$ 37$ depending on age of child. Clothing: $\$ 5$ for each person. <br> Rent: up to $\$ 20$ monthly in rural and to $\$ 30$ monthly in urban areas. Fuel: up to $\$ 10$. | Food: $\$ 10$ for each child under age 16; $\$ 12$ for each child age 16 or over. <br> Clothing: $\$ 5$. | \$20 | None set. | In special circumstances up to $\$ 30$ a month additionalifnecessary for proper support of family. |
| P.E.I...... | \$45 | \$5 | No additional allowance granted. | \$125 | None granted. |
| N.S....... | No set maximum; rates family income for com lives. | are based on average munity in which family | Included in budget on which allowance is based. | \$90 | None granted. |
| N.B........ | \$35 | \$10 | No additional allowance granted. | \$90 | Director may grant an additional $\$ 10$ for rent if circumstances require it, but only if allowance paid is below maximum. |
| Que....... | \$75 | \$10 | \$10 | $\begin{aligned} & \text { None set } \\ & \text { (minimum } \\ & \text { granted } \$ 5 \text { ). } \end{aligned}$ | A supplementary allowance may be granted according io need. |
| Ont........ | \$120 for mother or father and one child. <br> $\$ 30$ for one child living with foster mother. | $\$ 16$ for 2nd child <br> $\$ 14$ for 3rd child <br> $\$ 12$ for 4 th child <br> $\$ 10$ for 5 th child <br> $\$ 8$ for 6 th child. <br> $\$ 25$ for 2 nd foster child <br> $\$ 15$ for each additional <br> foster child. | Included in budget on which allowance is based. | \$180 | An increase in food allowance may be granted on medical recommendation. A fuel allowance of up to $\$ 24$ a month may be granted from Sept. 1 to Mar. 31. An increase of 20 p.c. in fuel allowance may be granted under special circumstances. |
| Man....... | Food, Clothing and Personal Needs: \$52-\$64 depending on age of child. <br> Shelter: rent to \$55, or current taxes and insurance at actual cost. minor repairs to $\$ 125$ a year, principal and interest on mortgage or agreement for sale up to \$55 less taxes and insurance. Utilities: up to $\$ 7$. | $\$ 14$ for child up to 3 years <br> $\$ 16$ for child 4-6 years $\$ 21$ for child 7-11 years $\$ 26$ for child 12-18 years (subject to reductions for 4 th and each additional child). | \$25 | None set. | $\$ 10$ for rent if necessary. Housekeeper service as required. Fuel allowance for eight months. For special needs not covered by basic sched ule items, up to $\$ 150$ a year. |
| Sask....... | Food, Clothing, Household and Personal Needs: \$51.80-\$67.00 depending on age of child Rent: \$40 <br> Fuel: up to $\$ 15.15$ <br> Utilities: up to $\$ 11$. | $\$ 17.40$ for pre-school child <br> $\$ 24.35$ for child 6-11 years $\$ 29.30$ forchild12-15years $\$ 32.60$ for child $16-18$ years (subject to reductions for fourth and each additional person). | \$31.50 | None set. | Special food allowance may be granted on medical recommen dation. An allowance for a housekeeper may be granted if neces sary. |

9.-Maximum Monthly Rates under Provincial Mothers' Allowances Programs, December 1962-concluded

| Province | Mother and One Child | Each Additional Child | Disabled <br> Father at Home | $\underset{\text { Family }}{ }$ Maximum | Supplementary |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Alta. | Food and Clothing: \$48.15- $\$ 68.10$ depending on age and sex of child. Rent, Fuel, Utilities: according to community standards. | $\$ 14.95$ for food and clothing for infant under 1 year. <br> 1.40- $\$ 27.20$ for food for child 1-18 years de- pending on age and sex. \$3.55-\$9.05 for clothing for child 1-18 years depending on age and sex, subject to 10 -p.c. increase in food allowance for a third person, and reductions of 5 p.c. for a family of seven or more. | \$30.50 | None set. | An increase in food allowance may be recommendation. |
| B.C. | Allowances to needy mothers provided under the Social Assistance Act and not separable. |  |  |  |  |

## Subsection 2.-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. Besides financial aid for the basic needs of food, clothing, shelter and utilities, a number of provinces also provide incapacitation or rehabilitation allowances, counselling and homemaking services, and post-sanatorium care. This assistance, with some exceptions, is administered by the municipality 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. 299).

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. In Newfoundland, general assistance is the responsibility of the province and is administered by the Department of Public Welfare. In Prince Edward Island, the Department of Welfare and Labour provides direct social assistance in rural areas and assumes 75 p.c. of the cost of assistance granted by the City of Charlottetown and the incorporated towns and villages; aid to needy families where the breadwinner is suffering from tuberculosis is borne entirely by the province. In Nova Scotia, assistance is administered by the municipality, which receives reimbursement from the Department of Public Welfare for two thirds of the cost of the aid provided and one half of the cost of administration; allowances for
certain disabled persons are administered by the province. In New Brunswick, the province reimburses each municipality to the extent of one dollar per capita of the population plus 70 p.c. of expenditures on general assistance in excess of that amount, and also pays 50 p.c. of the cost of administration.

In Quebec, the Department of Family and Social Welfare reimburses authorized agencies and municipal departments for the full cost of aid to persons in their own homes. It takes full responsibility for aid to persons who are unfit for work for at least 12 months, for supplementary allowances and allowances to needy widows and spinsters 60-65 years of age. The cost of aid to unemployable persons in homes for special care, including nursing homes, is borne two thirds by the province and one third by the institution. In Ontario, the municipalities administer all forms of aid available under the General Welfare Assistance Act. The Department of Public Welfare reimburses them up to a prescribed maximum for 80 p.c. of their expenditures, and for 90 p.c. of expenditures for aid to persons in excess of a given proportion of the population in the municipality. Aid for rehabilitation services and aid on behalf of foster children, for which the municipalities are reimbursed 50 p.c., are excluded in these calculations.

In Manitoba, the province administers aid to mentally or physically incapacitated persons whose disability is likely to last more than 90 days, and to persons unable to work because of their age. Aid to other needy persons, termed indigent relief, is the responsibility of the municipalities which are reimbursed through the provincial Department of Welfare to the extent of 40 p.c. of the costs, or at a higher rate if costs exceed a specified amount. In Saskatchewan, through the Department of Social Welfare and Rehabilitation, the province reimburses the municipalities for approximately 93 p.c. of the cost of assistance granted to needy persons. In Alberta, the province reimburses the municipalities for 80 p.c. of the value of the assistance given. The provincial Department of Public Welfare has full responsibility for allowances payable to persons who are mentally or physically handicapped for a period likely to last for more than 90 days, and to persons who because of their age are not able to be self-supporting. The Department maintains two hostels and one welfare centre to care for unemployable single homeless men without municipal domicile.

British Columbia, through its Department of Social Welfare, reimburses the municipalities on a pooled basis for 90 p.c. of the total cost of social assistance to needy persons. Also, the province shares equally with the municipalities expenditures on salaries of social workers; a municipality with fewer than 15,000 persons may arrange to have the Department undertake social work within the municipality and reimburse it at the rate of 30 cents per capita per year.

## Subsection 3.-Services for the Aged

In all provinces, homes for the aged and infirm are provided under provincial, municipal or voluntary auspices. Voluntary homes generally are provincially inspected in accordance with prescribed standards and in some provinces must be licensed. Most provinces contribute to the maintenance of elderly persons in homes for the aged, either through general assistance or through statutes that relate particularly to these homes. Also, 50 p.c. of the payments on behalf of assistance cases in homes for the aged and infirm (homes for special care) are met by the Federal Government (see p. 305).

Several provinces make capital grants toward the construction of homes, and in five provinces capital grants are also available to municipalities, voluntary organizations, or limited-dividend companies for the construction of low-rental housing.

Newfoundland maintains a home for the aged and infirm at St. John's and pays part or all of the cost of maintaining needy old people in homes for the aged and boarding homes. In 1955, a grant of 20 p.c. of costs, to be paid over a ten-year period, was made to a religious organization for the construction of a home, and provision is made for grants to similar projects under other auspices. The province is authorized by the Senior Citizens (Housing) Act, 1960 to guarantee the repayment of loans made under the National Housing Act to limited-dividend companies constructing hostels or housing for the elderly and to guarantee
the cost of operating such projects. The aged and infirm in Prince Edward Island are cared for in two institutions operated by the Department of Welfare and Labour. In Nova Scotia, the aged are cared for in municipal or county homes, in homes operated by religious or private organizations and in private boarding homes. The province reimburses the municipalities for two thirds of their expenditures for the maintenance of needy persons in municipal homes, subject to compliance with specified standards of care and accommodation. Homes for the aged receiving aid from the provincial government are subject to provincial inspection. Homes for the aged in New Brunswick are operated under municipal, religious, fraternal and private auspices and receive no direct financial support from the province. Voluntary and proprietary homes are subject to provincial licensing and inspection and must meet standards contained in regulations under the Health Act. Under the Social Assistance Act, 1960, the province contributes to the maintenance of needy persons in municipal homes.

Institutional care for indigent old people in Quebec is provided through charitable institutions under the Public Charities Act. The Homes for the Aged Act authorizes the province to erect and maintain homes for the aged and housing projects, or to make grants to voluntary organizations for this purpose. Standards in homes are governed by regulations under the Public Health Act.

Under the Ontario Homes for the Aged Act, municipalities must provide institutional or boarding-home care for the aged. The province contributes 50 p.c. of the costs of constructing approved homes and 70 p.c. of their net operating and maintenance costs. It also pays up to 70 p.c. of the costs of maintenance in approved boarding homes. Homes for the aged under voluntary auspices are approved, inspected and assisted under the Charitable Institutions Act, which provides for grants in aid of construction equalling 50 p.c. of costs up to $\$ 2,500$ per bed and maintenance grants of 75 p.c. of the amount spent by the organization up to $\$ 3.40$ per day for each resident. The Elderly Persons Housing Aid Act provides for grants to limited-dividend housing corporations building low-rental housing for elderly persons. In 1962 Ontario passed the Elderly Persons Social and Recreational Centres Act, the first of its kind in Canada. This Act enables groups of interested citizens to provide social and recreational centres for elderly residents of a community. The province will meet up to 30 p.c. of the cost of constructing or buying a building for such a centre if the local municipality contributes 20 p.c.

Institutions and boarding homes for the aged and infirm in Manitoba are supervised and licensed by the Department of Health and Public Welfare under public health legislation. Under the Elderly Persons Housing Act, the province makes construction grants to municipalities and charitable organizations equalling one third of the costs of constructing or acquiring and renovating housing accommodation and homes for the aged. Grants may not exceed $\$ 1,400$ for one-person housing units, $\$ 1,667$ for two-person housing units, $\$ 1,200$ per bed for new homes for the aged, and $\$ 700$ per bed for homes that have been renovated. Under the Social Allowances Act, 1959, the province bears the entire cost of assistance to those who, because of age or incapacity, require care for more than 90 days by another or in a home for the aged.

Aged and infirm persons in Saskatchewan are cared for in four provincial nursing homes and in voluntary homes for the aged. The latter are inspected and licensed under the Housing Act. This Act also empowers the province and municipalities to subscribe to the stock of limited-dividend housing companies building low-rental accommodation for older persons; the province may also make loans to municipalities to assist them in subscribing. Capital grants amounting to 20 p.c. of construction costs and maintenance grants of $\$ 40$ per bed per year may be made to municipalities, churches or charitable organizations sponsoring approved homes or housing projects. Costs of maintaining needy persons in homes for the aged are shared by the province and the municipalities under the Social Assistance Act.

Under what are termed 'master agreements', the Province of Alberta bears the cost of constructing and equipping homes for the aged and housing units on municipal land. Projects are operated by provincially incorporated foundations which include municipal
councilmen in their membership; net costs of operation are borne by the municipalities. The province also meets up to 80 p.c. of the cost incurred by municipalities for the maintenance of elderly persons in housing projects and municipal or private homes. Private homes are municipally licensed.

The Province of British Columbia operates a home for elderly homeless men, a provincial infirmary for the chronically ill and, for senile and psychotic patients, three provincial homes for the aged. It also licenses and supervises homes for the aged and boarding homes and, where necessary, shares with the municipalities on a $90-10$ basis the cost of maintaining needy residents. Under the Elderly Persons Housing Aid Act, the province makes grants amounting to one third of construction costs to municipalities and non-profit corporations, including religious and service organizations, engaged in building homes or low-rental housing units for elderly citizens.

## Subsection 4.-Child Care and Protection

Child welfare services, which include child protection and care, services for unmarried parents and adoption services, are provided in all provinces under provincial legislation and are administered by a division of child welfare within the provincial department of welfare. The program may be administered by the provincial authority or the responsibility may be delegated to local children's aid societies, that is, to voluntary agencies with boards of directors, operating under charter and under the general supervision of provincial departments; in Quebec, child welfare services are administered by recognized voluntary agencies and institutions, religious and secular. In Newfoundland, Prince Edward Island, Saskatchewan and, to a large extent, in Alberta, they are administered by the province; in the larger urban centres of Alberta there is some delegation of authority to the municipality. In Ontario and New Brunswick, a network of local children's aid societies, operating under statutory authority, 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 in other areas.

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-as in Alberta, Manitoba, Prince Edward Island and Newfoundland-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 apprehend 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 proven, 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. The appropriate agency is then responsible for making arrangements to meet the needs of the child in so far as community resources permit. The services may involve casework with families in their own homes, or care may be provided in foster boarding homes, in adoption homes or, for children who need this form of care, 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 13,000 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 also for teenage children who may find it easier to fit into a group setting than into a foster home. 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 child welfare legislation or by special statutes dealing with welfare institutions, and by provincial or municipal public health regulations. The institutions are generally subject to inspection and in some provinces to licensing, and are usually required to make reports to the province on the movement of children under their care. 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. This Act sets out standards for operation and licensing and provides for provincial reimbursement of one half of the operating and maintenance costs of municipally sponsored day nurseries, which are established in most of the industrial centres in that province.

## PART III.-HEALTH AND SOCIAL WELFARE EXPENDITURES

## Section 1.-Government Expenditures on Health and Social Welfare

In the six fiscal years 1956-57 to 1961-62, total annual expenditures of all levels of government on health and social welfare increased from $\$ 2,004,000,000$ to $\$ 3,679,000,000$, or over 80 p.c. When the growth of population is taken into account, the increase was somewhat less-per capita expenditure advanced from $\$ 125$ to $\$ 202$, or about 60 p.c. Government expenditures may also be measured in relation to the national accounts; on this basis, government expenditures on health and social welfare rose over the period under review from 8.5 p.c. to 12.9 p.c. of the national income and from 6.5 p.c. to 9.8 p.c. of the gross national product.

The federal share of health and social welfare expenditures increased from 70.0 p.c. in 1956-57 to a peak of 73.9 p.c. in 1958-59 and, conversely, the provincial and municipal shares fell, respectively, from 24.8 to 22.2 p.c. and from 5.2 to 3.9 p.c. However, since 1958-59, provincial expenditures increased more rapidly than federal expenditures mainly because of hospital insurance outlays which, although divided almost equally between the federal and provincial governments, form a relatively larger part of provincial expenditures on health and social welfare than they do of federal expenditures. As a result, the federal share dropped to 70.0 p.c. in 1961-62 and the provincial share rose to 27.0 p.c. The steady decline in municipal expenditures, in percentage terms, during the six years was attributable mainly to the introduction of hospital insurance which relieved the municipalities of much of the cost of hospital care for indigents.

Of considerable interest is the growing proportion of government expenditures on health and social welfare taken up by health programs. In 1956-57, health programs accounted for $\$ 470,000,000$ or 23 p.c.; by $1961-62$, the outlays amounted to $\$ 1,108,000,000$ or 30 p.c.

An analysis of the principal components for the year ended Mar. 31, 1962 indicates the magnitude of the major programs and services. Family allowances payments amounted to $\$ 521,000,000$, old age security payments to $\$ 625,000,000$ and unemployment insurance benefits to $\$ 455,000,000$. Veterans pensions and allowances accounted for $\$ 178,000,000$ and $\$ 75,000,000$, respectively, and payments from the Prairie Farm Emergency Fund totalled $\$ 54,000,000$. These income maintenance programs were entirely the responsibility of the Federal Government. Federal-provincial income maintenance programs required expenditures of $\$ 61,000,000$ for old age assistance, $\$ 5,000,000$ for blindness allowances,

$\$ 33,000,000$ for disabled persons allowances and nearly $\$ 200,000,000$ for unemployment assistance, the latter figure including some municipal expenditure. Workmen's Compensation Boards spent $\$ 94,000,000$ on cash benefits for pensions and compensation and the provincial governments about $\$ 48,000,000$ on mothers' allowances.

Welfare services for Indians and for veterans and the national employment service accounted for $\$ 36,000,000$ at the federal level while child welfare services required an expenditure of almost $\$ 34,000,000$ by provincial governments.

In the field of health, federal grants to the provinces under the Hospital Insurance and Diagnostic Services Act totalled $\$ 284,000,000$ and grants for hospital construction and general health grants to the provinces and municipalities amounted to $\$ 49,000,000$. The Federal Government spent $\$ 24,000,000$ on the Indian and Northern Health Service and $\$ 47,000,000$ on hospital and treatment services for veterans. Provincial expenditures on hospital care amounted to an estimated $\$ 524,000,000$ and $\$ 60,000,000$ was spent on other health services. Workmen's Compensation Boards paid $\$ 38,000,000$ for medical aid and hospitalization. Municipal governments spent $\$ 65,000,000$ on health.

Altogether, these items accounted for expenditures of $\$ 3,500,000,000$ in the year ended Mar. 31, 1962.
1.-Total, per Capita and Percentage Distribution of Government Expenditures on Health and Social Welfare, by Level of Government, Years Ended Mar. 31, 1957-62

| Year Ended Mar. 31- | Federal | Provincial | Municipal | Total |
| :---: | :---: | :---: | :---: | :---: |
|  | Expenditures |  |  |  |
|  | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 |
| 1957. | 1,402.5 | 496.9 | 104.1 | 2,003.5 |
| 1958. | 1,755.1 | 572.1 | 112.6 | 2,429.8 |
| 1959. | 2,084.7 | 627.4 | 109.9 | 2,822.0 |
| 1960 | 2,162.2 | 762.1 | 106.4 | 3,030.7 |
| 1961. | 2,359.9 | 888.8 p | 109.0 | 3,357.7 |
| 1962. | 2,575.8 | $994.0{ }^{\text {p }}$ | $109.0^{1}$ | 3,678.8 |
|  | Per Captra Expenditures |  |  |  |
|  | $\$$ | $\$$ | $\$$ | \$ |
| 1957. | 87.21 | 30.90 | 6.47 | 124.59 |
| 1958....... | 105.67 | 34.44 | 6.78 | 146.89 |
| 1959. | 122.06 | 36.73 | 6.43 | 165.22 |
| 1960 | 123.67 | 43.59 | 6.09 | 173.35 |
| 1961. | 132.06 | 49.74p | 6.10 | 187.90 |
| 1962. | 141.23 | 54.50p | $5.98{ }^{1}$ | 201.71 |
|  | Percentage Distribution |  |  |  |
| 1957. | 70.0 | 24.8 | 5.2 | 100.0 |
| 1958. | 71.9 | 23.4 | 4.6 | 100.0 |
| 1959. | 73.9 | 22.2 | 3.9 | 100.0 |
| 1960. | 71.3 | 25.1 | 3.5 | 100.0 |
| 1961. | 70.3 | 26.5 | 3.2 | 100.0 |
| 1962. | 70.0 | 27.0 | 3.0 | 100.0 |

${ }^{1}$ Estimated.

## 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.

In 1961, Canadians spent an estimated $\$ 1,652,000,000$ on personal health care, an amount two and one quarter times the $\$ 735,000,000$ so spent in 1953 . The rate of increase averaged 10.8 p.c. during the period, varying from a minimum of 8.2 p.c. between 1954 and 1955 to a maximum of 13.6 p.c. between 1955 and 1956. Although the Canadian population rose during these years by 22.9 p.c., the expenditure figure increased even more rapidly so that the per capita expenditure on personal health care, which was $\$ 49.50$ in 1953 reached $\$ 84.27$ in 1960 and an estimated $\$ 90.57$ in 1961.

The proportion of the gross national production represented by expenditures on personal health care varied from 2.9 p.c. in 1953 to 4.5 p.c. in 1961, with a slight reduction between 1954 and 1955. In other words, one dollar in every $\$ 22$ of production in Canada in 1961 was for personal health care goods and services as compared with one dollar in $\$ 34$ for the year 1953.

## 2.-Expenditures on Personal Health Care, 1953-61

Note.-Figures exclude expenditures on public health and expenditures for capital purposes.

| Year | Hospital Services |  |  |  |  | Physicians Services | Prescribed Drugs ${ }^{4}$, ${ }^{5}$ | Dentists' Services | Other ${ }^{8}$ | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Active Treatment ${ }^{1}$ | Mental ${ }^{2}$ | Tuberculosis ${ }^{2}$ | Federal ${ }^{3}$ | All <br> Hospitals |  |  |  |  |  |
|  | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 |
| 1953.. | 280.4 | 57.8 | 29.4 | 36.4 | 404.0 | 176.6 | 48.8 | 60.5 | 45.0 | 734.9 |
| 1954.. | 314.0 | 64.5 | 30.4 | 37.9 | 446.8 | 188.6 | 52.1 | 66.4 | 50.0 | 803.9 |
| 1955.. | 342.4 | 68.9 | 29.9 | 38.8 | 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 | 65.0 | 988.2 |
| $1957 .$. | 422.9 | 87.5 | 31.0 | 45.3 | 586.7 | 269.2 | 84.5 | 87.3 | 70.0 | 1,097.7 |
| 1958.. | 462.3 | 99.0 | 30.4 | 48.4 | 640.1 | 295.5 | 90.3 | 98.1 | 85.0 | 1,209.0 |
| 1959.. | 542.6 | 111.6 | 29.6 | 50.3 | 734.1 | 326.8 | 106.5 | 100.1 | 95.0 | 1,362.5 |
| 1960.. | 621.2 | 123.0 | 28.6 | 53.9 | 826.7 | $354.5{ }^{5}$ | 107.3 | 112.4 | 105.0 | 1,505.9 |
| $1961{ }^{\text {b }}$. | 704.6 | 132.8 | 28.3 | 58.1 | 923.8 | 383.2 | 111.1 | 118.8 | 115.0 | 1,651.9 |

${ }^{1}$ Includes gross expenditures of public and private acute, chronic and convalescent hospitals in 1953-57 and, in non-participating provinces, in 1958-60; includes gross expenditures of budget review and contract hospitals in 1961 and, in participating provinces, in 1958-60; excludes expenditures of mental, tuberculosis, and federal hospitals. ${ }^{2}$ Includes gross expenditures of public and private hospitals; excludes expenditures of federal hospitals. ${ }^{3}$ 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 retail drugstores only. ${ }_{5}$ Estimated. ${ }^{6}$ Includes estimated expenditures for private duty nurses, and chiropractors, osteopaths, and optometrists; excludes all employees of hospitals.

## PART IV.-NATIONAL VOLUNTARY HEALTH AND WELFARE AGTIVITIES

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 $8,800,000$ Canadians, or 49 p.c. of the population of Canada, had some protection against the costs of physicians' services at the end of 1960. Their protection was provided by some 64 non-profit plans and at least 43 private companies. Non-profit enrolment was $5,100,000$ while private companies provided surgical coverage to $4,250,000$; overlapping enrolment in the two groups amounted to about 600,000 . The $8,800,000$ net total was $2,900,000$ above the 1955 figure, which represented only 38 p.c. of the population.

The non-profit plans took in $\$ 113,900,000$ in premiums and $\$ 2,200,000$ in other revenue in 1960 , paying out $\$ 100,600,000$ in benefits and $\$ 9,600,000$ for administration, leaving a surplus of $\$ 5,900,000$. Thus for every dollar of premiums, 88 cents were paid out in benefits. Benefit payments of non-profit plans amounted to $\$ 19.76$ per person covered in 1960. In 1955 benefit payments were $\$ 41,400,000$, which represented 89 cents of the premium dollar but amounted to only $\$ 13.17$ per person.

Profit-making private companies offer several classes of health protection-surgical, medical and major medical. Because surgical enrolment is most widespread and because an individual often must take out surgical insurance to be eligible for the other kinds, the surgical enrolment figure is regarded as indicative of total private enrolment. Benefit payments in all classes amounted to $\$ 48,200,000$ in 1960 , or $\$ 11.35$ per person. In 1955 , the total was $\$ 19,300,000$ and the ratio $\$ 6.25$.

## PART V.-VETERANS SERVICES*

The Department of Veterans Affairs administers most of the legislation comprising the Veterans Charter and provides administration 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 main benefits now available to veterans consist of medical treatment for those eligible to receive it, land settlement and home construction assistance, educational assistance for children of the war dead, veterans insurance, general welfare services, unused reestablishment credit, disability and widows' pensions and war veterans allowances. The work of the Department, excepting 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. There are seven Veterans' Land Act district offices and 25 regional offices established to administer the benefits of the Act.

Noteworthy during 1962 were the ceremonies held in Ottawa and in several provincial capitals to mark the 60th anniversary of the signing of the Peace of Vereeniging, which ended the South African War. At one of these ceremonies, the Book of Remembrance containing the names of 267 Canadians who gave their lives in that war and of 16 Canadians who died in the Nile Expedition in 1885 was dedicated by His Excellency the Governor General. At a similar ceremony held on Nov. 11, the Book of Remembrance honouring the 516 Canadians who died in the United Nations operations to restore peace in Korea was dedicated. These Books are displayed temporarily in the Memorial Chamber of the Parliament Buildings at Ottawa.

## Section 1.-Treatment Services

Treatment Activity.-The Department of Veterans Affairs, through its Treatment Services Branch, provides medical, dental, and prosthetic services for entitled veterans throughout Canada. 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.

The primary responsibility of the Branch is to provide examination and treatment to disabled pensioners for their pensionable disabilities. Other main groups of veterans receiving treatment are war veterans allowance recipients, 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 beds are available, any veteran may receive treatment in a Departmental hospital on a guarantee of payment of the cost of treatment. The pensioner receives treatment regardless of his place of residence, but service to other veterans is available in Canada only. Where Departmental facilities are not available, the eligible veteran may receive treatment at the expense of the Department in an outside hospital by a doctor of his own choice.

Under the federal-provincial hospital insurance program, DVA hospitals are recognized for the provision of insured services to veterans. Arrangements have been made for the payment of any necessary premiums on behalf of veterans who are 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.

[^90]Departmental hospitals provide base-hospital facilities for the treatment of members of the Armed Forces. Ste. Foy Hospital near Quebec City and Sunnybrook Hospital at Toronto have segregated units, fully staffed by Armed Forces personnel but utilizing all the ancillary facilities of the hospital. In other institutions the military personnel and patients are completely integrated throughout. Most DVA hospitals provide training facilities for members of the Canadian Forces Medical Service.

Patient load for the year ended Dec. 31, 1962, was as follows:-

| Item | No. |
| :---: | :---: |
| Admissions to Departmental hospitals. | 53,859 |
| Admissions to other hospitals. | 24,676 |
| Total Admissions. | 78,535 |
| Patient-days in Departmental hospitals Patient-days in other hospitals. | $\begin{aligned} & 2,550,186 \\ & 845,092 \end{aligned}$ |
| Total Patient-Days. | 3,395,278 |
| Out-patient visits to Departmental hospitals. | 435,754 |
| Out-patient visits to other Departmental clinics | 91,737 |
| Out-patient visits to doctor-of-choice. | 334, 827 |
| Total Out-Patient Visits. | 862,318 |
| Number of veterans treated under the Doctor-o | 207,049 |

Medical Staff and Training Programs.-Many of the professional staffs of 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 staff are engaged in teaching and private practice, and hold appointments on the medical faculties of the various universities.

In its active treatment institutions, the Department maintains medical teaching programs 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 approved also for advanced postgraduate training in the various specialties. An intern-resident training program is in effect and, at the end of 1962 , there were 270 residents and interns in the medical specialties as well as 157 interns in occupational therapy, physiotherapy, psychology, laboratory, and medical social services.

During 1962, 83 Departmental employees attended courses, assisted fully or partly by the research and education vote. In addition, nursing assistants were trained at a school located at Camp Hill Hospital in Halifax. This school has an annual capacity of 70 graduates who are offered employment in Departmental hospitals across the country.

Medical Research.-During 1962, there were 89 projects in progress under the Clinical Research Program. The 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. (See also pp. 268-269.)

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 in Quebec, Toronto and London in Ontario, Winnipeg, Man., Calgary, Alta., and Vancouver and Victoria, B.C.; also in a health and occupational centre at Ottawa, Ont., and in two domiciliary care homes located at Saskatoon, Sask., and Edmonton, Alta. The rated bed capacity of these institutions at Dec. 31,1962 was 8,918 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 504 beds were available in veterans pavilions situated at Regina and Edmonton. Pavilions are owned by the Department but are operated by the parent hospital, and medical staff is provided by the Department.

A construction program for hospital rehabilitation continued throughout the year. A newly constructed 300 -bed wing for Westminster Hospital in London, Ont., was opened in late summer; construction was completed of a DVA pavilion in the form of a 67 -bed wing attached to the General Hospital at St. John's, Nfld.; and architectural plans were completed for a new Veterans Home at Saskatoon, Sask. A comprehensive report of the principal veterans' hospital projects completed and expenditures thereon during the years 1945-62 is given in the 1962 Year Book, pp. 276-278.

Dental Services.-Dental treatment supplied under Departmental auspices for the year 1962 consisted of 128,730 operations for 20,701 patients. Of this treatment, approximately 76 p.c. was provided in Departmental hospitals and clinics and the remainder by dentists-of-choice on a fee-for-service basis, in areas where Departmental facilities were not available. During 1962, the Department employed 36 dentists on a full-time basis and one on a half-time basis, and utilized the services of three dental consultants on a part-time basis. One-year dental internships were approved and inaugurated during the year.

Prosthetic Services.-The Department operates a Prosthetic Service which is responsible for the supply and maintenance of prostheses, orthopaedic appliances and sensory aid devices to veterans and other persons eligible for treatment under the Veterans Treatment Regulations; these appliances are issued only upon Departmental medical prescription and are supplied and serviced without charge. The Department also extends prosthetic service, upon request, on a repayment basis, to other Federal Government departments, to allied governments, to provincial governments under certain conditions and to workmen's compensation boards. During 1962, approximately 168,000 basic appliances, accessories and repairs were issued to 86,000 patients.

The physical establishment consists of a main factory at Toronto and 12 district manufacturing and fitting centres located in Departmental hospitals throughout Canada. District prosthetic technicians further extend service to five sub-districts by regular weekly or monthly visits. The Toronto factory manufactures certain prostheses, appliances and component parts, provides bulk purchasing of raw materials for distribution to other centres, provides advanced instructional courses for district staff, maintains a research section staffed by engineers and technicians and accepts, when necessary, referrals of cases for whom routine fitting procedures are considered inadequate.

A more comprehensive explanation of the operation of Prosthetic Services is contained in the 1961 Year Book, pp. 291-292.

## Section 2.-Welfare Services

The Welfare Services Branch has specific responsibilities with respect to the administration of statutory benefits designed to assist veterans and their dependants and is equipped to give advice and help in any kind of problem that does not come under the jurisdiction of another branch of the Department. Branch personnel maintain close liaison with and have a detailed knowledge of sources of assistance in the community such as welfare departments at all levels of government, private philanthropic agencies, veterans organizations, etc. These contacts enable the Branch to make prompt and accurate referrals when required and to act as a channel through which the Department becomes aware of situations in which it can assist.

Activities under legislation designed to assist with immediate postwar rehabilitation of veterans lessen year by year. War service gratuities authorized under the War Service Grants Act (cash payments to each veteran of World War II, the amount varying with length of service and area in which it was performed) are now payable only in certain cases where delay of application is acceptable; 20 awards were authorized during 1962 for a total value of $\$ 10,313$. The awaiting returns allowance is now available only to veterans established in full-time farming under the Veterans' Land Act; during 1962 payments amounted to $\$ 17,962$ and there were 21 active accounts at the end of the year. The period of eligibility for training for veterans of World War II and for those who served in Korea has expired except for a few special cases. However, the Pensioners Training Regulations
provide a continuing authority for the training of pensioned veterans and of ex-members of the peacetime forces with disabilities attributed to military service. These regulations enable a pensioner who, because of his disabilities, cannot continue in a former line of work to qualify for another occupation. At the end of 1962 there were 28 trainees on strength, 16 of whom were registered in vocational courses and 12 in university courses.

Legislative changes made in 1962 mainly concern the deferment of the application date for benefits under several rehabilitation and assistance measures to Oct. 31, 1968. Amendments to the Children of War Dead (Education Assistance) Act provide for increased allowances to students when they reach the age of 21 and for certain extensions in the groups eligible for this assistance and in the periods during which it may be provided (see pp. 317-318).

Assistance measures still active are discussed in the following paragraphs. Veterans insurance and educational assistance to children of war dead are covered fairly fully; for other items more detail is given in previous editions of the Year Book.

Re-establishment Credit.-This benefit, authorized under Part II of the War Service Grants Act, is equal in each case to the war service gratuity, less the supplementary gratuity paid for overseas service. Except for balances of $\$ 50$ or less, it is not paid in cash to the veteran but is released on his behalf for specified purposes. From the coming into force of this benefit to the end of 1962 , a total of $\$ 314,276,145$ has been paid out in reestablishment credits; unused balances totalled $\$ 9,454,654$ at the end of 1962. Eligible veterans may apply for this benefit up to Oct. 31, 1968.
1.-Re-establishment Credits Paid, by Required Purposes, 1961 and 1962

| Purpose | 1961 | 1962 | Purpose | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Homes. | $1,101,754$ | 602,974 | Business. | 212,446 | $\stackrel{\$}{\mathbf{\$} 6,193}$ |
| Purchased under National |  |  | Purchase of a busines | 1,488 23,722 | 333 19,452 |
| Housing Act............. | 3,718 | 2,793 | Tools and equipment............. | 187,236 | 116,408 |
| Purchased other than under National Housing Act.... | 23,351 | 13,270 | Miscellaneous.................. | 867,604 | 463,254 |
| Repairs, etc.............. | 157,059 | 86,672 | Insurance, annuities, etc........ | 257,079 | 194, 210 |
| Furniture and equipment | 880,986 | 487,907 | Special equipment for training. | 346, 265 | 178,244 |
| Reduction of mortgage | 36,640 | 12,332 | Reimbursements. | 255,461 | 85,125 |
|  |  |  | Total | 2,181,804 | 1,202,421 |

Casualty Rehabilitation.-The function of the casualty welfare program is outlined in the 1956 Year Book, p. 307. At Dec. 31, 1962, there were 1,408 active cases. The total number of disabled veterans then registered was 48,807 and of these 47,399 were closed cases. New cases opened during 1962 numbered 440 and cases closed numbered 1,829 .
2.-Registrations for Casualty $\underset{\substack{\text { Rehabilitation, by } \\ \text { Disability, Dec. } 31,1962}}{\text { Status of Applicant and Type of }}$

| Status | $\underset{\text { to- }}{\text { Registrants }}$ |  | Type of Disability | Active Cases as at Dec. 31, 1961 | TotalClosedCasesDec. 31,1961 | Active Cases as at Dec. 31, 1962 | TotalClosedCasesDec. 31,1962 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\left\lvert\, \begin{gathered} \text { Dec. } 31 \\ 1961 \end{gathered}\right.$ | $\begin{aligned} & \text { Dec. } 31, \\ & 1962 \end{aligned}$ |  |  |  |  |  |
|  | No. | No. |  | No. | No. | No. | No. |
| Employed. | 38,208 | 38,419 | Amputations | 85 | 2,349 | 45 | 2,377 |
| Unemployed | 728 | 415 | Neuro-muscular and skeletal system. | 828 | 14,282 | 447 | 14,643 |
| Receiving treatment, training or other services. | 982 | 500 | Total and partial loss of hearing or sight. | 168 | 3,342 | 96 | 3,406 |
|  |  |  | Neurological cases........... | 89 | 1,740 | 49 | ${ }_{4}^{1,777}$ |
| Rehabilitation not feasible... | 4,710 | 4,894 | Heart and vascular system.. | 162 | 4,442 12,099 | $\begin{array}{r}92 \\ 354 \\ \hline\end{array}$ | 4,585 12,398 |
| Closed on WVA | 2,733 | 3,233 | Respiratory ................. | 658 <br> 184 | 12,099 1,739 | 1 | 12,398 1,838 |
| Left Canada.... | 1,330 | 1,346 | Unclassified................... | 363 | 6,161 | 218 | 6,375 |
| Totals. | 48,691 | 48,807 | Totals | 2,537 | 46,154 | 1,408 | 47,399 |

Social Services.-The Social Service Division of the Department maintains a small corps of trained social workers who act primarily as consultants to other staff in dealing with problems of social adjustment affecting veterans and their dependants, but may give direct service in complex cases. They are especially concerned with maintaining liaison, for referral purposes, with welfare departments at all levels of government and with other philanthropic agencies. They assist in the work of the War Veterans Allowance District Authorities and other Departmental committees concerned with welfare matters and also supervise Branch services to dependants of members of the Armed Forces. On request by the Department of National Defence, the Branch furnishes reports on home circumstances of service personnel who encounter some domestic emergency. When the problem cannot be solved by counselling or referral to a source of help in the community, these reports assist the Department of National Defence in deciding whether compassionate leave, posting or discharge is indicated. During 1961 and 1962, the Social Service Division handled 12,405 and 9,160 requests, respectively, for service from all sources.

Assistance Fund (WVA). -The Assistance Fund (War Veterans Allowances) Regulations authorize supplementary payments to recipients under the War Veterans Allowance Act (pp.325-326) who are living in Canada and are in need and whose incomes are lower than the maximum allowed by that statute. Assistance may be given as a continuing monthly grant in accordance with a formula which includes costs of shelter, fuel, food, clothing, personal care and certain health needs, or as single grants to meet emergencies. The maximum annual supplement available is $\$ 288$ for single recipients and $\$ 360$ for recipients at the married rate of allowance.

The administration of the Fund is directed by the Assistance Fund Committee of which the Deputy Minister is chairman. Applications are dealt with and grants authorized by district authorities in local offices of the Department in accordance with general instructions issued by the Committee. The following statement summarizes activity of the Fund during 1961 and 1962. Since monthly grants may be continued from year to year, the number of persons assisted in a given period is greater than the number applying.


Older Veterans.-Details of the Department's work on behalf of the aging veteran population are given in the 1961 Year Book, pp. 294-296. Services and benefits for older veterans and their dependants are an increasing activity of the Department. The co-operation and goodwill of industrial and commercial organizations and the hiring policy of government agencies have resulted in the Corps of Commissionaires being able to maintain its position as the largest Canadian employer of older war veterans. Officials of the Welfare Services Branch of the Department continue to participate actively with agencies and committees dealing with the problems of older citizens and veterans.

Educational Assistance to Children of War Dead.-The Children of War Dead (Education Assistance) Act* is designed to help with the cost of post-secondary education for the children of those whose deaths have been attributed to military service. Eligible children may be assisted with the cost of training in Canada at any educational institution which requires high school graduation, matriculation or equivalent standing for admission. This includes not only universities and colleges, but also such facilities as hospital nursing schools and provincial technological institutes.

[^91]The maximum length of training is normally four academic years or 36 months whichever is the lesser. However, this may be extended if the required preparation for an occupation, such as medicine or law, takes longer and the student maintains a high academic standard. Assistance cannot be continued beyond the end of the academic year in which the student reaches age 25 except when training is extended beyond the normal four-year limit, in which case it can be continued, if necessary, to the end of the academic year in which the student reaches age 30 . Training must commence within 15 months after the student completes secondary school, except in special cases, but assisted training cannot commence after the student reaches age 25 . Fees are limited to $\$ 500$ per student for each academic year. An allowance of $\$ 25$ per month while in training is paid up to age 21. After that age, when payment under the Pension Act ceases, the allowance is increased to $\$ 79$ per month.

From its inception in July 1953 to Dec. 31, 1962, expenditures under this program totalled $\$ 2,998,994$ of which $\$ 1,451,360$ was spent in allowances and $\$ 1,547,634$ in fees. Applications approved totalled 2,923-1,440 for males and 1,483 for females. In addition to those who have completed or are in training as shown by Table 3, 323 had benefits deferred, 58 cases were suspended and 727 were discontinued for reasons other than the completion of training.
3.-Post-Secondary School and University Trainees under the Children of War Dead (Education Assistance) Act, by Sex and Type of Training, as at Dec. 31, 1962

| Course or Faculty | Completed |  | In Training |  | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Males | Females | Males | Females |  |
|  | No. | No. | No. | No. | No. |
| Post-Secondary School- |  |  |  |  |  |
| Business administration.... | 5 3 | 1 | 11 | 3 | 17 13 |
| Nursing (Reg. Nurse)...... | 1 | 255 | 1 | 122 | 379 |
| Secretarial... | - | 20 | - | 6 | 26 |
| Teaching. | 17 | 114 | 12 | 23 | 166 |
| Technology- |  |  |  |  |  |
| Chemical.. | 5 2 | - | 4 | 二 | 9 4 |
| Electronic.. | 6 | - | 10 | - | 16 |
| Laboratory | - | 8 | - | 6 | 14 |
| X-ray. | - |  | - | - | 7 |
| Other. | 9 | 2 | 11 | 1 | 23 |
| Other.. | 2 | 2 | - | 2 | 6 |
| Totals, Post-Secondary School. | 50 | 410 | 57 | 163 | 680 |
| University- |  |  |  |  |  |
| Arts and science. | 47 | 94 | 86 | 109 | 336 |
| Agriculture.... | 3 | 1 | 15 |  | 19 |
| Engineering and applied science. | 57 | 6 | 104 |  | 162 |
| Education...................... | 37 | 62 | 117 | 127 | 343 |
| Commerce and business administration. | 31 | 7 | 46 | 14 | 98 |
| Dentistry...... | 1 | 2 | 77 | 1 | 9 |
| Law....... | 7 | 2 | 37 | ${ }_{2}^{2}$ | 48 |
| Medicine. | 7 | 3 | 34 | 12 | 56 |
| Social work. | 3 | 13 | 4 | 23 | 43 21 |
| Theology.. | 4 | 1 | 16 | - | 21 |
| Totals, University | 197 | 183 | 466 | 289 | 1,135 |

Vetcraft.-A short history of Vetcraft is given in the 1959 Year Book, p. 293. Sheltered workshops are now operated at Toronto and Montreal, providing full-time employment for a number of veterans and widows; in addition, small assembly work is done in Winnipeg, Regina and Calgary, providing part-time home employment for other workers. Production for the year 1962, which was sold entirely to the Dominion Command of the Royal Canadian Legion, amounted to $6,909,077$ poppies and 68,830 memorial wreaths and crosses.

Veterans Insurance.-The Returned Soldiers' Insurance Act (SC 1920, c. 54, as amended) provided 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. The low medical standard enabled many veterans unable to meet the medical requirements of commercial life insurance companies to secure protection for their immediate dependants. This insurance was on life plans with no provision for endowment or term insurance. Applications were accepted from 1920 to 1923 and from 1928 to 1933. No policies have been issued since Aug. 31, 1933. The following statement is a summary of operations as at the end of 1962:-

| Item | Policies | Amount |
| :---: | :---: | :---: |
|  | No. | \$ |
| Policies Issued. | 48,319 | 109, 299, 500 |
| 1920 to 1924. | 33,577 | 75,728,500 |
| 1928 to 1933. | 14,742 | 33,571,000 |
| Decreases 1920 to Dec. 31, 1962. | 40,217 | 92, 103, 190 |
| Death claims... | 14,046 | 28,838, 318 |
| Surrenders... | 17,207 | 41, 864, 491 |
| Lapses, extended term insurance exp | 8,730 | 20,152,589 |
| Other terminations................ | 234 | 1,252,852 |
| Insurance in force Dec. 31, 1962. | 8,102 | 17, 196, 310 |

The Veterans Insurance Act (RSC 1952, c. 279, as amended) is the World War II counterpart of Returned Soldiers' Insurance and enabled 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. Also eligible were certain other groups of persons, such as merchant seamen eligible to receive a war service or a special bonus, firefighters, auxiliary service supervisors, special operators, members of the Women's Royal Naval Services and the South African Military Nursing Service and persons receiving pensions relating to the War. Those qualifying by active Korean service are eligible to apply for veterans insurance until Oct. 31, 1968.

This Act makes it possible for veterans, unable to meet the required medical standards of commercial life insurance companies, to obtain insurance at standard rates for the protection of their immediate dependants. A medical examination, at no expense to the veteran, is required only in special cases. There have been 98 applications declined out of a total of 53,216 received.

The first policy was issued on Apr. 1, 1945 and in the immediate postwar years an average of over 5,000 policies a year were issued, attaining a peak of 8,825 in the year ended Mar. 31, 1948; in subsequent years the average has been 2,500 .

The period of eligibility was originally limited to three years, i.e., to Feb. 20, 1948, and later increased to six years. In 1951 the period was again extended for an additional four years to Dec. 31, 1954, or ten years from discharge whichever was the later date. Section 12(3) of the War Service Grants Act provided that if a veteran of World War II had unused re-establishment credit sufficient to pay the initial premium, he or she might apply for Veterans Insurance up to Jan. 1, 1960, or fifteen years after discharge whichever was the later date. Purchase of veterans insurance through use of re-establishment credit was virtually the only way in which veterans residing outside of Canada used their credit benefits.

As a result of the termination of eligibility on Dec. 31, 1954, the only new applications for Veterans Insurance received from that date to Sept. 6, 1958 were those where premiums were being paid by the use of re-establishment credit. On Sept. 6, 1958 a further amendment to both the Veterans Insurance Act and the War Service Grants Act set a common cut-off date for the benefits of these Acts at Sept. 30, 1962. Also at this time, Sect. 10 of the Veterans Insurance Act was repealed. This Section limited the payment of the proceeds of a policy to a widow or child of the insured in the event of a pension under the Pension Act being paid to such persons on the insured's death. By the repeal of this Section, the
award of a pension under the Pension Act on the death of a policyholder would have no bearing on the amount of the policy proceeds. The effect of the repeal was a sharp increase in the number of applications. In the following six months, approximately 2,000 were received as compared with 300 for the preceding six months; since then applications have been received at the average rate of 150 a month to the end of 1962.

The most recent change in legislation was made on Feb. 15, 1962 when Royal Assent was given to a common cut-off date of Oct. 31, 1968 for eligibility under the Veterans Insurance Act, the War Service Grants Act and the Veterans Benefit Act (1954).

The amount of insurance on the life of any one person may not exceed $\$ 10,000$, issued in multiples of $\$ 500$. The insurance, which is non-participating and with no endowment feature, may be obtained on a 10 - 15- or 20-year payment life plan or provides for premium payments until the policy anniversary nearest the insured's age of 65 or 85 . Premiums may be paid in cash from a pension under the Pension Act, from Civil Service or Armed Forces salaries or from re-establishment credit. There is a disability provision under the policy which provides for a waiver of premiums to a policyholder in the event of a total and permanent non-pensionable disability; some 70 policies are being carried on this waiver-ofpremium basis.

There is a cash surrender value available to a policyholder who has kept premium payments up to date on a policy that has been in force for at least two years. No loans are permitted on a policy and the contract is not subject to liens or attachment by creditors. There is also an alternative reduced paid-up value and automatic extended term provision included in each policy contract.

A married veteran is required to name his spouse or child as beneficiary. Parents, brothers, sisters, grandchildren, etc., form a contingent beneficiary class. If the veteran is unmarried or a widower without children, a future spouse is named as preferred beneficiary with the same class of contingent beneficiaries required as those for a married person. In the event of the death of the insured without a spouse or child surviving and no named contingent beneficiary survives, the policy proceeds will be paid to the estate of the insured. In general, the amount payable to a beneficiary as an immediate death benefit may not exceed $\$ 2,000$, the remainder being paid as an annuity. There are several types of annuities available from a minimum of five years to a life annuity.

The following statement is a summary of operations as at Dec. 31, 1962.

| Item | Policies | Amount |
| :---: | :---: | :---: |
|  | No. | \$ |
| Policies issued at Dec. 31, 1962. | 51,395 | 166,348,500 |
| Decreases to Dec. 31, 1962. | 20,715 | 69, 617, 805 |
| Not taken. |  | 280,500 |
| Net lapses (lapses less reinstatements) | 2,028 | 7,954,000 |
| Surrenders ( 14,224 total 637 partials).. | 14,224 | 47,296,096 |
| Decreases to reduced paid-up insurance (420) | ... | 1,251,146 |
| Decreases by change of age (26). |  | 4,300 |
| Extended term insurance expiries. | 958 | 3, 122, 733 |
| Death claims received including unpaid claims awaiting proof.... | 3,489 | 9,709,030 |
| Insurance in force Dec. 31, 1962. | 30,680 | 96,730,695 |

4.-Death Claims Intimated to Dec. 31, 1962

| Year | Returned Soldiers Insurance |  | Veterans Insurance |  |
| :---: | :---: | :---: | :---: | :---: |
|  | No. | \$ | No. | \$ |
| 1921-57.. | 11,469 | 23, 819,439 | 1,576 | 4,419,236 |
| 1958.. | 486 | 902,324 | 254 | 687, 145 |
| 1959. | 436 | 835,327 | 283 | 806,546 |
| 1960. | 462 | 928, 255 | 357 | 1,096,010 |
| 1961. | 422 | 867, 230 | 364 | 1, 947, 148 |
| 1962. | 435 | 839,709 | 394 | 1,185,463 |

## Section 3.-Land Settlement and Home Construction

The Veterans' Land Act provides for the settlement of veterans of World War II and the Special (Korean) Force under five broad categories: farming as a full-time occupation; part-time farming in rural or semi-rural areas to supplement income from other employment; commercial fishing; land settlement, generally in pioneer areas, under agreements between the Federal Government and the provinces; and home building on city-size lots by veterans who have been approved for a loan under the National Housing Act and who act as their own contractors.

To keep pace with increases in the cost of land and house construction, and to provide a source of credit to veterans settled on small family farms, a number of important amendments of a financial nature were made to the Act in April 1962. These included provisions which increased the total assistance available, authorized additional loans under Part III to part-time farmers already settled, and extended the maximum repayment period to a uniform term of 30 years. Another major amendment provided authority for the Director to enter into a group life insurance contract on behalf of veterans desiring mortgage insurance coverage relative to their indebtedness to the Director.

The financial assistance available under Part II to veterans for the construction of their own homes on city-size lots was increased from $\$ 10,000$ to $\$ 12,000$ and the minimum initial equity required of each veteran was raised from $\$ 800$ to $\$ 1,000$. The ceiling on loans under Part III to veterans being settled as part-time farmers was increased from $\$ 3,000$ to $\$ 4,800$. To obtain a loan of this amount, a veteran must contribute in cash or equity, or both, the sum of $\$ 1,200$ calculated on the basis of $\$ 1$ for each $\$ 4$ borrowed; previously, the ratio was $\$ 1$ to $\$ 3$. These two changes provide a maximum expenditure under Parts I and III of $\$ 12,000$, an increase of $\$ 2,000$ over the former limit.

Prior to the amendments, Part III loans to part-time farming veterans were available only at the time of their establishment. It was found that this prohibition against the approval of additional financial assistance, for home improvement purposes subsequent to settlement, created problems for both the veterans and the Administration. As a result of the legislative change made in this connection, Part III loans of up to $\$ 4,800$ can now be made to part-time farming veterans on the same basis and terms as apply to such loans made to veterans being established.

The major amendments to the Act in 1959 provided that additional loans under Part III to full-time farming veterans could be made only where the funds were required for the development and proper operation of an economic farm unit. Although this provision was sound in principle, and a substantial number of loans have been made, it nevertheless served to preclude the extension of credit to veterans settled on small family farms. Such a unit is considered to be one which provides the owner and his family with an acceptable standard of living but which is not capable of producing a large enough gross and net income to be classed as an economic or commercial farm unit.

In recognition of the place which small family farms have in the agricultural industry of the country, and of the financial requirements of their operators, one of the amendments made in 1962 provided for fully repayable, 5 -p.c. loans under Part III of up to $\$ 6,000$. The total assistance available to veterans established on this type of unit is now $\$ 12,000$, or 75 p.c. of the market value of the land, whichever is the lesser. This additional credit may be used for the purpose of acquiring land, effecting permanent improvements to land and buildings, the purchase of basic herd livestock, and the payment of debts that relate to or were reasonably incurred in the operation of the farm.

As a result of the above-mentioned financial changes and the reduction effected in 1961 of the minimum acreage requirement for part-time farming settlement down to one half of an acre, there was a further substantial increase in loaning operations during 1962. Financial assistance approved on behalf of veterans during the year totalled $\$ 41,070,549$ as compared with $\$ 32,712,389$ in 1961 . There were 5,892 loans made during 1962, an increase of 1,842 over the number made in the preceding year.

From the inception of the Act to the end of 1962, 92,421 veterans have received financial assistance and more than $\$ 558,000,000$ expended for this purpose. There were 52,649 active accounts under administration at the end of 1962, including accounts of 375 Indian veterans settled on Indian reserves which are administered by the Indian Affairs Branch of the Department of Citizenship and Immigration. A total of 43,524 veterans, including 1,234 Indian veterans, have earned their ten-year conditional grants amounting to more than $\$ 80,000,000$. Over $\$ 250,000,000$ has been repaid. In addition to the principal repayments, more than $\$ 70,000,000$ has been received in interest, of which almost $\$ 6,000,000$ was received in 1962. The active accounts under administration have a remaining indebtedness of nearly $\$ 225,000,000$.

To the end of 1962 , there were 30,500 houses completed and a further 1,200 were in the process of construction. There were 1,256 houses started during the year and 1,216 completed. A further 2,181 veterans received approval to effect additions or improvements to their homes and other buildings in 1962 as compared with 909 in 1961.

During the year, veterans continued to maintain a very favourable repayment record. The amount collected and applied to the Consolidated Revenue Fund from current active accounts represented 103.9 p.c. of the total due and owing on 51,280 repayable contracts. There have been very few instances where it has been necessary to rescind a contract; during 1962 there were 15 such cases bringing the total since inception of operations to only 230.

A major factor contributing to the favourable repayment record of VLA settlers is that more than 24,000 veterans have adopted one of the various pre-arranged payment plans made available to them. In addition, 1,030 Share-of-Crop Agreements were in effect in the Prairie Provinces in 1962, almost 200 more than in 1961. This increase was the result of an amendment made during the year to the Veterans Land Regulations, extending the previous provisions, which related only to the delivery of wheat by veterans settled in the spring wheat areas of the Prairie Provinces, to the delivery of oats, barley, flax, rye and rapeseed.

## 5.-Summary of Settlement and Expenditures under the Veterans' Land Act, as at Dec. 31, 1962

| Item | Full-Time Farming | Small Holdings | Commercial Fishing | Provincial Lands | Federal Lands | Indian Reserves | CitySize Lots | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Approved for financial assistance............. No. Amount of public funds expended............... \$ | 29,703 | 50,512 $302,424,619$ | 1,221 $5,434,452$ | 4,907 $10,766,524$ | 530 $1,135,684$ | 1,650 $3,674,704$ | $\left.\begin{array}{r} 3,898 \\ 33,684,516 \end{array} \right\rvert\,$ | 92,421 $8,792,519$ |
| Approximate average expenditure per approval. | 6,718 | 5,912 | 4,451 | 2,194 | 2,143 | 2,227 | 8,641 | 5,960 |
| Total conditional grants earned......... No. | 19,671 | 18,085 | 666 | 3,674 | 194 | 1,234 | - | 43,524 |
| A verage amount of grants earned.......... \$ | 2,066 | 1,494 | 1,831 | 2,294 | 2,340 | 2,275 | - | 1,998 |
| Grants earned, title released............... . No. | 8,434 | 8,667 | 301 | 3,674 | 194 | 1,234 |  | 22,504 |

6.-Summary of House Construction under the Veterans' Land Act, as at Dec. 31, 1962

| Item | Full-Time Farming | Small Holdings | Commercial Fishing | Provincial Lands | Federal Lands | $\left\|\begin{array}{c} \text { City-Size } \\ \text { Lots } \end{array}\right\|$ | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. | No. |
| Houses completed (from 1942)........ | 2,053 | 22,890 | 301 | 1,415 | 126 | 3,714 | 30,499 |
| Houses under construction............. | $\begin{array}{r}2,74 \\ \hline 129\end{array}$ | 22,897 | 5 | 1, 5 | 3 1 | 176 | 1,200 731 |
| Contracts let (work not yet started).. | 129 | 510 | 6 | 85 |  |  | 731 |
| Net Approvals for New Housing. . | 2,256 | 24,337 | 312 | 1,505 | 130 | 3,890 | 32,430 |

## Section 4.-Veterans' Bureau

The main duties of the Veterans' Bureau, which is a branch of the Department of Veterans Affairs, are to assist former members of the Armed Forces and their dependants, and former members of the various auxiliary organizations, such as merchant seamen, firefighters and others, in preparing and presenting pension claims to the Canadian Pension Commission.

Now in its thirty-second year of operation, the Veterans' Bureau is headed at Ottawa by an officer known as the Chief Pensions Advocate, who is assisted by pensions advocates, most of whom are lawyers, located in all districts in Canada in which offices of the Department are maintained, and at the district office in London, England.

The pensions advocates also appear as counsel for applicants before the Appeal Boards of the Commission, and, in addition, they advise pensioners and applicants upon any provision of the Pension Act or phase of pension law or administration that may have a bearing on the applicant's pension claim. No charge is made for the services of the Bureau.

During the year ended Dec. 31, 1962, the Veterans' Bureau submitted a total of 7,095 claims to the Canadian Pension Commission for adjudication. This number included 1,322 claims presented to Appeal Boards of the Canadian Pension Commission of which 51 p.c. were wholly or partially granted. During the same year, the Bureau submitted 1,298 straight entitlement claims to the Canadian Pension Commission, based on service in World War I and peacetime, of which 192 were wholly or partially granted. However, with respect to claims based on service in World War II and Korea, out of a total of 3,357 presented, 1,153 were wholly or partially granted. In addition, 1,118 miscellaneous claims were submitted to the Canadian Pension Commission (including applications for leave to re-open following an Appeal Board hearing, claims for higher degree of aggravation, increased assessment, retroactive awards, compassionate pension awards, etc.), of which 493 were wholly or partially granted.

## Section 5.-Veterans Pensions

Canadian Pension Commission.-The Canadian Pension Commission is a statutory body charged with the administration of the Pension Act and the Civilian War Pensions and Allowances Act. The members of the Commission are appointed by the Governor in Council who may also impose upon the Commission duties in respect of any grants in the nature of pensions, etc., made under any statute other than the Pension Act. It reports to Parliament through the Minister of Veterans Affairs.

It is the responsibility of the Commission to adjudicate on claims for injury or disease resulting in disability or death, incurred during service with the Canadian Navy, Army or Air Force during war or peacetime. The Commission may also supplement, 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 may pay pension at Canadian rates in such cases where the claim has been rejected by the government of the country concerned. The Commission's representatives, called pension medical examiners, are located in most of the district offices of the Department of Veterans Affairs across the country.

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 has not been amended since 1961. The major amendments at that time, which resulted in increased benefits, are summarized in the 1962 Year Book, p. 287.

Disability pension is payable to former members of the Armed Forces who suffered "the loss or lessening of the power to will and to do any normal mental or physical act" as a result of military service in the Canadian Navy, Army or Air Force since the com-
mencement of World War I. The place of residence and economic circumstances of the recipient have no bearing on the amount of pension that may be paid, pension being payable in accordance with the degree of disability found to exist on medical examination from time to time. Similarly, pension to a widow whose husband's death was incurred on or attributable to service is not affected by her place of residence or economic situation.

The annual rates for a 100-p.c. disability for all ranks up to and including that of Colonel and equivalent rank are:-

| Pensioner. | 2,160 |
| :---: | :---: |
| Wife. | 720 |
| One child.. | 324 |
| Two childr | 564 |
| Each addit | 192 |

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 $\$ 1,800$ depending on the degree of attendance required, is paid in addition to pension. While 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....................................................................................... 1,656
One child.................................................................................... 648
Two children...................................................................................... 1,128
Each additional child........................................................................ 384
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 World War II war effort 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.
7.-Pensions in Force under the Pension Act, as at Dec. 31, 1962

| Service | Disability |  | Dependant |  | Disability and Dependant |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Pensions in Force | Liability | Pensions in Force | Liability | Pensions in Force | Liability |
|  | No. | \$ | No. | \$ | No. | \$ |
| World War I. . | 41,485 | 38,876,610 | 14,465 | 23,084,552 | 55,950 | 61,961,162 |
| World War II. | 106,361 | 85,006,464 | 16,773 | 22,841,631 | 123,134 | 107,848, 095 |
| Peacetime.. | 1,628 | 1,035,295 | 545 | 1,048,521 | 2,173 | 2,083,816 |
| Special Force.... | 1,738 | 1,191,275 | 179 | 274,248 | 1,917 | 1,465,523 |
| Totals.. | 151,212 | 126,109,644 | 31,962 | 47,248,952 | 183,174 | 173,358,596 |

Over 91 p.c. of the amount paid in pensions is distributed in Canada and the balance to pensioners residing in other parts of the world. While the total number of awards in force is 183,174 , the number of persons on whose behalf pension is payable under the Pension Act is approximately one-half million. These include disability pensioners, their wives and children, and their dependent parents; widows and their children; orphan children; and dependent parents of deceased members of the Forces.

The total number of World War I disability and dependant pensions in force at Dec. 31, 1961 was 58,339 and for World War II, 122,904. During 1962, World War I pensions decreased by 2,389 and World War II pensions increased by 230; 203 new awards of disability pension were authorized in respect of World War I veterans and 2,251 in respect of World War II veterans.

## Section 6.-War Veterans Allowances and Civilian War Allowances

War Veterans Allowance Board.-The War Veterans Allowance Board is a statutory body that administers the War Veterans Allowance Act and reports to Parliament through the Minister of Veterans Affairs.* The Board, consisting of eight members, including a chairman and a deputy chairman, appointed by the Governor in Council, is a quasi-judicial body and is independent as far as its decisions are concerned. The Minister of Veterans Affairs is charged with the administration of the Act.

During the past year, the Board was given the responsibility for administering Part XI of the Civilian War Pensions and Allowances Act, which authorizes payment of allowances to certain groups of civilians who performed meritorious service in a theatre of actual war during either World War I or World War II. The provisions of this Part are similar to those of the War Veterans Allowance Act.

War Veterans Allowance Act.-The War Veterans Allowance Act came into force on Sept. 1, 1930, its purpose being to aid war veterans who, because of the hardships of service, had become pre-aged and no longer able to hold their places on the labour market. The administration of the Act was entrusted to what was then the War Veterans Allowance Committee, later re-designated the War Veterans Allowance Board.

The Act has been amended 11 times since 1930, its scope broadened and the allowance rates and income ceilings increased from time to time. By the amendments of 1950, the Act established District Authorities in the regional districts of the Department of Veterans Affairs, granting to them the full and unrestricted power and authority and exclusive jurisdiction to deal with and adjudicate upon all matters and questions arising under the Act relating to the award, increase, decrease, suspension or cancellation of any allowance awarded or paid under the Act. 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. A District Authority consists of not less than four and not more than seven persons, its strength being related to the size of district and the volume of matters to be handled. There are 19 District Authorities, including the Foreign Countries District Authority located in Ottawa. An application for an allowance must be made to the District Authority of the regional district in which the applicant resides.

The War Veterans Allowance Board acts as an appeal court for applicants and recipients aggrieved by the decision of the District Authority, and the Board may, on its own motion, review and alter or reverse any adjudication of a District Authority. The Board is also responsible for guiding and instructing the District Authorities in the interpretation of policy, and for advising the Minister with respect to regulations governing the procedure to be followed in matters coming before District Authorities for adjudication.

During 1962, the Board reviewed 7,305 recipients' cases, comprising referrals by District Authorities and Treasury Officers, rulings on service eligibility and guidance on policy interpretation. The Board conceded service eligibility for 433 applicants under the

[^92]War Veterans Allowance Act from allied veterans and for 745 applicants under the Civilian War Pensions and Allowances Act, Part XI. The Board also adjudicated 871 appeals during the year, of which 587 were disallowed and 242 allowed, the remainder being deferred or withdrawn by the appellants. The Board must also adjudicate each case where the widow was not residing with her spouse at the time of his death. Of these applications, 132 were approved and 37 declined.

The number of veterans and others in receipt of allowances at the end of the years 1956-62, together with the amounts paid, were:-

| At Dec. 31- | Veterans in Receipt of Allowances | Dependants in Receipt of Allowances | Total in Receipt of Allowances | Expenditure |
| :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | \$ |
| 1956. | 39,543 | 15,193 | 54,736 | 40,853,773 |
| 1957. | 41,820 | 16,601 | 58,421 | 45, 187,400 |
| 1958. | 45,466 | 18,659 | 64,125 | 53, 970,728 |
| 1959. | 47,393 | 20,141 | 67,534 | 56,927, 614 |
| 1960. | 48,521 | 21,421 | 69,942 | 58, 207, 130 |
| 1961. | 51,537 | 23,373 | 74,910 | 69, 825, 747 |
| 1962. | 54,168 | 25,302 | 79,470 | 81,176,162 |

During 1962, the War Veterans Allowance District Authorities considered 13,520 applications, approving 9,602 and declining 3,918. To ensure continued eligibility of existing War Veterans Allowance recipients, 37,918 recipients were interviewed and their circumstances checked. A further 35,407 cases were reviewed by checking their declared assets and income.

Part XI of the Civilian War Pensions and Allowances Act.-Part XI of the Civilian War Pensions and Allowances Act, which became effective on Feb. 23, 1962, provides allowances to certain civilians with service in a theatre of actual war during either World War I or World War II. These civilians include Canadian merchant seamen of either war who served at least six months at sea with one trip through dangerous waters; non-Canadians with similar service on Canadian merchant vessels in either war; Canadian members of the Voluntary Aid Detachment of the British Red Cross of World War I with service on the Continent of Europe or service in Britain for at least 365 days prior to Nov. 12, 1918; and the following civilians of World War II with six months overseas serviceCanadian welfare workers, Canadian firefighters, Canadian transatlantic air crew and personnel of the Newfoundland Overseas Forestry Unit. A pensioner under Parts I to X of the Act is also eligible.

The number of recipients under this Act at Dec. 31, 1962 was 420 , which included 334 civilians, 85 widows and one orphan, with an annual liability of $\$ 461,679$. The restrictions governing income, personal property limits and real property and the monthly rates of allowances are the same as those provided in the War Veterans Allowance Act (see p. 289 of the 1962 Year Book).

## Section 7.-Commonwealth War Graves Commission

The Imperial War Graves Commission was incorporated on May 21, 1917, under the Royal Charter granted by His Majesty in Council on a recommendation made by the Imperial War Conference in April of that year. The name was changed by a supplemental Royal Charter on Apr. 1, 1960, to the Commonwealth War Graves Commission. The Governments of Britain, Canada, Australia, New Zealand, South Africa, India and Pakistan are members of the Commission. South Africa, after becoming a republic, requested and obtained permission from the other Commonwealth Governments to remain a member of the Commission and is represented by an Ambassador in London. 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.

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. In many of the cemeteries and plots a central feature is the Cross of Sacrifice or the Great Stone of Remembrance.

The area of responsibility of the Canadian Agency is the Continent of North America but it has also certain duties of inspection in Argentina, the Bahamas, Barbados, Bermuda, Brazil, British Guiana, British Honduras, Chile, Costa Rica, Cuba, Falkland Islands, French West Indies, Guatemala, Hawaiian Islands, Jamaica, Leeward Islands, Netherlands Antilles, Panama Canal Zone, Peru, Puerto Rico, Trinidad, Uruguay and Windward Islands.

In North America the Agency has commemorated 18,944 Commonwealth war dead in almost 3,000 cemeteries. Approximately 4,100 servicemen of both Wars, missing in operations while based in North America, are commemorated on memorials erected at Victoria, B.C., Halifax, N.S., and Ottawa, Ont. In Oakwood Cemetery, Montgomery, Alabama, the Agency has erected the only Cross of Sacrifice in the United States.

The Agency was instrumental in bringing together officials of the Netherlands War Graves Committee, the Royal Canadian Legion and the Department of Veterans Affairs for the purpose of planning a pilgrimage to enable relatives from Canada to visit the graves of Canadian war dead in the Netherlands.

## CHAPTER VII.-EDUCATION AND RESEARCH

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> The interpretation of the symbols used in the tables throughout the Year Book will be found facing $p .1$ of this volume.

## PART I.-FORMAL EDUCATION*

Formal education has become one of the major concerns of government and society in Canada and is now recognized as the key to both individual and national prosperity. Machines and automated programs are performing an ever-increasing number of routine, repetitive tasks, thus reducing the job opportunities for untrained workers and at the same time opening up whole new fields for highly skilled personnel. As a result, education authorities face the dual task of building and staffing schools and universities at a hitherto unprecedented rate and of adjusting curricula to fit in with a rapidly changing state of society.

The absolute and relative growth of formal education in Canada is indicated by the fact that between 1948 and 1961 average daily attendance at public elementary and secondary schools doubled while the country's population increased by only 42.5 p.c. during the same period. Over this period, total expenditure on formal and vocational education and training increased by 382 p.c. and its proportion of the gross national product increased from 2.5 p.c. to 4.9 p.c. University enrolments increased from 86,800 in 1957 to over 141,400 in 1962 and the sharpest increases are still to come as the population bulge resulting from the great increase in births in the immediate postwar years is beginning to reach university-age level.

[^93]
## Section 1.-Administration and Organization of Education in Canada

With certain exceptions, laws relating to formal education in Canada are a provincial, rather than a federal, prerogative. As a result, each province has organized a system of education to meet its own needs and, although they have much in common, no two systems are identical. Quebec and Newfoundland exhibit the greatest divergence from the general pattern, the former because of its French and Roman Catholic background and the latter because of the continuance of a system developed when the province was an independent British Colony.

To meet their responsibilities in the field of education each of the ten provinces has a government Department of Education; the first was organized in Quebec in 1846 and the last in Newfoundland in 1920. Except in the Province of Quebec, the Department is headed by a provincial Cabinet member who serves as Minister of Education. The Minister is appointed by the Lieutenant-Governor on the recommendation of the Premier from among elected members of the Provincial Legislature. In Quebec, the senior professional educationist, the Superintendent of Education, is appointed by the LieutenantGovernor in Council and remains in office during good behaviour or unless the Legislative Council and Legislative Assembly both request his withdrawal. He is President of the Council of Public Instruction, which is composed of a Roman Catholic Committee and a Protestant Committee. The Department of Education deals with matters of administration, finance and inspection and the Lieutenant-Governor in Council has authority to approve or disallow regulations prepared by the two Committees. A Quebec Royal Commission has recommended a reorganization of the administration of education to more closely resemble that in the other provinces.

Elementary and Secondary Schools.-Formal education at the elementary and secondary levels is administered from the provincial Departments of Education which operate under provincial school law or laws, issue regulations, and provide services to public schools throughout the province (including separate schools in those provinces where such schools exist). In addition to administering various grants, the provincial departments, among other things: operate teacher-training colleges or arrange for the universities to offer preparatory education courses; issue teachers' certificates; issue courses of study for the elementary-secondary schools; prescribe textbooks or lists of books; employ school inspectors or superintendents; conduct end-of-the-year examinations for the final year or two of high school; and issue certificates to successful candidates. In some provinces other departments of government may have responsibilities for special schools or courses. For example, in Quebec the Department of Education, its services and financial contributions come under the jurisdiction of the Department of Youth and a few schools are maintained by other departments, such as Schools of Agriculture, a School of Fisheries and a Forestry Station which operates three schools.

Provision for separate schools for Roman Catholics is handled differently in different provinces. In Ontario, Saskatchewan and Alberta (as well as in the Yukon and Northwest Territories), the first school established in a community is known as the public school, which is open to all children in the community. The school law provides, however, that a religious minority (which in these provinces is usually Roman Catholic) may establish its own school board and school. Such schools are referred to as separate schools. Local residents may elect which school they choose to support through taxes, their choice generally being deter mined by their religion. Both public and separate schools come under the jurisdiction of
the provincial Department of Education and both receive provincial grants. In Ontario, but not in the other two provinces, legal provision for separate schools does not extend beyond Grade 10.

In the three Maritime Provinces and Manitoba there is no legal provision for separate schools. However, within the public school systems of these provinces, there are Englishlanguage and French-language Roman Catholic schools in areas that have large English or French Roman Catholic populations, such as St. Boniface in Manitoba and Edmundston in New Brunswick. On the other hand, the public school system of British Columbia makes no provision for any type of denominational schools. Any such schools in this province must operate as parochial or private schools.

In Quebec, public elementary and secondary schools are controlled by the Roman Catholic and Protestant Committees of the Council of Public Instruction. In this province, Catholic and Protestant school systems exist side by side from the Department down, each relatively independent of the other. To some extent, the Catholic system follows the French tradition of education while the Protestant system follows the English tradition and is very similar to the Ontario system. Private or independent schools play a much more prominent role in Quebec than in other provinces. Chief among these are the classical colleges, which number nearly a hundred. Affiliated to the French-language universities (Laval, Montreal and Sherbrooke), they offer an eight-year course, entered after completion of elementary school and leading in two four-year stages, secondary and college, to the baccalaureate degree.

Newfoundland might be said to have a public denominational school system, Each of the five major religious denominations in the province-Roman Catholic, Anglican, United Church, Salvation Army and Pentecostal Assemblies-operates its own schools under a superintendent of education who is responsible to the Deputy Minister of Education. The Minister of Education, the Deputy Minister and the five superintendents form a Council of Education which decides on policy and co-ordinates the various parts of the system. One curriculum serves the schools of all denominations. Teachers receive common training in the Memorial University of Newfoundland, a provincial institution.

Local School Organization.-Within the framework of each provincial jurisdiction and regulation, public education is administered by local education authorities operating under a school Act. These school boards or boards of education are responsible for establishing and maintaining schools, employing qualified teachers, providing pupil transportation where needed, and budgeting for the money required to operate the schools, which is raised through local taxation. Local boards may be elected, appointed, or partly elected and partly appointed. They differ in number of members from three in the case of most small rural units to five, seven, or even twelve or more for urban units. Where larger units in rural areas have been established, there are central boards for the units representing the component districts, although there may be local boards retaining some custodial and advisory duties.

The larger unit, replacing rural districts which were usually about four miles in extent, has been introduced by legislation in several provinces and made optional in others in an effort to provide better school facilities and greater equalization of costs and to mitigate the problems caused by a chronic shortage of teachers. Larger units have been established by legislation in Alberta and British Columbia and by Acts with provision for local option in Saskatchewan and the Maritime Provinces. Southern Ontario has been gradually organizing its rural areas into township and county units; Manitoba has recently introduced legislation leading to the formation of larger units of administration for secondary schools;
and Protestant Quebec has been essentially organized into larger units. In Roman Catholic Quebec, one board of commissioners administers all Roman Catholic schools in a school municipality, whether rural or urban, while secondary education is being consolidated more and more into larger central secondary schools. In that province, there have always been more private residential schools established by religious groups than elsewhere.

Higher Education.-The jurisdiction of provincial Departments of Education embraces only the elementary and secondary levels, which provide for the education of youths up to age 17 or 18 . The extension of general education beyond the secondary to the college or university level is referred to as "higher" education, at which point the student is offered a wide diversity of courses in the arts, sciences, humanities and professions. The organization as well as the financing of higher education is noticeably different from that of elementary and secondary education.

Canadian universities are English-language, French-language or bilingual. The French-language institutions are mostly church-related and have been patterned after those of some European countries. Until recently, they stressed the classics as preparation for the professions but they are changing and an increasing emphasis is being placed on pure and applied science. The older English-language universities stemmed from a variety of needs and desires on the part of the provincial governments, churches, and settlers from England, Scotland and elsewhere who also wished to establish institutions similar to those with which they were familiar.

In Eastern Canada, institutions of higher learning have tended to develop at different periods in response to these needs. The result is that a variety of small and middle-size degree-granting colleges and universities exist today. This is especially true in the Maritime Provinces. In Western Canada, on the other hand, the policy has been to establish one large provincial university with sole degree-granting powers within the province. Whether this policy of one degree-granting institution for the province will suffice in the face of the increasing demand for higher education is a matter of speculation. There is already some pressure in British Columbia for the establishment of a second university with degree-conferring powers. In Alberta and Saskatchewan, branch campuses of the provincial universities are in operation, and legislation for the establishment of junior colleges has been passed in British Columbia and Alberta.

The increasing enrolment, resulting partly from an increase in the university-age population and partly from the higher proportion of young persons seeking university training, has caused an unprecedented expansion of facilities as well as an extension of colleges into universities and the establishment of new institutions. Most of the universities have conducted financial campaigns for expansion at some time during the past ten years and indications are that many more such campaigns must be undertaken in the near future. Despite expansion and modernization, there are still some old and crowded buildings in use which contrast sharply with the new well-planned, roomy, permanent structures on spacious campuses. All Canadian universities are expanding, whether they are located in the cramped heart of a city, have begun again in suburban areas or were fortunate enough to have ample room on their first campus sites.

Federal Involvement in Education.-Although formal education at the elementary and secondary levels is the prerogative of the provinces, the Federal Government is responsible for the education of: Indians on reservations within the provinces; Indians, Eskimos and whites in the Yukon and Northwest Territories; families of members of the Armed Services in Canada and overseas; and inmates of the penitentiaries. Teachers in
these schools and institutions are members of the Civil Service. They teach under a school law and regulations similar to those in effect in the province concerned and the Federal Government utilizes provincial facilities whenever possible.

The Government of Canada contributes to the construction and maintenance of vocational training facilities, recognizing vocational training as an important factor in the economic development of the country. Such contributions affect practically every phase of publicly sponsored vocational training in Canada, although the degree of the contribution varies. A great impetus to such training has resulted from the passing of the Technical and Vocational Training Assistance Act (SC 1960-61, c. 6) which, among other things, provides for direct federal financial contribution of 75 p.c. of the total amount expended by a province on the building and equipping of vocational training facilities up to the fall of 1963.*

Higher education, to a far greater extent than elementary and secondary education, is free from government regulation or control, although the Federal Government through its Department of National Defence does operate three service colleges for the training of officers for Canada's Armed Services. The Federal Government contributes to higher education by means of direct grants to universities for current operating expenditures and capital projects through its agency, the Canada Council, and by providing scholarships and grants in aid of research to universities and individuals through such federal departments and agencies as the Canada Council, the National Research Council, the Defence Research Board, the Department of National Health and Welfare and the Department of Agriculture. In 1959-60 the Federal Government contributed 24 p.c. of the universities' current operating income (including research) and, over the four-year period 1956-59, about 8 p.c. of the universities' income for capital purposes.

## Section 2.-Interesting Aspects of Education

New Techniques in Education.-Rapid growth in school enrolments, and difficulty in meeting staff requirements and in financing school construction and upkeep, has stimulated a searching inquiry into traditional methods of school administration and teaching. Research is being undertaken to determine whether new techniques may not effect economies in the operation of schools and at the same time speed up the learning process. In particular, standard classroom size and a rigid grade system of promotion are under close scrutiny. Experimental work continues in pupil streaming, in the elimination or grouping of certain grades with more opportunity for pupils to progress at their own speeds, in the building of schools with flexible classrooms, and in team teaching, which may involve such a hierarchy of staff as head teacher to co-ordinate the whole effort, subject specialists, junior or assistant teachers, and clerical or technical assistants to keep attendance and other records, set up laboratory equipment, operate projectors and generally look after the various forms of visual aid, etc.

This experimentation in new techniques is stimulated by new media for teaching, such as educational television, language laboratories, and teaching machines, which are just beginning to have a significant impact on education in Canada. Some schools have been experimenting with television for spot lessons in certain classes for several years, but the first province-wide application of television for instructional purposes in a public school system occurred in 1962 when Nova Scotia introduced a series of television lessons throughout the full school year in Grade 11 mathematics and science. Plans are to extend the program to include French in the school year 1963-64. About the same time two universities in Montreal introduced a number of television courses for credit, some in English and some in French. Television has the advantage of bringing expert instruction to a much wider range of students and to larger classes.

[^94]The laboratory method of individual instruction in foreign languages, using electronic equipment, is used in a number of universities and in several of the larger secondary school systems. Its extension on a wider scale is limited in part by the relatively high initial cost of the equipment. The advent of programmed instruction, using programmed texts or "teaching machines", is one of the most recent innovations in teaching techniques. Programmed instruction lends itself to individual progress according to the pupil's ability and many informed observers believe that this method of instruction will relieve the teacher of some of the mechanical aspects of teaching and free him for much more constructive work.

Education Costs to Students.-In all provinces educational systems are based on the legal doctrine that schooling shall be free and compulsory during the child's formative years. With minor provincial differences, all children must attend school between the ages of six or seven and fifteen or sixteen. With few exceptions, no fees are charged for attendance at a public elementary or secondary school in the locality where the child resides. The cost of education at these levels is met mainly through taxation levied by the municipalities on property holders, and through provincial grants.

At the university level, however, students are charged an annual fee varying from $\$ 200$ to $\$ 700$ depending upon the institution and the faculty. The cost of text books and students' supplies must be added to tuition fees, so that total education costs, quite apart from living costs, impose a considerable financial burden on many students. Scholarships, fellowships and bursaries help to offset these costs for many students and the number of these is being increased annually.

A survey was made of university and college students enrolled in selected faculties for the academic year 1961-62, to analyse expenditures and sources of income. For single male undergraduates living at home, total expenditure during the college year ranged from $\$ 1,060$ to $\$ 1,652$, depending on the faculty; those who were not living at home spent between $\$ 1,406$ and $\$ 2,231$. Expenditures for single female undergraduates were slightly lower than those for males, and married undergraduates had expenditures ranging from $\$ 2,758$ for those in Education to $\$ 3,929$ for those in Dentistry. Male unmarried students at the graduate level had average expenditures of $\$ 1,598$ for those living at home and $\$ 2,035$ for those away from home, with the corresponding figures for females again slightly lower. Married male graduate students spent on the average $\$ 3,968$ during the college year.

National Organizations in Canadian Education.-A number of national organizations are active in the field of education.

The Canadian Education Association (CEA) is an organization through which the provincial Departments of Education can make known official education policy. It was founded in 1892 as the Dominion Educational Association, later became the Canadian Education Association, the Canada and Newfoundland Education Association, and in 1946 again became the Canadian Education Association. The present constitution provides for a majority representation of the executive from the provincial Departments, with membership open to many other educators. The CEA employs several full-time officials, including an Executive Secretary and a Research Officer. It issues a Newsletter monthly throughout the school year and publishes Canadian Education and Research Digest. Annual conventions are held in different cities each year.

The Canadian Teachers' Federation (CTF) was founded in 1919 as a federation of the provincial teachers' associations. It has a full-time staff and engages in many activities related not only to the welfare of teachers but to the betterment of education in general at the elementary and secondary levels. It undertakes research projects related to teaching methods and the learning process, and encourages and co-ordinates research projects initiated by the provincial associations. It publishes regular bulletins and separate articles dealing with various aspects of education.

The Canadian Universities Foundation (CUF), as the executive arm of the National Conference of Canadian Universities and Colleges, is a national organization which serves higher education in Canada in much the same way as the Canadian Education Association serves education at the elementary and secondary levels. With a growing full-time staff, which includes an Executive Director, a Director of Research and a librarian, it produces the bilingual quarterly bulletin University Affairs, as well as individual reports and series of reports dealing with higher education in this country. It administers Federal Government grants to universities and represents the universities generally in all dealings with government.

Other groups serving education at the national level are: the Canadian Association for Adult Education; the Canadian School Trustees' Association; the Canadian Association of School Superintendents and Inspectors; the Canadian Association of University Teachers; the Canadian College of Teachers; L'Association Canadienne des Educateurs de Langue française; the Canadian Home and School and Parent-Teacher Federation; the Canadian Vocational Education Association; le Fédération des collèges classiques; the Canadian Council for Research in Education; the Social Science Research Council of Canada; and the Humanities Research Council of Canada. This list is not exhaustive but is indicative of the types of organizations whose primary concern is education. In addition, many other national organizations, such as the Boy Scouts Association and the Canadian Junior Red Cross may be said to have a peripheral interest in formal education.

International Activities in Education.-Besides expanding its own educational resources, Canada is providing some assistance to under-developed countries which are attempting to expand their educational facilities. This takes two forms: welcoming scholars from abroad to Canadian universities (some 8,000 were enrolled in the academic year 1961-62); and making it possible for Canadian teachers and other educators to accept assignments in the newly emerging countries as advisers for periods ranging from a few months to one or more years.

Several organizations are facilitating this inflow of students from all over the world into Canadian universities, as well as the increasing outflow of Canadian educators who are serving in countries of Asia, Africa and the West Indies. At the Federal Government level, the operation and administration of Canada's external assistance programs is the responsibility of the External Aid Office (see p. 153). At the non-government level, the Canadian University Service Overseas (CUSO) promotes and co-ordinates opportunities for overseas service for Canadian university graduates. The National Committee for Friendly Relations with Overseas Students (FROS) is one of a number of groups set up to welcome to Canada students from other countries, to assist them in various ways during their stay in this country and to provide opportunities for mutual understanding and appreciation. Other such groups providing scholarships and other services for overseas students include the World University Service of Canada, the Overseas Institute of Canada, the African Students' Foundation, the Canadian Federation of University Women, the Canadian Friends' Service Committee, the Imperial Order of Daughters of the Empire, and several church organizations. Services, including hospitality, are provided by the local Kiwanis groups, the YMCA and YWCA, Pax Romano through its affiliates, the Student Christian Movement, the United Nations societies, the Canadian Council of Churches and the Co-operative Union of Canada. Other organizations, such as the Canadian Citizenship Council and the National Federation of Canadian University Students, assist the work of aiding overseas students in many ways.

## Section 3.-Statistics of Schools, Universities and Colleges

Elementary and secondary schools may be conveniently classified as publicly controlled, privately controlled, and federal. Municipal and provincial schools, most numerous by far, include elementary and high schools, vocational institutes, trade schools, teacher-training colleges, and schools for the blind and deaf, and provide as well for correspondence courses. Private schools may be academic, business or other vocational schools, or correspondence schools. Federal schools refer to schools for Indians, schools for residents of the Northwest Territories, and overseas schools for children of members of the Armed Forces or for Armed Forces personnel. Higher education is attained at universities and colleges, which may be provincial institutions, church institutions, independent, or federal military colleges. Continuing or adult education takes a variety of forms and reaches all levels from the basic English courses provided for newly arrived immigrants to courses leading to a university degree. Most organized classes for adults function under the auspices of universities, colleges, local school boards, churches and other community organizations.
Table 1 shows full-time enrolment at all levels each year for the period 1951-52 to 1962-63 and Table 2 shows the number of schools, teachers and pupils for all types of education institutions, classified by province, for the school year 1961-62. 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.

## STUDENT RETENTION FROM SECONDARY SCHOOL TO UNIVERSITY



## 1．－Full－time Enrolment in Elementary and Secondary Schools，and in Universities and Colleges，School Years 1951－52 to 1962－63

| School Year | Elementary and Secondary Schools ${ }^{1}$ |  |  | Universities and Colleges |
| :---: | :---: | :---: | :---: | :---: |
|  | Elementary ${ }^{2}$ Grades | Secondary Grades | Total |  |
|  | No． | No． | No． | No． |
| 1951－52． | 2，235，095 | 432，053 | 2，667，148 | 63，485 |
| 1952－53． | 2，354，686 | 454，892 | 2，809，578 | 63，041 |
| 1953－54． | 2，485，281 | 487，340 | 2，972，621 | 64，140 |
| 1954－55． | 2，604，543 | 539，281 | 3，143，824 | 68，320 |
| 1955－56． | 2，726，762 | 608，683 | 3，335，445 | 72，737 |
| 1956－57． | 2，842，501 | 653，938 | 3，496，439 | 78，504 |
| 1957－58． | 2，959，467 | 646，360 | 3，605，827 | 86，754 |
| 1958－59． | 3，084，346 | 748，098 | 3，832，444 | 94，994 |
| 1959－60． | 3，208，269 | 802，690 | 4，010，959 | 101，934 |
| 1960－61． | 3，319，450 | 882，247 | 4，201，697 | 113，864 |
| 1961－62．． | 3，404，654 | 1，002，723 | 4，407， 317 | 128，894 |
| 1962－63．． | 3，480，485p | 1，097，714p | 4，578，199p | 141，388 |

[^95]
## 2．－Schools，Teachers and Enrolment for All Types of Education Institutions， by Province，School Year 1961－62

| Item | Nfid． | P．E．I． | N．S． | N．B． | Que． | Ont． |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No． | No． | No． | No． | No． | No． |
| Mementary and Secondary Education－ <br> Public and Separate－ |  |  |  |  |  |  |
| Public and Separate ${ }_{\text {Schools．．．．．．．．．．．．．．．}}$ | 1，218 | 440 | 1，248 | 1，292 | 6，639 | 7，381 |
| Teachers． | 4，502 | 1，013 | 6，951 | 6，039 | 49，736 | 50，912 |
| Pupils．．．．．．．．．．．．．．．．．．．． | 133，747 | 25，748 | 186，326 | 155，216 | 1，157，928 | 1，462，230 |
| Overseas（DND）－ |  |  |  |  |  |  |
| Teachers．．．．．．．．．．． | ．．． | ．．． | ．．． | ．．． | ．．． | ．．． |
| Pupils．．．．．．．．．．．．．．．．．．．． | ．．． | ．．． | ．．． | ．．． | ．．． | ．．． |
| Indian－1 |  |  |  |  |  |  |
| Schools．．． | － |  | 8 | 9 | 18 | 113 |
| Teachers．．．．．．．．．．．．．．．．．．． | 二 | 2 | 34 | 24 | 100 | 287 |
| Pupils．．．．．．．．．．．．．．．．．．．．．．． | － | 40 | 804 | 640 | 2，323 | 7，619 |
| Blind－ |  |  |  |  |  |  |
| Schools．．．．．．．．．．．．．．．． |  | 二 | 1 | － | $\stackrel{3}{3}$ |  |
| Teachers．．．．．．．．．．．．．．． | ${ }^{-} 3$ | 2 | 69 | $\square_{36}$ | － 267 | 180 |
| Pupils（home province）．． | 33 | 2 | 69 | 36 |  |  |
| Deai－ |  |  |  |  |  |  |
| Schools．． | － |  | 1 | － | 5 | 77 |
| Teachers．．．．．．．．．．．．．．．． | 66 | 1 | 32 116 | 92 | 113 886 | 77 562 |
| Pupils（home province）．．． | 66 | 12 | 116 | 92 | 886 | 562 |
|  |  |  |  |  |  |  |
| Schools．． | 2 | 5 | 24 | 13 | 654 | 130 |
| Teachers． | 24 | 33 | 282 | 163 | 6，324 | 1，713 |
| Pupils．．．．．．．．．．．．．．．． | 316 | 639 | 6，470 | 2，574 | 94，666 | 27，826 |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Students（full－time university grade）． | 1，757 | 683 | 6，409 | 4，533 | 43，156 | 35，871 |
| Teacher－Training－ |  |  |  |  |  |  |
| Teachers＇Colleges－ |  |  |  |  |  | 10 |
| Institutions．．．．．． | 二 | 1 2 | 26 | 31 | 1，425 | 248 |
| Students．．．．．．．．．．．．．．．．．．．．．．．． | － | 103 | 334 | 563 | 11，601 | 6，058 |

For footnote，see end of table，p． 338.

## 2.-Schools, Teachers and Enrolment for All Types of Education Institutions, by Province, School Year 1961-62-continued

| Item | Nfld. | P.E.I. | N.S. | N.B. | Que. | Ont. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Teacher-Training-concluded | No. | No. | No. | No. | No. | No. |
| Faculties of Education- |  |  |  |  |  |  |
| Faculties ${ }^{2}$.......... | 1 | 1 | 5 | 3 | 8 | 2 |
| Teachers. | 13 | 2 | 13 | 7 | 246 | 48 |
| Students ${ }^{2} . . . . . . . . . .$. | 1,058 | 54 | 243 | 229 | 1,183 | 1,014 |
| Vocational Education- <br> Enrolment- <br> Trade courses (pre-employment) (1960-61). <br> Trade courses (apprentices) ${ }^{3}$ Vocational high school courses. Post-secondary courses. Private business schools. $\qquad$ Private trade schools. ........... |  |  |  |  |  |  |
|  | 836 | 152 | 1,446 | 1,016 | 8,132 | 3,604 |
|  | 797 |  | 1,814 | 1,443 | , 13 | 3,295 |
|  | 503 | 140 | 905 | 4,528 | 21,429 | 70,751 |
|  | - | $\checkmark$ | 32 | 78 | 5,712 | 3,959 |
|  | - | 5 | 539 | 646 | 6,563 | 5,316 |
|  |  | - | 107 | - | 4,943 ${ }^{6}$ | 4,005 |
| Adult Education (part-time enrolment)Universities (1960-61). Provincial governments (1960-61) |  |  |  |  |  |  |
|  | 544 1,706 | 342 485 | 7,892 | 9,069 | 37,152 | 64,574 |
|  |  |  | 10,260 | 9,662 | 318,278 | 173,078 |
|  | Man. | Sask. | Alta. | B.C. | Yukon and N.W.T. | Canada |
|  | No. | No. | No. | No. | No. | No. |
| Mlementary and Secondary Education- |  |  |  |  |  |  |
| Public and Separate- |  |  |  |  |  |  |
| Schools......................... | 1,740 | 2,175 | 1,198 | 1,305 | 72 | 24,708 |
| Teachers...................... | 8,069 | 8,997 | 12,414 | 12,514 | 350 | 161,497 |
| Pupils........................... | 194,854 | 215,625 | 307,702 | 341,219 | 7,633 | 4,188,228 |
| Overseas (DND)-Schools..........Teachers........Pupils.......... |  |  |  |  |  |  |
|  | ... | $\cdots$ | $\cdots$ | ... | $\cdots$ | 22 |
|  | ... | ... | ... | ... | ... | 378 |
|  | ... | ... | ... | ... | ... | 7,937 |
| Indian- |  |  |  |  |  |  |
| Schools.......................... | 79 | 74 | 44 | 69 | 1 | 416 |
| Teachers....................... | 207 | 204 | 211 | 229 | 5 | 1,303 |
| Pupils.......................... | 5,734 | 5,228 | 4,671 | 5,812 | 162 | 33,033 |
| Blind- |  |  |  |  |  |  |
| Schools. . | - | - | - | 1 | - | 6 |
| Teachers........................ | - | - | - | 10 | - | 103 |
| Pupils (home province).......... | 18 | 26 | 21 | 83 | 2 | 737 |
| Deaf- |  |  |  |  |  |  |
| Schools.......................... | 1 | 1 | 1 | 1 | - | 12 |
| Teachers..................... | 7 | 22 | 22 | 21 | - | 295 |
| Pupils (home province).......... | 109 | 106 | 120 | 182 | 9 | 2,260 |
| Private - |  |  |  |  |  |  |
| Schools. | 52 | 31 | 43 | 101 | - | 1,055 |
| Teachers......................... | 504 | 294 | 340 | 933 | _ | 10,610 |
| Pupils........................... | 11,150 | 4,823 | 6,374 | 22,731 | - | 177,569 |
| Higher Education- <br> Institutions. | 10 | 17 | 11 | 8 |  | 354 |
| Students (full-time university grade) | 6,947 | 6,329 | 8,499 | 14,710 | - | r $\begin{array}{r}354 \\ 128,894\end{array}$ |
| Teacher-Training-Teachers'Institutioneges-Teachers............Students......... |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  | 1 | 2 | - | - | - | 126 |
|  | 22 | 42 | - | - | - | 1,796 |
|  | 540 | 1,236 | - | - | - | 20,435 |
| Faculties of Education- |  |  |  |  |  |  |
| Faculties²....................... | 2 | 2 | 2 | 2 | - | 28 |
| Teachers......................... | 12 | 18 | 76 | 120 | - | 555 |
| Students ${ }^{2} .$. | 226 | 1,051 | 2,637 | 3,027 | - | 10,722 |

For footnotes, see end of table, p. 338.

## 2.-Schools, Teachers and Enrolment for All Types of Education Institutions, by Province, School Year 1961-62-concluded

| Item | Man. | Sask. | Alta. | B.C. | $\begin{gathered} \text { Yukon } \\ \text { and } \\ \text { N.W.T. } \end{gathered}$ | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. |
| Vocational Education-Enrolment- |  |  |  |  |  |  |
| Trade courses (pre-employment) (1960-61). | 2,550 | 2,894 |  | 2,5227 | - |  |
| Trade courses (apprentices) ${ }^{3} \ldots \ldots$. | 1,286 | 2,905 | 2,821 3 3 | 2,529 | 二 | 25,973 15,914 |
| Vocational high school courses.. | 4,139 | 4,900 | 11,280 | 8,620 | - | 127,195 |
| Post-secondary courses... | 1,014$\mathbf{5 9 3}$ | 168 | 1,032 | 197 | - | 11,178 |
| Private business schools. |  | $\begin{array}{r} 807 \\ 2,307 \end{array}$ | $\begin{array}{r} 1,403 \\ 812 \end{array}$ | 2,324793 | - | 18,61213,560 |
| Private trade schools............ |  |  |  |  | - |  |
| Adult Education (part-time enrolment)- |  |  |  |  |  |  |
| Universities (1960-61)..........aid | 8,281 | 12,063 | 25,664 | 26,255 | - | 191,836 |
| Provincial governments (1960-61) | 26,491 | 18,906 | 13,177 | 46,291 | - | 693,340 ${ }^{8}$ |

${ }^{1}$ Day, residential and hospital schools administered by the Federal Government. ${ }^{2}$ Also included with "Higher Education". ${ }^{3}$ Includes indentured apprentices taking full-time, part-time and correspondence courses.
${ }^{4}$ Included under "Trade courses(pre-employment)".
${ }^{5}$ Included with Nova Scotia. ${ }^{6}$ School year 1960-61. ${ }^{7}$ Includes only students being trained under Federal-Provincial agreements. ${ }^{8}$ Includes enrolment in courses sponsored by public libraries, business colleges, teacher-training institutions, and Federal Government departments not distributed by province.


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 1959 is presented in Table 3, classified by source. Details of income of school boards for publicly controlled elementary and secondary schools for the years 1957-59 are given at p. 343 and financial statistics for universities and colleges at pp. 347-348.
3.-Total Expenditure on Formal Education, Vocational Training and Related Cultural Activities, by Source of Funds, 1959

| Type of Education | Local <br> Taxation | Provincial Governments ${ }^{1}$ | Federal Government | Fees | Other Sources | Total Expenditure |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Formal Education- <br> Elementary and Secondary- |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Public schools......................... | 581,928 | 459,553 | 14,862 | 5,216 | 9,430 | 1,070,989 |
| Government correspondence schools..... | 5 | 1,437 | .... | ${ }^{-} 568$ |  | 2,005 |
| Reform schools... | ... | 696 |  | ... | ... | 696 |
| Indian and Eskimo education | ... | ... | 32,791 |  |  | 32,791 |
| Private schools. | ... | ... | ... | 33,686 | 8,256 | 41,942 |
| Totals, Elementary and Secondary..Teacher-training outside universities...... | 582,473 | 468, 935 | 47,653 | 39,470 | 17,993 | 1,156,524 |
|  | ... | 10,520 | 20 | 582 | 15 | 11,137 |
| Higher Education- |  |  |  |  |  |  |
| Current operating expenditure....... | 38051 | 49,265 | 6,960 | 40,789 | 14,872$\ldots$ | 132,48243,586 |
| Plant expenditure from current funds. |  | 36,575 |  | ... |  |  |
| Research in universities. | ... | 827 | 12,367 | ... | 5,135 | 18,329 |
| Defence colleges | ... | \%,116 | $\begin{array}{r} 5,430 \\ 3,301 \end{array}$ | ... |  | 5,430 |
| Scholarships. | ... |  |  | $\ldots$ | $\cdots$ | $\begin{array}{r}\text { 5,432 } \\ 8 \\ \hline\end{array}$ |
| 0 ther. | ... | 104 | 354 |  | ... |  |
| Totals, Higher Education. <br> Undistributable expenditure $\qquad$ <br> Totals, Formal Education | 431 | 91,887 | 55,588 | 40,789 | 20,012 | 208,707 |
|  | ... | ... | 276 | ... | ... | 276 |
|  | 582,904 | 571,342 | 103,537 | 80,841 | 38,020 | 1,376,644 |
| Vocational Training- |  |  |  |  |  |  |
| Institutes of technology | ... | 8,6232,355 | 2,1341,836 | 1,15761 | 97213 | 12,011 |
| Apprenticeship. | $\ldots$ |  |  |  |  | 4,465 |
| Trades training. |  | 7,209 | 1,345 | 724 | 17 | 9,295 |
| Primary industries and homemaking | $\ldots$ | 2,284 | 170 | 16 | 345 | 2,8151,144 |
| Unemployed. |  | 664478 | 479362 |  |  |  |
| Handicapped. | .. |  |  | $\cdots$ | $\cdots{ }_{2}$ | 1,8402,879 |
| Health and welfare personnel. | $\ldots$ | 704386 | 2,170 | 3 |  |  |
| Inmates of reform institutions |  |  | 268 | $\cdots$ | ... | ,654 |
| Indians and Eskimos. | ... | ${ }^{*} 115$ | 241 |  | ... | 1,922 |
| Other vocational training costs | ... |  | 1,789 | 18 | $\ldots$ |  |
| Provincial capital expenditures | ... | 9,990 | ${ }_{8}$ | $\dddot{3,562}$ |  | 9,3,560 |
| Private business colleges. | ... |  |  |  |  |  |
| Totals, Vocational Training | ... | 32,808 | 10,794 | 5,541 | 675 | 49,818 |
| Cultural Activities-4 |  |  |  |  |  |  |
| Adult education, including night schools. | 5 | 2,3032,519 | $\begin{array}{r} 400 \\ 1,359 \end{array}$ | 1556 | ... | 2,7183,934 |
| Fine arts... |  |  |  |  |  |  |
| Handicrafts | 12,348 | 2363,257 | - 509 | $\cdots{ }_{55}$ | 1.990 | 238 |
| Libraries ${ }^{\text {d }}$.......... |  |  |  |  |  | 18,159 |
| Archives, museums and art gallerie | , | 1,755 | 4,174 | ... | $\cdots$ | 5,929 |
| Cultural societies-grants.... | ... |  | $\begin{array}{r} 16 \\ 339 \end{array}$ | ... | $\ldots$ |  |
| Totals, Cultural Activities |  |  |  |  |  | 114 339 |
|  | 12,348 | 10.168 | 7,477 | 126 | 1,992 | 32,111 |

${ }^{1}$ Includes the Yukon and Northwest Territories.
${ }^{2}$ Includes $\$ 7,500,000$ held in trust for Quebec uni-
versities. ${ }^{3}$ Capital grants from the Federal Government are included in the appropriate classification above. ${ }^{4}$ Limited to reported expenditures of public funds. schools'. 'Includes capital costs from current funds.
${ }^{5}$ Included in "Elementary and Secondary-Public

## Subsection 1.-Elementary and Secondary Schools

Control.-Direct control and operation of public schools is by school boards, which operate under school laws and regulations, and the members of which are elected or appointed usually for terms of two or three years. Through amalgamations and consolidations, schools are now operated by boards of larger units, local boards within larger units, independent boards for rural schools, towns or cities, and some by official 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 in each province in the school year ended in 1962 and indicates the type of board, the number of official trustees and the number of board members elected or appointed to these boards.
4.-Active School Boards and School Trustees, by Province, School Year 1961-62

| Province or District | $\begin{gathered} \text { Boards } \\ \text { of Larger } \\ \text { Units } \end{gathered}$ | Local Boards within Larger Units | Independent Local Board | Total <br> Boards | School Boards Composed of Trustees who are- |  |  | School Trustees |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | All <br> Elected | $\|$Some <br> Appointed <br> Some <br> Elected | $\underset{\text { Appointed }}{\text { All }}$ |  |
|  | No. | No. | No. | No. | No. | No. | No. | No. |
| Newfoundland............. | 288 | - | - | 288 | - | - | 288 | 3,079 |
| Prince Edward Island. . . . | 14 | - | 457 | 471 | 469 | 2 | - | 1,516 |
| Nova Scotia.............. | 35 | 42 | 1,261 | 1,338 | 1,261 | - | 77 | 4,311 |
| New Brunswick........... | 14 | 409 | 82 | 505 | 475 | 16 | 14 | 2,474 |
| Quebec- |  |  |  |  |  |  |  |  |
| Roman Catholic...... | 9 | 72 | 1,407 | 1,488 | 1,486 | - | 2 | 7,452 |
| Protestant.............. | 9 | 64 | 147 | 220 | 218 | 1 | 1 | 934 |
| Ontario................... | 906 | $11^{1}$ | 3,007 | 3,924 | 3,582 | 62 | 280 | 17,855 |
| Manitoba................. | 61 | 38 | 1,353 | 1,452 | 1,452 | - | - | 4,533 |
| Saskatchewan............. | 56 | 4,789 | 369 | 5,214 | 5,214 | - | - | 16,073 |
|  | 59 | - | 143 | 202 | 202 | - | - | 889 |
| British Columbia ${ }^{\text {a }}$........ | 83 | - | 17 | 100 | 87 | 13 | - | 565 |
| Mackenzie District........ | - | - | 3 | 3 | 3 | - | - | 11 |
| Totals............ | 1,534 | 5,425 | 8,246 | 15,205 | 14,449 | 94 | 662 | 59,692 |

${ }^{1}$ Boards of Education, members of Toronto Metropolitan Board. ${ }^{2}$ Ten school districts are under an official trustee or trustees.

3 In addition, five school districts are under an official trustee or trustees.
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 1961-62 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.c. 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 4.7 p.c. to 4.9 p.c., while the country's population during the same period increased annually by amounts varying from 1.8 p.c. to 2.2 p.c.

## 5.-Enrolment in Publicly Controlled and Private Schools, by Grade, School Year 1961-62

| Grade |  | Newfoundland | Prince Edward Island | Nova Scotia | New Brunswick | Quebec | Ontario |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | No. | No. | No. | No. | No. | No. |
| Kindergarten. |  | 5,713 | 170 | 18,117 | 66 | 13,620 | 100,575 |
| Grade 1.... |  | 15,835 | 2,975 | 18,252 | 17,796 | 143, 409 | 155,938 |
| Grade 2. |  | 14,687 | 2,754 | 18,355 | 16,641 | 140,870 | 146,191 |
| Grade 3. |  | 14,107 | 2,668 | 18,272 | 16,396 | 139, 903 | 137,470 |
| Grade 4. |  | 14,079 | 2,526 | 17,649 | 16,079 | 139,798 | 127,996 |
| Grade 5. |  | 13,331 | 2,554 | 17,165 | 16,038 | 130,074 | 124,739 |
| Grade 6. |  | 12,630 | 2,646 | 17,418 | 15,034 | 126, 340 | 119,464 |
| Grade 7 |  | 11,797 | 2,416 | 17,372 | 15,596 | 109,563 | 119,455 |
| Grade 8. |  | 10,431 | 2,410 | 15,609 | 13,696 | 108,509 | 111,830 |
| Grade 9. |  | 10,118 | 2,073 | 13,293 | 11,347 | 80,660 | 117,277 |
| Grade 10. |  | 6,476 | 1,668 | 9,947 | 8,322 | 63,167 | 88,260 |
| Grade 11. |  | 4,270 | 843 | 7,148 | 5,923 | 45,260 | 58,274 |
| Grade 12. |  | 73 | 644 | 3,540 | 3,957 | 7,199 | 47,213 |
| Grade 13. |  |  | - | 147 | 621 | 450 | 23,655 |
| Auriliary. |  | 11 | 16 | 855 | 604 | 5,679 | 13,219 |
| Special. |  | 505 | 64 | 461 | 314 | 416 | 6,119 |
| Totals. |  | 134,063 | 26,427 | 193,600 | 158,430 | 1,254,917 | 1,497,675 |
| Grade | Manitoba | Saskatchewan | Alberta | British Columbia | $\begin{gathered} \text { Yukon } \\ \text { s.W.T. } \end{gathered}$ | DND Schools Overseas | Canada |
| Kindergarten.......... |  |  | No. |  | No. | No. | No. |
|  | 6,192 | 3,274 | 677 | 7,536 | 391 | 999 | 157,330 |
| Grade 1................ | 23,245 | 24,755 | 36,630 | 39,863 | 1,608 | 1,087 | 481,393 |
| Grade 2............... | 21,465 | 23,661 | 34,765 | 37,355 | 1,264 | 936 | 458,944 |
| Grade 3. | 20,562 | 22,175 | 32,036 | 35,736 | 993 | 783 | 441,101 |
| Grade 4. | 19,646 | 20,917 | 30,789 | 33,855 | 831 | 720 | 424,885 |
| Grade 5. | 19,442 | 20,567 | 28,744 | 31,942 | 608 | 595 | 405,799 |
| Grade 6. | 18,075 | 19,008 | 27,071 | 31,000 | 568 | 563 | 389,817 |
| Grade 7. | 18,610 | 19,651 | 26,949 | 31,860 | 433 | 604 | 374,306 |
| Grade 8................ | 16,790 | 18,079 | 25,807 | 31,118 | 349 | 535 | 355,163 |
| Grade 9. | 16,873 | 18,056 | 24,961 | 29,414 | 297 | 456 | 324,825 |
| Grade 10. | 12,883 | 13,766 | 18,893 | 23,601 | 202 | 322 | 247,507 |
| Grade 11. | 10,862 | 10,774 | 15,338 | 17,857 | 121 | 163 | 176,833 |
| Grade 12............... | 6,035 | 9,286 | 15,794 | 14,479 | 102 | 116 | 108,438 |
| Grade 13................ |  |  | 130 | 2,101 | - 28 | 58 | 27,162 |
| Auxiliary............. | 997 61 | 1,210 | 68 95 | 1,964 81 | 28 | 二 | 24,651 8,613 |
| Totals......... | 211,738 | 225,676 | 318,747 | 369,762 | 7,795 ${ }^{2}$ | 7,937 | 4,406,767 |

${ }^{1}$ Includes Ungava District of Quebec. ${ }^{2}$ Total for the Yukon 2,893 pupils.
Teaching Staffs.-Between the school years ended in 1942 and 1962 the number of teachers in the publicly controlled schools of the ten provinces increased 116 p.c. from 76,069 to 164,311 . The number of men teachers increased 174 p.c. and the number of women 98 p.c.

In 1962, in the nine provinces outside of Quebec, 81.3 p.c. of the teachers had at least senior matriculation and one year of teacher-training, and an additional 10.6 p.c. had one year less schooling. Median experience in the eight provinces outside of Quebec and Ontario has slowly increased from 6.8 years in 1942 to 8.4 years in 1962, 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 13.4 in 1954 and 9.6 years in 1962.

Between 1942 and 1962 the median salaries of all teachers in the nine provinces other than Quebec increased by 382 p.c. from $\$ 915$ to $\$ 4,414$, while that for teachers in one-room schools increased by 322 p.c. from $\$ 739$ to $\$ 3,117$. The annual rate of increase has naturally fluctuated considerably during that period, ranging from 1.8 p.c. in 1941 to 16.8 p.c. in 1948. The increase in 1962 over 1961 was 3.9 p.c. as compared with 4.7 p.c. for 1961 over 1960.

## 6.-Teachers and Principals in Publicly Controlled Elementary and Secondary Schools, School Year 1961-62



[^96]Financial Support.-Table 7 shows the sources of income of boards operating publicly controlled elementary and secondary schools for the years 1957-59. Their inco me is derived almost entirely from local taxation and provincial grants. Newfoundland is exceptional in that fees and income from other sources account for nearly 13 p.c. of the total income. Prior to 1961, fees were charged by Quebec school boards but school corporations are now required to provide elementary and secondary education free of
charge. Under the new legislation, parents who send their children to private schools are reimbursed for at least part of the fees charged. In other provinces, elementary and secondary education in the public school system is normally provided without direct charges on the parents.

Usually, school boards requisition the local municipalities for the sums needed to balance their budgets, taking into account provincial grants and other income. The municipal governments levy taxes on land and buildings and, in some cases, on improvements, personal property and business income. Several provinces have taken steps to equalize real property assessment.

Provincial grants accounted for nearly 40 p.c. of the total revenue of school boards in 1959, ranging from 30 p.c. in Quebec to 86 p.c. in Newfoundland.

Only four provinces collect figures for debenture indebtedness although it is the usual practice in all provinces, except Newfoundland, for boards to finance construction of new schools, at least in part, by issuing debentures. Provincial governments help boards to meet capital expenditures by grants of a percentage of the cost of new buildings, by grants of a fixed amount per room built, or by paying grants based on debenture debt charges. Some provinces guarantee debentures issued by the boards and others assist in marketing them.

## 7.-Income of School Boards of Publicly Controlled Elementary and Secondary Schools, by Province, Years Ended Mar. 31, 1957-59

Nore.-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.


${ }^{1}$ Net figures, after deduction of sinking funds.

## Subsection 2.-Universities and Colleges

Institutions.-According to the latest information available (1960-61) at the time of going to press, there were in Canada 354 institutions of higher education offering one or more years of degree-credit courses-304 under the control of religious bodies ( 264 Roman Catholic), 23 under provincial government control, three under Federal Government control, and 24 under private non-denominational control. These institutions were distributed, by province, as follows:-

| Province | Active DegreeGranting Institutions | Other Institutions | Total |
| :---: | :---: | :---: | :---: |
|  | No. | No. | No. |
| Newfoundland.... | 1 | 2 | 3 |
| Prince Edward Island. | 1 | 1 | 2 |
| Nova Scotia....... | 9 | 7 | 16 |
| New Brunswick.. | 6 | 4 | 10 |
| Quebec.......... | 8 | 204 | 212 |
| Ontario.... | 21 | 44 | 65 |
| Manitoba... | 3 | 7 | 10 |
| Saskatchewan. | 5 | 12 | 17 |
| Alberta..... | 2 | 9 | 11 |
| British Columbia. | 3 | 5 | 8 |
| Totals... | $\underline{59}$ | $\stackrel{295}{\underline{=}}$ | 354 |

Enrolment.-Full-time university-grade enrolment continues to increase year by year and indications are that enrolments may well be double the 1962-63 figure of 141,388 in about ten years. Table 8 shows full-time enrolment by province for the academic years ended 1960-63. In the latest year, in addition to full-time students, there were 44,048 part-time university-grade students (including 5,351 graduate students) in attendance during the regular 1962-63 winter session and 7,522 students taking university-grade correspondence courses.

## 8.-Full-Time Regular Winter Session University-Grade Enrolment, by Province, Academic Years Ended 1960-63

[^97]| Province | 1959-60 |  | 1960-61 |  | 1961-62 |  | 1962-63 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Total | Graduate Only ${ }^{1}$ | Total | $\left\lvert\, \begin{gathered} \text { Graduate } \\ \text { Only } \end{gathered}\right.$ | Total | $\left\lvert\, \begin{gathered} \text { Graduate } \\ \text { Only }^{1} \end{gathered}\right.$ | Total | $\begin{array}{\|c} \text { Graduate } \\ \text { Only } \end{array}$ |
|  | No. | No. | No. | No. | No. | No. | No. | No. |
| Newfoundland............ | 1,070 | 21 | 1,240 | 33 | 1,757 | 17 | 1,998 | 34 |
| Prince Edward Island..... | 5330 | 130 | 5 570 | 147 | 683 | - 172 | 705 |  |
| Nova Scotia............... | 5,300 3 | 130 | 5,820 | 147 | 6,409 | 172 | 7,034 | ${ }_{181}$ |
| New Brunswick. | 3,700 33,700 | 1,599 | $\begin{array}{r}\text { 4, } \\ 38,000 \\ \hline\end{array}$ | 1,981 | 4,533 43,156 | 2,307 | 4,896 47,324 | 2,813 |
| Ontario. | 29,400 | 2,211 | 32,100 | 2,599 | 35,871 | 2,903 | 39,269 | 3,328 |
| Manitoba. . . . . . . . . . . . . . | 5,850 | 204 | 6,360 | 251 | 6,947 | 294 | 7,741 | 296 |
| Saskatchewan | 4,860 | 168 | 5,630 | 210 | 6,329 | 226 | 7,024 | 253 |
| Alberta. | 6,100 | 294 | 7,140 | 350 | 8,499 | 471 | 9,837 | 656 633 |
| British Columbia | 11,490 | 520 | 13,070 | 857 | 14,710 | 808 | 15,560 | 633 |
| Totals. | 102,000 | 5,234 | 114,000 | 6,518 | 128,894 | 7,347 | 141,388 | 8,436 |

[^98]Foreign enrolment has risen considerably since the end of World War II, 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 1961-62 about one of every 16 full-time university students in Canada was a resident of a country other than Canada. Hong Kong, Trinidad and Tobago, and Britain each accounted for over 500 students while France, Pakistan, India and Jamaica contributed from 100 to 400 each. Over 100 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 1931-62

| Academic Year Ended- | Total Full-Time University Enrolment in Canada | Students with Residence in- |  |  |  |  | Total Enrolment from Other Countries in Canada ${ }^{1}$ | Canadians Studying in - |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | United States | Britain | British West Indies | New-foundland ${ }^{1}$ | Other Countries |  | United States ${ }^{2}$ | Britain ${ }^{3}$ |
|  | 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 | . |
| 1951. | 68,306 | 1,758 | 164 | 252 | ... | 1,014 | 3,188 | 4,528 | 372 |
| 1956.. | 72,729 | 1,773 | 281 | 635 | ... | 1,696 | 4,385 | 4,990 | 404 |
| 1959.......... | 94,400 | 1,984 | 526 | 1,018 | ... | 2,460 | 5,988 | 5,432 | 438 |
| 1960. | 102,000 | 2,022 | 576 | 1,050 | ... | 2,778 | 6,426 | 5,679 | 458 |
| 1961.......... | 114,000 | 2,329 | 640 | 1,150 | $\cdots$ | 3,120 | 7,239 | 6,058 | 502 |
| 1962.......... | 128,894 | 2,660 | 577 | 1,251 | ... | 3,412 | 7,9004 | 6,571 | 559 |

${ }^{1}$ Before 1949 Newfoundland was considered as being a country outside Canada. ${ }^{2}$ Data from the Institute of International Education, New York. ${ }^{2}$ Data from the Association of Universities of the British Commonwealth, London, England. Newfoundland is included with Canada for all years. ${ }^{4}$ Includes 3,294 from all British Commonwealth countries and territories.

Graduates.-Table 10 gives figures for graduates in most faculties for the academic years ended 1960-63; breakdown by sex was not available for 1962-63 at the time of going to press.

## 10.-Graduates from Universities and Colleges, Academic Years Ended 1960-63

Norr.-Figures for 1920-36 are given in the 1933 Year Book, pp. 993-997, and for 1937-59 in the corresponding table of subsequent editions.

| Field of Study | 1959-60 |  | 1960-61 |  | 1961-62 |  | 1962-63 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Total | Female | Total | Female | Total | Female | Total ${ }^{1}$ |
|  | No. | No. | No. | No. | No. | No. | No. |
| Graduates in Arts, Pure Science and Commerce. | 9,506 | 2,628 | 10,338 | 2,896 | 12,207 | 3,516 | 14,150 |
|  | 7,171 | 2,336 | 7,614 | 2,549 | 9,226 | 3,154 | 13,000 |
| Bachelors of Science (in Arts) | 1,311 | 247 | 1,614 | 287 | 1,879 | 310 | 13,000 |
| Bachelors of Commerce ${ }^{4}$. | 1,024 | 45 | 1,110 | 60 | 1,102 | 52 | 1,150 |
| Graduates in Applied Science. | 2,409 | 14 | 2,614 | 8 | 2,692 | 7 | 2,155 |
| Bachelors of Applied Science in Engineering....... | 2,171 | 7 | 2,412 | 8 | 2,462 | 4 | 2,250 |
| Bachelors of Architecture ${ }^{5}$. | 98 | 7 | 84 | - | 114 | 3 | 110 |
| Bachelors of Forestry. | 139 | - | 115 | - | 110 | - | 90 |
| Graduates In A\&riculture, Veterinary Science and Household Science. | 559 | 251 | 637 | 286 | 710 | 299 |  |
| Bachelors of Agricultural Science. | 248 | 7 | 311 | 12 | 351 | 9 | 380 |
| First degrees in Veterinary Science | 68 | 1 | 56 | 4 | 72 | 3 | 70 |
| Bachelors of Household Science. | 243 | 243 | 270 | 270 | 287 | 287 | 340 |

[^99]10.-Graduates from Universities and Colleges, Academic Years Ended 1960-63-concluded

| Field of Study | 1959-60 r |  | 1960-61 = |  | 1961-62 |  | 1962-63 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Total | Female | Total | Female | Total | Female | Total ${ }^{1}$ |
|  | No. | No. | No. | No. | No. | No. | No. |
| Graduates in Education, Library Science and Social Service | 2,596 | 1,158 | 3,124 | 1,217 | 3,835 | 1,599 | 4,170 |
| First degrees in education or pedagogy........... | 2,102 | , 862 | 2,430 | 1,903 | 3,009 | 1,158 | 3,300 |
| Librarian degrees and diplomas................... | 106 | 88 | 199 | 130 | 268 | 189 | 230 |
| Physical education first degrees and diplomas.... | 143 | 60 | 245 | 69 | 321 | 90 | 390 |
| Social service degrees and diplomas............... | 245 | 148 | 250 | 115 | 237 | 162 | 250 |
| Graduates in Medicine and Related Studies. | 1,793 | 490 | 1,778 | 582 | 1,948 | 713 | 2,015 |
| Medical doctors. | 879 | 66 | 842 | 65 | 846 | 86 | 820 |
| Dentists. | 219 | 8 | 179 | 8 | 229 | 8 | 250 |
| Pharmacists....... | 263 | 57 | 281 | 86 | 281 | 78 | 310 |
| First degrees in nursing | 238 | 238 | 302 | 302 | 384 | 383 | 350 |
| Physiotherapy and occupational therapy........... | 119 | 119 | 118 | 118 | 147 | 147 | 230 |
| Chiropractic.................................... | 54 | 1 | 28 | 2 | 19 | 1 | 20 |
| Optometry.......................................... | 21 | 1 | 28 | 1 | 42 | 10 | 35 |
| Graduates in Law and Theology................ | 1,699 | 81 | 1,556 | 85 | 1,516 | 87 | 1,500 |
| First degrees and equivalent diplomas in law..... | 840 | 33 | 697 | 35 | 666 | 37 | 650 |
| Roman Catholic theological colleges. | 564 | - | 562 | - | 550 |  | 550 |
| Protestant theological colleges ${ }^{6} .$. | 295 | 51 | 297 | 50 | 300 | 50 | 300 |
| Other First Degrees and Equivalent Diplomas... | 183 | 144 | 198 | 137 | 209 | 145 | 315 |
| Bachelors of Fine and Applied Arts................ | 16 | 10 | 11 | 8 | 13 | 9 | 20 |
| Bachelors of Interior Design........................ | 9 | 9 | 9 | 8 | 10 | 8 | 15 |
| Journalism. | 26 | 19 | 25 | 14 | 26 | 14 | 35 |
| Bachelors of Music | 92 | 76 | 88 | 67 | 80 | 57 | 150 |
| Others... | 40 | 30 | 65 | 40 | 80 | 57 | 95 |
| Graduate and Honorary Degrees................. | 2,622 | 417 | 3,045 | 519 | . | .. | .. |
| Honorary doctorates............................. | 237 | 10 | 265 | 14 |  |  |  |
| Doctorates in course.............................. | ${ }^{281}$ | 22 | , 305 | 26 | 321 | 26 | 350 |
| Masters of Arts ${ }^{\text {Masters of }}$ Science ${ }^{\text {e }}$ | 1,217 | 260 42 |  |  |  |  |  |
|  | 583 304 | 42 83 | 677 367 | 49 126 | 2,768 | 503 | 3,150 |

[^100]Teaching Staffs.-Table 11 shows the trend in university teaching staffs since 1954.

## 11.-Full-Time Teaching Complement in Universities and Colleges, Academic Years Ended 1954-63

Nore.-Figures from 1957 are estimates based on returns from institutions representing about 50 p.c. of the total enrolment. Figures for all years include some research personnel and junior and sessional lecturers and assistants.

| Academic Year Ended- | Teachers | Academic Year Ended- | Teachers |
| :---: | :---: | :---: | :---: |
|  | No. |  | No. |
| 1954.. | 6,503 | 1959.............................. | 8,200 |
| 1955..... | 6,474 | 1960. | $9,200{ }^{\text {r }}$ |
| 1956.... | 6,719 | 1961.. | 9,755 ${ }^{\text {r }}$ |
| 1957... | 7,000 | 1962.. | 10,540 ${ }^{\text {r }}$ |
| 1958... | 7,500 | 1963............................. | 11,670 |

Table 12 gives median salaries, by rank and region, for the staffs of 17 major institutions for 1962-63.

## 12.-Median Salaries of Teachers at 17 Universities, Academic Year 1962-63

Nore.-Institutions include: West-Universities of Manitoba, Saskatchewan, Alberta, British Columbia; Central-Bishop's, McGill, Queen's, Toronto, Victoria, Trinity, McMaster, Western Ontario; Atlantic-Acadia, Dalhousie, St. Francis Xavier, Mount Allison, New Brunswick.

| Rank | Region |  |  |  | Staff Complement |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Atlantic Provinces | Central Provinces | Western Provinces | Total |  |
|  | \$ | \$ | \$ | \$ | No. |
| Deans............................................ | 13,071 | 17,607 | 15,800 | 16,031 | 107 |
| Professors........................................ | 10,179 | 13,236 | 13,017 | 12,972 | 1,087 |
| Associate professors............................... | 8,197 | 9,849 | 10,092 | 9,858 | 1,275 |
| Assistant professors.............................. | 6,781 | 7,865 | 7,845 | 7,778 | 1,601 |
| Instructors and lecturers......................... | 5,512 | 6,242 | 6,336 | 6,226 | 927 |
| Totals, All Ranks.................. | 7,250 | 9,150 | 8,989 | 8,894 | 5,016 ${ }^{1}$ |

${ }^{1}$ Includes 19 ungraded professors not distributed above.
Finances.-Table 13 gives a historical series of the finances of Canadian universities. Since 1952 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 195859 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, which administers the fund. In 196061 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 details of the federal grants for each of the academic years from 1960-61 to 1962-63. The figures for 1961-62 include an adjustment made to the 1960-61 grants resulting from a revision of the 1960 population estimates made when actual census figures for 1961 became available.

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 $\$ 50,000,000$, 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. In the first year of its operation (ended Mar. 31, 1958), grants amounting to $\$ 4,100,000$ were authorized and $\$ 1,300,000$ was actually paid. Up to the end of March 1963, a total of over $\$ 30,000,000$ had been paid. 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 $\$ 50,000,000$ for the provision of scholarships or other assistance in the fields of the arts, humanities and social sciences (see also pp. 357-359).

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## Subsection 3.-Vocational Education*

Canadian vocational courses and training below university level are organized either in formal classes and training shops or in the form of informal on-the-job training. However, very often the two methods complement each other so that, for instance, an apprentice having a contract with and working for a private firm may attend a provincial trade school on a part-time or full-time basis.

Most formal vocational education is sponsored by public bodies, either by local school boards at their high schools or directly by provincial governments in trade schools and technical institutes. Private vocational schools supplement the publicly supported training facilities to quite an extent and some industrial firms train their own skilled manpower.

Table 15 summarizes the data on full-time training classes. The duration of these classes may vary from three weeks taken annually by indentured apprentices at provincially operated trade schools, to two-year vocational high school courses or three-year postsecondary courses offered in provincial technical institutes. 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 a technical institute.

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.

[^101]15.-Full-Time Enrolment in Vocational Courses, School Year 1960-61

| Item | Nfid. | P.E.I. | N.S. | N.B. | Que. | Ont. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Publicly Sponsored- | No. | No. | No. | No. | No. | No. |
| Trade courses.................... | 836 | 152 | 1,447 | 1,016 | 8,1321 | 3,604 |
| Vocational high school courses.... | 434 | 130 | 861 | 4,706 | 17,069 | 61,049 |
| Post-secondary technical courses.. | 23 |  | 30 | 61 | 7,086 | 3,083 |
| Apprenticeship courses............. | 234 | - | 267 | 98 | 1,497 | 2,780 |
| Privately Sponsored- <br> Trade school courses. <br> Business school courses | 二 |  | 122 | 611 | 4,943 6,563 | 1,331 |
| Totals................. | 1,504 | 3,584 |  | 6,492 | 45,290 | 77,492 |
|  | Man. | Sask. | Alta. | B.C. | Not Specified | Canada |
| Publicly Sponsored- |  | No. | No. | No. | No. | No. |
| Trade courses.................... | 2,550 | 2,894 | 2,821 | 2,5222 | - | 25,974 ${ }^{3}$ |
| Vocational high school courses.... | 3,457 | 4,543 | 10,990 | 8,020 | - | 111,259 |
| Apprenticeship courses............ | 874 | 1,049 | 3,697 | 146 499 | 二 | 11,422 10,995 |
| Privately Sponsored- Trade school courses.... Business school courses. | 476 826 | 1,798 883 | 786 1,551 | $\begin{array}{r} 693 \\ 2,359 \end{array}$ | 1,505 | $\begin{aligned} & 11,6545 \\ & 19,013^{6} \end{aligned}$ |
| Totals. | 8,183 | 11,272 | 20,756 | 14,239 | 1,505 | 190,317 |

[^102]
## Subsection 4.-Adult Education

Adult education in Canada, under university, government and private auspices, offers a variety of opportunities to persons who are not attending school full-time to raise their academic qualifications, secure vocational training, and engage in other social and cultural learning experiences. Annual surveys from 1957 to 1961 show steady increases in adult education enrolment, from a total of 522,207 in 1957-58 to 908,812 in 1960-61, under university, government and business college sponsorship. Attendance at public lectures, film showings, exhibits, lectures, tours, etc., under similar auspices more than doubled during the same period. In addition, private academic, trade and technical schools, employers, churches, and other voluntary organizations and agencies, not included in annual surveys, sponsor many less-formal courses in the field of adult education.

In 1960-61, universities and colleges sponsored more than one quarter of the enrolment reported in the annual survey, and government departments and agencies were responsible for more than two thirds. Academic subjects for credit toward a high school diploma or university degree represented 18.6 p.c. of the total enrolment and vocational, industrial, commercial, agricultural, home economics and applied arts courses, and professional training and refresher courses in medicine, science and executive development for 31.8 p.c.; the remainder were in informal, non-credit courses in social education and cultural subjects, such as family life education, citizenship and public affairs, health education, fine arts, religion, philosophy and languages.

In a survey of participants in adult education under all auspices conducted in June 1960, it was found that, in general, persons taking adult education courses were younger than the average adult and better educated. More men than women reported taking courses and vocational courses were the most popular.

In addition to these programs, the institutions and agencies surveyed offered a variety of adult education services. Radio and television programs were produced, printed information materials were published, and exhibits, fairs, conferences and workshops were organized. Advisory services were also made available to groups and individuals. The National Film Board and the Canadian Broadcasting Corporation played an important role in adult education through the production of cultural and informational programs for use by groups and individuals.
16.-Adult Education Activities, School Year 1960-61, with Totals for 1959-60

| Province and Sponsor | Part-Time Enrolment in- |  |  | Total Enrolment | Attendance at Public Lectures, etc. |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Academic Subjects | Vocational and Professional Training | Informal Courses |  |  |
|  | No. | No. | No. | No. | No. |
| Newfoundland- |  |  |  |  |  |
| Universities... | 110 1,278 | 74 320 | 360 108 | 544 1,706 | 1,130 32,136 |
| Prince Edward IslandUniversities. Government ${ }^{1}$ | 312 | 30 485 | 二 | 342 485 | - |
| Nova ScotiaUniversities. Government ${ }^{1}$. | 2,535 1,236 | 4,697 5,491 | 660 3,533 | 7,892 10,260 | $\begin{aligned} & 84,267 \\ & 17,000 \end{aligned}$ |
| New BrunswickUniversities. Government | 5,838 1,500 | 322 5,679 | 2,909 2,483 | 9,069 9,662 | 10,350 39,392 |
| QuebecUniversities.. Government ${ }^{1}$ | 18,625 22,528 | 10,575 78,426 | 7,952 236,426 | 37,152 337,380 | $\begin{aligned} & 151,060 \\ & 178,150 \end{aligned}$ |

[^103]16.-Adult Education Activities, School Year 1960-61, with Totals for 1959-60-concluded

${ }^{1}$ Operated and assisted by federal and provincial departments and agencies. ${ }^{2}$ Estimate.

## PART II.-GULTURAL AGTIVITIES RELATED TO EDUGATION Section 1.-Art and Education

Fine Art Schools, Galleries and Organizations.-Fine art 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. In Mount Allison University, N.B., and in the Universities of Saskatchewan and Manitoba, there is a sufficient number of courses to allow the taking of a Bachelor degree with specialization in fine art. At the University of Toronto an Honour B.A. in art history and archaeology is offered, as well as graduate work in this field. Departments of fine art were opened by McGill University in 1948-49, by the University of British Columbia in 1949-50 and by the University of Alberta in 1953-54; McMaster University reopened its department in 1951.

There are also schools of art not requiring any fixed academic standing for admission, as they are more concerned with the technical development of the artist. The most widely known of these are:-

Nova Scotia College of Art, Halifax, N.S.
Ecole des Beaux-Arts, Quebec, Que.
Ecole des Beaux-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 Art, Winnipeg, Man.
School of Art, Regina College, Regina, Sask.
Provincial Institute of Technology and Art, Banff School of Fine Arts, Banff, Alta. (affiliated with the University of Alberta, Edmonton)
Vancouver School of Art, Vancouver, 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. Summer schools of art are sponsored by some of the foregoing institutions, by universities, and by various independent groups.

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 adults, radio talks, lectures and often concerts are features of the programs of the various galleries. Many of these institutions supply their surrounding areas with travelling exhibitions, and organizations such as the Maritime Art Association, the Western Canada Art Circuit, the Art Institute of Ontario and the Queen's Art Circuit have been founded to carry on the work on a regional basis. The National Gallery of Canada has a nation-wide program of this nature. It is the third largest circulating agency in North America. The principal 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 Toronto, Toronto, Ont.
Art Gallery of Hamilton, Hamilton, Ont. Winnipeg Art Gallery, Winnipeg, Man. Norman Mackenzie Art Gallery, Regina, Sask. Edmonton Art Gallery, Edmonton, Alta. Calgary Allied Arts Centre, Calgary, Alta. Vancouver Art Gallery, Vancouver, B.C. Art Gallery of Greater Victoria, Victoria, B.C.

Other Art Organizations.-The leading art organizations of national scope, exclusive of museums and art galleries, include the following:-

Association of Canadian Industrial Designers
Canadian Arts Council
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 and Townplanners
Community Planning Associationo of Canada
Federation of Canadian Artists
Royal Canadian Academy of Arts
Royal Architectural Institute of Canada
Sculptors Society of Canada.
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. The group of pictures that formed the nucleus of the collection was selected by the Marquis. 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 such 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 Minister of Citizenship and Immigration. 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-and, for the first time, the Gallery had adequate well-lighted space for hanging its permanent works of art 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 national 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 of Old Masters include twelve important works acquired from the Liechtenstein collection; extensive war collections; the Massey collection presented to the Gallery during 1946-50 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, established in 1921 and the first to be organized in a Canadian art gallery, now consists of more than five thousand 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 operation of an Exhibition Extension Service which prepares and circulates travelling exhibitions, provides educational services such as lectures offered to the general public across Canada, and organizes guided tours for visitors to the Gallery at Ottawa; the production of publications, films, reproductions, didactic exhibitions and other aids to art appreciation; and assistance to Canadian artists participating in important international exhibitions such as the Biennials held in Paris, Venice and São Paulo. The Conservation and Scientific Research Division of the Gallery handles requests for technical information, investigations and restoration of paintings and other specialized problems concerning the handling of precious works of art. It is intended that the research laboratories will become the national centre for scientific research in the conservation of works of art.

## Section 2.-Museums and Education

Modern museums, in Canada and elsewhere, are breaking away from the old concept of 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 show actual, original objects rather than merely offering descriptions or pictures of such objects. Canadian museums of history and science offer many educational services to the public in addition to providing exhibits that are both interesting and informative. The following museums have staff members who are specifically charged with organizing programs in education and providing extension services:-

> Nova Scotia Museum, Halifax, N.S.
> McGill University Museum, Montreal, Que.
> National Museum of Canada, Ottawa, Ont.
> Royal Ontario Museum, Toronto, Ont.
> 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 series of lectures or film showings from autumn to spring, and possibly some special showings during the tourist season. Guided tours for adult groups are 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 had regular radio or television programs, and others have made occasional contributions. Some historical museums have annual events during which the arts, crafts or industries represented by the exhibits are demonstrated to the public.

Through such activities and methods, Canadian museums serve as important adjuncts to the educational system and as centres for informal education, both juvenile and adult. Thus, they take their place with public libraries as major auxiliaries in the educational program of Canada.

## Section 3.-The Educational and Cultural Functions of the Canadian Broadcasting Corporation

Many hours of educational or semi-educational programs are broadcast annually by the Canadian Broadcasting Corporation in English and in French. 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. The fiscal year 1962-63 was a busy one for the CBC programmers involved in educational, cultural and youth programs.

Pre-school Broadcasts.-A number of programs are planned for children from three-and-a-half to six years of age. The aim is to have these at the same time educational and entertaining. Both Playroom (radio) and Nursery School Time (television) base their planning on the advice of kindergarten and nursery school experts. The topics acquaint the child with new and interesting aspects of life about him, in his home and in his community.

The English television network regularly carries the production Chez Helène to introduce the French language to the pre-school child by means of the successful Tan-gau method of instruction. In another television series-The Friendly Giant, a highly popular story-telling program-entertainment is combined with an effort to develop in the child an awareness of social values.

For the first time since CBC television began operating, regular morning network programming was scheduled for October 1963. Chez Helène, Nursery School Time, the national school broadcasts and other educational programs are being telecast in the 10-11 a.m. period across Canada.

School Broadcasts.-The CBC provides an active schedule of school broadcasts which are planned according to recommendations made to the School Broadcasts Department by a group of educators representing each of the provincial Departments of Education. This body is known as the National Advisory Council on School Broadcasting. The programs produced have the aim of enriching the curricula, adding to the students' comprehension and appreciation of a topic through the use of the varied resources of radio and television. For example, in radio, an annual presentation of a Shakespearean play by the best actors in the country gives many students across Canada their only opportunity
to hear a dramatization of such a play. The radio schedule each year also contains dramatizations of events in Canadian history, along with many other topics. In co-operation with the Quebec Department of Youth, the CBC in 1962-63 started a service of school broadcasts in that province, thus providing school broadcasts in all ten provinces. While most of these broadcasts are presented on a regional or provincial basis, a number of informational programs were offered on the English radio and television networks covering a wide range of school subjects from literature to folklore, from physics to physical education. On the French networks the subjects covered a similar range for students at both primary and secondary levels.

Leisure Programs for Children.-Programs that do not relate to a specific school curriculum but still have a broadly educational or informational purpose are presented for children. The program Time of Your Life for children of ten to fifteen years of age presents four types of shows-the magazine type, feature films, dramas and music specials. On the French network, programs such as Pirouette and $A m$-stram-gram fulfil a purpose similar to that of Time of Your Life. Other programs presented for children by the French network include Coucou, Orientation, Images en tête, Pierres vivantes and À la pointe de l'exploration.

A number of experiments in programming for both the English and the French networks have begun, such as the natural science program La vie qui bat, which appears in English under the title This Living World.

Adult Education.-Programs of an adult education nature are presented frequently by the CBC on its radio and television services and are planned in co-operation with various educational organizations. The CBC is an active participant in the work of 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.

Citizens' Forum, a series telecast for the past eight years, uses discussions, public debates and small seminars to describe important issues of the day. It is arranged jointly by the Canadian Association for Adult Education and the CBC. Its French counterpart, Place publique, has been planned in co-operation with La Société canadienne d'éducation des adultes. Similar types of programs are prepared specially for rural listeners under National Farm Radio Forum which is arranged by the CBC in co-operation with the Canadian Federation of Agriculture and the Canadian Association for Adult Education. This unique educational program involves listening groups who continue the discussion of the topic at the conclusion of the program and funnel their opinions to provincial and national centres for use and distribution. Other daily service and educational programs are provided for farmers. Country Calendar and Country-time are weekly half-hour TV programs of a service and educational nature designed to keep farmers and the general public in tune with agricultural conditions and developments. Le reveil rural on radio and Les travaux et les jours on television are French-language counterparts of the English farm programs.

For more than a decade the summer evening sessions of the Couchiching Conference have been broadcast. This week-long conference, organized jointly with the Canadian Institute on Public Affairs, examines Canadian and international affairs in open meetings and group discussions. Other radio programs of an educational nature are Science Review, which examines important discoveries in the field of the natural sciences and their branches; life; University of the Air, a series varying from four to eight talks prepared and broadcast by distinguished professors in their particular fields; and, on the French radio network, L'université radiophonique internationale, a series of talks exchanged with other countries on cultural and scientific subjects.

On the French network, Les Chansons de la maison presents a series of programs relating to parents and children, and general questions sent in by parents are answered
by psychologists. For women listeners, the daytime program Fémina is presented five times a week. The French network 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.

In addition to Citizens' Forum, regular television programs are Close-Up, Premier Plan and Background. The first two present weekly half-hour interview and documentary programs in which the emphasis is on the programs involved. The latter offers six onehour documentaries on the background of significant issues, events and ideas, both international and domestic. Inquiry is a weekly program on national affairs produced in Ottawa. The Lively Arts is a weekly program of insight into the creative process. The Nature of Things describes the work of scientists and science for an audience whose only preparation may be curiosity about the world around them. Take Thirty, a new week-day show for women, has a different 'flavour' 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; interviews of men and women from the sporting world. The closest radio counterpart of Take Thirty is TransCanada Matinee. In View examines the arts and North American attitudes toward them, calling for comments from guests who are closely associated with the field under discussion. Explorations, a series of documentaries and dramatizations, examines questions in the fields of sociology and history. Special programs on the Winter Conference of the Canadian Institute on Public Affairs are also telecast; this three-day conference examines sociological questions in open meetings and group discussions.

Since the consolidation of the CBC's English-language radio networks, radio station CJBC in Toronto has had to alter its role significantly. The most striking result has been the scheduling of a comprehensive two hours of adult-educational programming nightly, Monday through Friday, under the general title of The Learning Stage. The program deals with literature, sociology, science, music, labour relations, philosophy, ecology, creative processes, theatre, arts, ethics, political science and French.

In co-operation with universities in Toronto, Montreal and Ottawa, locally broadcast television series are prepared under the title Live and Learn. These programs are designed to give a general appreciation of academic subjects such as physics, chemistry, literature and psychology. Experiments in the production of courses for university credit are in progress in Montreal.

## Section 4.-The Educational and Cultural 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 also produces and distributes filmstrips and still photos 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.

A substantial proportion of the Board's production and distribution program is concerned initially with television at home and abroad. Series of original films are shown regularly over English 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 External Affairs and Trade and Commerce, through National Film Board territorial offices at London in England, New York and Chicago 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 5.-The Canada Council

As a result of recommendations made by the Royal Commission on National Development in the Arts, Letters and Sciences, appointed in 1949, the Canada Council was established in 1957 to promote the study and the enjoyment of, and the production of works in the arts, humanities and social sciences. A sum of $\$ 100,000,000$ from the public treasury was granted to the Council, one half of which was placed in a University Capital Grants Fund to assist institutions of higher learning to expand their building facilities in the arts, humanities and social sciences, and the remainder set up as an Endowment Fund, the current annual income from which is approximately $\$ 3,000,000$.

The Council is made up of 19 members appointed by the Prime Minister for terms of three years, plus a chairman and a vice-chairman who are selected for five-year terms. Members are ineligible for reappointment during the 12 months following their second consecutive term on the Council. The organization must meet at least three times a year to consider applications made to it by organizations and individuals across the country. The day-to-day administrative work is carried out by a permanent staff in Ottawa.

University Capital Grants Fund.-One of the principal responsibilities of the Council is toward Canada's institutions of higher education. The Fund enables the Council to make grants to universities and other institutions of higher learning by way of capital assistance in respect of building projects, with the following limitations: (1) a grant for any one project may not exceed one half the total expenditure made in respect of that project; (2) in any province the aggregate of the grants made may not exceed an amount that is in the same proportion to the aggregate amount credited to the University Capital

Grants Fund as the population of the province (latest census) is to the aggregate population of the provinces in which there is a university or other similar institution of higher learning. By the end of $1962, \$ 35,000,000$ had been authorized for payment by the Council and more than 70 institutions had drawn upon the Fund for a wide variety of buildings; libraries, classrooms and residences claimed the major share.

Aid to Individuals.-Because in 1957 less than 10 p.c. of the graduate fellowships available in Canada were for studies in the humanities and social sciences, the Canada Council allocated over $\$ 1,000,000$ from the income of the Endowment Fund to the establishment of a scholarship and fellowship program to assist in meeting the rapidly growing needs of the future for university teachers. In five years, more than 2,200 scholars have been aided through awards at the master's, doctorate and postdoctorate level. As a further stimulus to academic pursuits, grants are made to universities to enable them to bring outstanding lecturers to their campuses and travel grants are awarded to permit Canadians to attend international conferences and thus maintain contact with scholars from other countries.

Individual assistance is also given in the arts. By the end of 1962 , nearly 700 scholarships had been awarded to enable singers, dancers, painters, writers and other performing and creative artists to continue their studies or perfect their arts. Other artists had benefited from the Council's program of commission grants; such grants enable theatres, orchestras, soloists, art galleries or museums to commission and perform or display original works by Canadian artists.

Aid to Organizations.-A large proportion of the revenue from the Endowment Fund is devoted to a program of assistance to organizations in the arts and letters. Since income from this source is strictly limited, the Council seeks to support the best talent, which involves a very large investment in some of the major population centres and at the same time covers all areas of the country. This it does by combining grants for excellent service in local or regional areas with awards to enable organizations to travel to remote parts of the country where the arts are less readily available. It also seeks to ensure local support by insisting that organizations receiving grants find additional revenue from other sources. In the year ended Mar. 31, 1962, the Council gave about $\$ 1,571,000$ to organizations in the arts, humanities and social sciences. Nine symphony orchestras received a total of $\$ 245,000$ and $\$ 174,000$ went to other musical organizations including choirs, string orchestras and chamber ensembles. More than $\$ 7,000$ was spent to enable music groups to tour and $\$ 9,000$ was awarded to permit the commissioning of new works. About $\$ 482,000$ was granted to promote the theatre, opera and ballet; of this amount, some $\$ 170,000$ went to the National Ballet Company of Canada, the Royal Winnipeg Ballet and Les Grands Ballets Canadiens. A total of $\$ 88,000$ over two fiscal years went toward helping opera in its 1962 season, and $\$ 140,000$ was awarded to the theatre. Festivals in Stratford, Vancouver and Montreal received $\$ 75,000$ in assistance from the Council, and a sum of $\$ 27,000$ was allocated to the Canada Council Train to introduce more Canadian students to the best Shakespearean drama. The visual arts received about $\$ 117,000$ and $\$ 51,000$ was awarded in aid to publication, bringing to just over $\$ 1,157,000$ the amount spent on the arts.

Considerably less assistance went to organizations in the humanities and social sciences since the bulk of the scholarship program is directed toward these subjects. Aid was given to visiting lecturers, to publications and to several academic projects. Altogether, $\$ 414,000$ was given for these purposes.

UNESCO.-The Act establishing the Canada Council also provided that the organization should undertake certain functions in relation to the United Nations Educational, Scientific and Cultural Organization. The Council accordingly established a National Commission for UNESCO with 26 members and approximately 30 organizations with "co-operating body status", and also provided the secretariat for the Commission. With
the assistance of the National Commission, the Council is responsible for the co-ordination of UNESCO program activities in Canada, for Canadian participation in UNESCO program activities abroad, and for proposals for future UNESCO programs. In all these matters the Council works in close association with the Department of External Affairs and serves as the normal channel of communication between the Department and the Commission. In the year ended Mar. 31, 1962, the Council spent close to $\$ 50,000$ in addition to indirect administrative expenses on the UNESCO program.

## Section 6.-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 members, at least one of whom must be from each of the ten provinces.

By 1961, although the Library was still housed in temporary quarters and only a limited purchasing program could be undertaken, the book collection consisted of about 250,000 volumes, supplemented by micro-copies of more than 100,000 additional titles. Under the terms of the Copyright Act and the Library's own Book Deposit Regulations, 5,855 titles were received in the year ended Mar. 31, 1962, 3,097 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 11,000 items in 1961; these included trade and general publications, and official publications of the federal and provincial governments. Canadiana, which has been published since 1950, is cumulated annually and a cumulated index is planned.

The National Union Catalogue lists nearly $8,000,000$ volumes in more than 175 government, university, public and special libraries in all provinces. New accessions are reported regularly by these libraries, and the Union Catalogue thus forms a continuously up-to-date key to the main book resources of the country. During the year ended Mar. 31, 1961, the Reference Division was asked to locate 14,409 titles and it is noteworthy that copies of 75 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.

In addition to Canadiana, the National Library publishes Canadiana Selections, a short list of notable books issued in Canada during the past year, and also publishes an annual cumulation of the Canadian Index to Periodicals and Documentary Films.

Public Libraries.-Public libraries in Canada are organized under provincial public library legislation and direction, and are operated and regulated by municipal and regional boards. In 1961, there were 825 public libraries serving cities, towns and villages, and 50 regional and provincial public library systems. The total stock of all public libraries in Canada was almost $15,500,000$ volumes, just over one volume per person served and somewhat less than one volume per capita of the total population. Circulation was over $60,000,000$, or about four volumes per capita. Almost half of this circulation was to boys and girls in the age group of 5-14 years.

In addition to circulating books, periodicals and pamphlets, large public libraries maintain reference collections for use in the library, and provide audio-visual materials, such as films, filmstrips and sound recordings, for loan or use in the library. Other special activities include bookmobile service to schools and other community depots, story telling, plays and projects for juvenile readers, club activities, adult education groups and programs, and service to hospitals, reform institutions and camps.

Local funds accounted for about 85 p.c. of the support of public libraries in 1961, and provincial grants for the remainder. The current operating payments of all public libraries were the equivalent of $\$ 1.06$ per year per capita in 1961.
1.-Summary Statistics for All Public Libraries, 1961

| Province or Territory | Population Served | Libraries | Stock of Books, Periodicals and Pamphlets | Circulation | Current Operating Payments | Full- <br> Time <br> Staff |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | \$ | No. |
| Newfoundland. | 457,853 | 3 | 363,294 | 877,699 | 139,412 | 34 |
| Prince Edward Island | 104,629 | 2 | 122,355 | 240, 172 | 54, 218 | 9 |
| Nova Scotia. | 471,892 | 13 | 395,852 | 1,782,795 | 707,394 | 101 |
| New Brunswick | 149, 834 | 6 | 102,261 | 593,812 | 147,397 | 26 |
| Quebec.. | 2,952,431 | 218 | 2,391,032 | 4,348,260 | 1,736,333 | 284 |
| Ontario... | 5,984, 184 | 317 | 7,779,415 | 33, 319,907 | 10,510,464 | 1,415 |
| Manitoba. | 792, 226 | 16 | 449,696 | 2,362,896 | 796,803 | 120 |
| Saskatchewan | 925,181 | 76 | 689,464 | 2,293,957 | 973,840 | 125 |
| Alberta. | 1,331,944 | 135 | 1,266,868 | 4,989,431 | 1,388,370 | 229 |
| British Columbia.............. | 1,629,082 | 75 | 1,806,401 | 9,783,874 | 2,841,009 | 402 |
| Yukon and Northwest Territorie | 12,423 | 14 | 29,637 | 11,380 | 4,767 | - |
| Totals, 1961. | 14,811,679 | 875 | 15,396,275 | 60,604,183 | 19,300,007 | 2,745 |
| Totals, 1960 r | 14,349,449 | 846 | 13,866,935 | 56,187,325 | 17,354,429 | 2,527 |

University, College and School Libraries.-In 1960-61, the 34 larger Canadian institutions of higher education had almost $7,000,000$ volumes in their collections to serve over 100,000 students, representing 87.7 p.c. of all full-time university enrolment in Canada. Their expenditures averaged almost $\$ 60$ per full-time student and they had 946 full-time employees, almost one third of whom were professional librarians.

According to school board reports, almost half of the public elementary and secondary schools in centres of over 10,000 population had centralized libraries in 1961. The 1,613 libraries served almost $1,000,000$ pupils, and averaged 2,700 volumes for 588 pupils. Average expenditure for books and other library materials was $\$ 2.36$ per pupil served.

## 2.-Book Stocks in the Larger Academic Libraries and Enrolment Served, by Province, Academic Year 1960-61

| Province | University and College Libraries |  |  |  | Centralized School Libraries |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Libraries | Volumes | Enrolment Served | $\left\lvert\, \begin{gathered} \text { Expend- } \\ \text { itures } \\ \text { per } \\ \text { Full-Time } \\ \text { Student } \end{gathered}\right.$ | Libraries | Volumes | Enrolment Served | $\begin{gathered} \text { Payment } \\ \text { for } \\ \text { Books } \\ \text { per } \\ \text { Pupil } \end{gathered}$ |
|  | No. | No. | No. | \$ | No. | No. | No. | § |
| Newfoundland .i.... | 1 | 60,000 | 1,238 | 57.58 |  |  | 1387 | $\ddot{0.97}$ |
| Prince Edward Island. <br> Nova Scotia | 3 | З57, 279 |  |  | 2 59 | 5,644 98,136 | 1, 28.3878 | ${ }_{0.66}$ |
| New Brunswick. | 2 | 210,322 | 2,997 | 58.73 | 36 | 72,530 | 19,351 | 0.68 |
| Quebec... | 8 | 1,881,557 | 35,154 | 29.65 | 494 | 1,090,003 | 248,478 | 3.06 |
| Ontario. | 13 | 3,065, 134 | 27,705 | 93,17 | 512 | 1,445,287 | 369,441 | 1.94 |
| Manitoba. | 2 | 309,744 | 4,959 | 54.22 | 73 | 239, 404 | 48,376 | 3.82 |
| Saskatchewan......... | 1 | 211,719 | 4,828 | 51.51 | 50 | 148,891 | 20,248 | 2.58 |
| Alberta...... | 2 | 321,952 | 6,803 | 83.12 | 182 | 532,328 | 75,834 | 3.81 |
| British Columbia..... | 2 | 575,679 | 12,618 | 65.89 | 205 | 693,882 | 137,979 | 2.48 |
| Totals............ | 34 | 6,993,386 | 100,390 | 59.63 | 1,613 | 4,326,105 | 949,112 | 2.36 |

Special Libraries.-More than 300 government, business, technical and professional ibraries exist in Canada, chiefly in Montreal, Ottawa and provincial capitals. These
libraries are designed chiefly to serve the personnel employed in their respective establishments. The most recent available data (for 1956-57) show 84 Federal Government libraries with more than 2,500,000 books and pamphlets; 91 provincial government libraries with a total stock of over $2,000,000$; and 154 private business, professional and technical libraries with almost $1,500,000$ volumes. These special libraries employed more than 1,000 full-time staff in 1956-57.

Professional Librarians.-Canada has five Library Schools-at the Universities of Montreal, McGill, Ottawa, Toronto and British Columbia-which award a Bachelor of Library Science degree upon completion of a one-year postgraduate training course. In 1962, 201 persons graduated, joining the ranks of the more than 2,000 professional librarians in all types of libraries in Canada. The median beginning salary for the 1962 graduates was $\$ 4,800$.
3.-Median Salaries of Librarians in Professional Positions, 1960-61

| Position | Public Libraries in Centres over 25,000 Population | Regional and Co-operative Publie Libraries | Provincial Public Library Services | University and College Libraries ${ }^{1}$ | Total Professional Librarians |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | \$ | No. |
| Chief Librarian ......... | 6,832 | 5,125 | 6,333 | 8,167 | 128 |
| Assistant Chief Librarian.............. | 6,999 |  |  | 7,600 | ${ }_{192}$ |
| Division, Department or Branch Head. General Librarian................... | 6,336 5,129 | 4,833 3,975 | 6,350 5,107 | 6,265 4,884 | 192 667 |
|  |  |  |  |  |  |

${ }^{1}$ 1961-62 figures.

## PART III.-SCIENTIFIC AND INDUSTRIAL RESEARCH

## Section 1.-The National Research Council*

History and Organization.-Organized research in Canada on a national basis dates from 1916 when the Government of Canada established the Honorary Advisory Council for Scientific and Industrial Research-now known by the short title "National Research Council". The early Council provided for 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. This promotion and encouragement of research formed the basis of the Council's work from 1916 to 1924.

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 in science applied to the industries of Canada, had been urged as early as 1918. A special committee of Parliament endorsed the proposal and in 1924 the Research Council Act was revised to include national research laboratories. Temporary quarters were secured and research on magnesian refractories for steel furnaces was carried out so successfully that a wartime 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, Ottawa, was opened in 1932 and in 1939 construction was begun of an aerodynamics building on a 130-acre site 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 has been in operation since June 1948, and an Atlantic Regional Laboratory on the campus of Dalhousie University in Halifax, N.S., was opened in June 1952.

[^104]Under the terms of the Research Council Act, the National Research 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; investigation and standardization, at the request of industry, of industrial materials or products; and research intended to improve conditions in agriculture. The Council also has the duty of advising the Privy Council Committee on questions of scientific and technological methods affecting the expansion of Canadian industries or the utilization of the country's natural resources.

The Council's laboratories are organized in nine divisions and two regional laboratories, each with its own director. Five divisions are engaged in applied and fundamental studies in the natural sciences-applied biology, applied and pure chemistry, and applied and pure physics. 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 resources of the Prairie and Atlantic regions.

During World War II, the Council was responsible for all research carried out for Canada's three Armed Services. After the War, most of the military work was transferred to the Defence Research Board (see Chapter XXV). Another wartime development, the Atomic Energy Project, was constituted as a separate Crown company, Atomic Energy of Canada Limited, in 1952 (see pp. 368-373).

A Medical Research Council, fully responsible for the support of medical research but functioning under the general administration of the National Research Council, was established in November 1960 (see pp. 268-270).

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 Parliament through the Committee of the Privy Council on Scientific and Industrial Research.

The Council's current operating budget is about $\$ 46,000,000$. Approximately $\$ 17,000,000$ is required for foundation work-scholarships and research grants in science and engineering, plus the activities of the Medical Research Council-and the remainder is used to operate the laboratories and to provide for the Council's Industrial Research Assistance Program. Of the Council's 2,600 employees, some 730 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 90 p.c. 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 pp. 118-119).

One of the Council's most important activities is its Technical Information Service. This 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. All inquiries are handled but the Service is particularly interested in helping small firms with no research or information facilities. Free advice is given on 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. Operating in the last six months of 1962-63 (October to March, inclusive) the program resulted in 62 new research projects involving 44 Canadian companies. With a dollar value for the sixmonth period of $\$ 1,700,000$, the work created more than 260 new research positions.

Foundation Aspects.-University research in science and engineering has been supported by the Council since its inception in 1916. This aid has been of considerable help to the universities in building up the excellent graduate schools that now exist in Canada. Awards to individuals make up most of the university support program. Included are research grants to university staff used for employing assistants and purchasing equipment and supplies, postgraduate scholarships, and postdoctorate fellowships. Approximately 1,200 research grants and 720 scholarships and fellowships were awarded in the year ended Mar. 31, 1963 at a cost of $\$ 10,395,000$.

General promotion and encouragement of university research-the remainder of the program-includes publication of six Canadian journals of research; contributions to scientific organizations and functions, Canadian membership in international scientific unions, and the administrative costs of the program. Expenditures for these activities in 1962-63 were $\$ 1,103,000$. An Annual Report on University Support describes the foundation program in detail.

In 1948 the Council instituted a program of postdoctorate fellowships, open to Canadians and to the nationals of all other countries. Originally these were tenable in the Council's own laboratories but the training and experience brought to the work by the young scientists proved so stimulating that the program has been gradually expanded. Fellowships are now tenable at Canadian universities (these are considered part of the university support program), in the laboratories of Atomic Energy of Canada Limited, and in the federal Departments of Agriculture, Forestry, Mines and Technical Surveys, and National Health and Welfare. More than 250 of these awards are being held at the present time (March 1963), mostly in chemistry, physics and biology.

Applied Biology.-This Division's program covers practical problems related to the national economy and fundamental studies in microbiology, biochemistry and biophysics as a basis for future application in agriculture, medicine and industry.

Apparatus and techniques for preparing, preserving and storing food make up a large part of the work, with particular attention in recent years to food freezing, cold storage and refrigerated transport. Recent studies have involved further tests on a process developed in the Division and 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 preventing coagulation in evaporated milk during sterilization were also investigated. Microorganisms related to the preparation and preservation of food are studied, particularly those found in salted foods and in cheese, and those that grow at low temperatures. A national culture collection of about 3,000 yeasts, bacteria and fungi is maintained.

Considerable effort is devoted, also, 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 also serve to explain practical problems such as the high death rate of newly born caribou. Fundamental plant processes such as translocation are investigated, and an exhaustive study is being carried out on strains of blue-green algae believed responsible for cattle deaths. Plant fibres such as cellulose-the skeletal material of plants-and the structure and function of plant cells are also examined.

Other studies involve fermentation mechanisms and enzymology, and the structures of proteins, carbohydrates and fats. One group, among its other projects, is engaged in long-term statistical studies of protein variability in wheat and wheat exports. The work has been expanded recently to include the effects of weather factors on protein content.

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 solving 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 liquid surrounding it. This work was expanded recently 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-has resulted in the successful preparation of a stable polymer that could not be produced by conventional means.

The twelve sections of the Division are: analytical chemistry, chemical engineering, colloid chemistry, kinetics and catalysis, metallic corrosion and oxidation, metallurgical chemistry, applied physical chemistry, physical organic chemistry, high polymer chemistry, high pressure, rubber and textiles. 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 is organized around a nucleus of outstanding Canadian chemists who direct about 50 young postdoctorate fellows from all over the world. The work consists of long-term fundamental investigations in physical and organic 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, and the application of high resolution proton magnetic resonance techniques to the study of hydrogen bonding and other molecular interactions. Still others study certain aspects of surface chemistry such as 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 small group interested in the chemistry of fats and oils, and one engaged in fibre research.

Applied Physics.-The work in Applied Physics is divided between research projects likely to be of practical value and the continual development of the fundamental standards on which measurements generally are based. All the fundamental physical standards for Canada are housed and serviced in this Division, which now has primary standards equal to any in the world in the fields of mass, length, time, electricity, temperature and radiation. The sections of the Division are: acoustics, electricity and mechanics, heat and solid state physics, instrumental optics, interferometry, photogrammetric research, radiation optics, special problems, and X-rays and nuclear radiations. Industrial problems receive considerable attention, particularly calibration work and industrial noise abatement.

Examples of specific projects now under way include a study of colour tolerances in the production of coloured materials, a special type of lighting unit expected to be particularly useful at airports, the thermal and electrical properties of ceramics (important in rocketry, nuclear energy and other fields), and the establishment of an international standard neutron source. Work has continued on the measurement of line standards of length in terms of wave-lengths of light, and on the use of atomic or molecular properties to define time intervals. Several of the Division's developments are now being produced commercially. Among these are noise-excluding high fidelity earphones, a revolutionary analytical plotter for making maps from aerial photographs, a six-figure potentiometer, and a precision direct reading thermometer bridge.

Pure Physics.-Investigations are under way on cosmic rays and high energy particle physics, low-temperature and solid-state physics, spectroscopy, X-ray diffraction, and theoretical physics. The work is on fundamental problems that do not have immediate application but advance the frontiers of knowledge and supply the basis for further progress in the applied fields. Important advances in the study of cosmic rays and energetic particles have been made recently by means of a specially designed instrument package operating aboard the Canadian earth satellite Alouette. The package is sending back vital new information about the Van Allen radiation belts and about the artificial belts created by atomic explosions.

The low-temperature and solid-state group studies the electrical, thermal and mechanical properties of metals and semi-conductors especially at very low temperatures. The plasma physics group, only recently established, is expected to make basic contributions to a field which may, in the long run, prove to be of importance in problems of controlled nuclear fusion. In the spectroscopy group, the structures of atoms and molecules are investigated by means of their microwave, visible and ultraviolet spectra. The theoretical physics group is concerned with theoretical problems in atomic, molecular and nuclear physics.

The X-ray diffraction laboratory undertakes fundamental work in molecular and crystal structure and identification problems for government laboratories. X-ray diffraction methods are extremely valuable for identification purposes as they are non-destructive and require only very small amounts of material. Two of the major projects concern narcotics and vanadium minerals.

Building Research.-Technical improvements in housing are the primary concern of this Division. The research program therefore covers all aspects of housing design, building materials and components, and studies in soil, snow and ice mechanics. Regional stations engaged in research and information are maintained in Halifax, Saskatoon, Vancouver and Norman Wells.

Examples of Division projects are the behaviour of cement 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 the bearing strength of ice; the fundamental properties of various soil types, including permafrost and muskeg; frost action in soils; avalanche research; and the effects
on buildings of ground vibrations caused by blasting or 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.

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 half the total urban population of Canada. The Associate Committee on the National Building Code, whose secretariat forms one section of the Division, also establishes the building regulations for all housing constructed under the National Housing Act.

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 mechanics 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 tool for end-to-end joining of blood vessels by a simple stapling operation.

In hydraulics, a number of investigations and models have been made for improving Canadian harbours. A new kind of breakwater has been developed which absorbs waves rather than reflecting them, and a breakwater utilizing this principle has been constructed at Baie Comeau. A promising scheme has also 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, lubricants and injectors have been developed. A long-term study is being made of the possible use of gas turbines in locomotives. The application of gas turbines to aircraft taking off and landing vertically is also being explored, together with the thermodynamic, aerodynamic and control problems that this type of aircraft involves. Considerable research is also 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 is designed to meet the aeronautical research needs of military and civil aviation, to co-operate with the Canadian aircraft industry, and to carry out its own research program. Its studies therefore centre around problems of aerodynamics, aircraft structures and materials, and flight mechanics.

Aerodynamics research from low speeds up to about $4 \frac{1}{2}$ times the speed of sound is carried out in the Establishment's 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 structures and materials involves investigation of aircraft accidents, the fatigue and creep of aircraft structures, the determination of flight loads, aircraft design problems, and non-metallic materials. The latter study is part of a research for low density, high strength non-metallic materials resistant to high temperatures that could be used for structural purposes. 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; anti-submarine magnetometry; and the avoidance of aircraft collisions.

A growing and highly diversified program of assistance to smaller industries is developing. Most of the work relates to product development, product improvement, or testing.

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.

Engineering problems include long-distance transmission of high-voltage direct current, radio remote-control of navigational aids, current and potential transformer calibration, high-frequency standards, and the development of electronic medical instruments and operating-room facilities. The Division maintains the best-equipped antenna laboratory in Canada and provides considerable assistance in the development and manufacture of antennas and radomes.

Examples of recent developments by the Division are a radar-data transmission system which provides air traffic controllers with a continuous display of activity at two or more adjacent airports, a simple marine distress beacon operating in the frequency band used by RCAF Search and Rescue craft, and a creative tape recorder much in demand in electronic music studios. A highly mobile counter-mortar radar designed by the Division went into commercial production in 1961.

Fundamental studies are carried out on radio wave propagation, radio astronomy, upper atmosphere research, and electronic and solid-state research. A new radio observatory is being developed in Algonquin Park, where a 33 -foot diameter radio telescope is in operation. The Division also provides engineering support for Canada's upper atmosphere rocket-sounding program, and undertakes research in space electronics.

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 work follows three general lines: chemical reactions at high temperatures; structures and reactions of naturally occurring organic compounds; and the biochemistry and physiology of fungi, marine algae, mosses, lichens, ferns and higher plants. Examples of specific projects are studies on the collagenous proteins in cod tissues; the loss of ascorbic acid (Vitamin C) in potatoes during storage; and the dietary effects of seaweed components. The work on nutrition is related not only to food industries of the Atlantic Region but to the wider field of public health in general. The high temperature studies are aimed at providing basic information of use in steel-making and related industries. A certain amount of engineering work is also undertaken. Recent studies have centred around the development and use of a semi-continuous dryer for commercially important plant materials.

A recent development of considerable significance is the establishment of a close working relationship with Dalhousie University, Halifax. Under the new arrangement, students acceptable to the University's Faculty of Graduate Studies may now 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. In the long run, the objective is to help create a strong scientific background conducive to large-scale development by industry.

Prairie Regional Laboratory.-One of the chief aims of the Prairie Regional Laboratory is to develop wider uses for crops grown on the prairies. This is achieved by determining potential uses of crops now in production and by encouraging the production of new crops to meet specific needs. 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 to systematically study extractives from local plants and shrubs.

The engineering and process development group is engaged in research on continuous fermentation processes, pulping processes on wood and straw fibres, and the effects of glyceride structure of fats and oils on the quality of margarines and shortenings. Largescale processing and pilot-plant-scale operations are carried out. There is also a group working in the field of mycology, which is concerned with the production of new chemicals, antibiotics, alkaloids and amino acids.

Administration.-Administration of the foregoing laboratories is organized as a Division of Administration and Awards, which exists only to serve the scientist. The five service units of this Division are: Awards and Committee Services (Awards, Committees, Publications, Research Journals); Administrative Services (General Services, Purchasing, Personnel); Information Services (Technical Information Service, Library, Public Relations Office, and Liaison Offices in Ottawa, Washington, London, and Paris); Plant Engineering Services; and Legal and Patent Services. The latter group works closely with Canadian Patents and Development Limited (see pp. 118-119). An expert on economic research acts as special assistant to the Assistant Director, Information Services.

## Section 2.-Research in the Atomic Energy Field*

The high energy yield from the fission of uranium is the key to the prospect of economic nuclear electric 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 will be 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 20 p.c.) component is fuel fabrication.

For a few more years the major atomic energy activity in Canada is likely to be uranium mining and refining for export in support of military uses. A major transition, however, is taking place in which uranium production will give place to engineering and construction of nuclear electric generating stations. This phase will last until nuclear plants are established in such numbers and capacity throughout the world that the market for uranium revives and overtakes its former peak. There is some prospect that the economic advantages of the heavy-water reactors designed in Canada will lead to the adoption of this type in many other countries with the creation of a market for heavy water that could be produced competitively in Canada. The possible export of nuclear generating stations, heavy water, and uranium fuel is appearing as a new near-term prospect on a small but significant scale.

In Canada plans are already taking account of a revolutionary increase in the size of electricity-generating stations. The full-scale $200,000-\mathrm{kw}$. reactor at present under construction has come to seem small. Steam turbines and conventional stations are now appearing in larger capacities and the prospects of long-distance high-voltage transmission to interconnect centres of load, together with the lower unit power costs that result from operating on a larger scale, cause utilities to plan large generating stations of $2,000,000 \mathrm{kw}$.

[^105]and more. The Canadian design of nuclear power reactor appears capable of expansion to keep pace, and will yield even more benefit than the conventional plant in the resulting reduction of unit power cost.

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 Canadian policy is changing to allow such export from Canada. Since the planning and construction of major power plants takes many years, these trends are not expected to be extensively realized before the 1970's. However, the prospect has already had its effect on atomic energy research and development.

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.
(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.

The Atomic Energy Control Board does not itself conduct research, but it gives substantial grants to universities to further independent studies and to provide the equipment without which the universities would find it difficult to train the nuclear research workers of tomorrow. In the 1961-62 financial year its grants totalled $\$ 700,000$.

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 Mines and Technical Surveys, which carries out background research on the production and use of uranium, and with the Canadian Uranium Research Foundation, an organization which is supported by the industry and which is particularly interested in developing the nonnuclear uses of this metal.

Atomic Energy of Canada Limited (AECL) has an eleven-man Board of Directors, including individuals from private industry, public and private power companies and the universities. The Company's major plant is near Chalk River, Ont., and its Head Office and Commercial Products Division in Ottawa. A new research centre is under construction at Whiteshell, Man. The Nuclear Power Plant Division in Toronto directs the engineering of power reactors and nuclear generating stations. The first project was NPD, a nuclear power demonstration plant to produce $20,000 \mathrm{kw}$. of electricity, now in operation at Rolphton near the Chalk River establishment; its design and construction were carried out in collaboration with the Canadian General Electric Company Limited and The Hydro Electric Power Commission of Ontario. The Nuclear Power Plant Division of AECL, with the assistance of Ontario Hydro, is also designing and constructing a full-scale nuclear power plant, known as CANDU, which will supply $200,000 \mathrm{kw}$. of electricity to the Ontario Hydro system. This plant is being built at Douglas Point near Kincardine on Lake Huron. By agreement, Ontario Hydro will purchase the plant when it is in satisfactory operation. 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 1954, meets periodically at Chalk River 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 is under contract to design and construct WR-1, an organic-cooled experimental reactor, for the Whiteshell Nuclear Research Establishment. AMF Atomics Division of

AMF Canada Limited and CGE are AECL's chief contractors for fuel element fabrication, and other work related to Canada's nuclear power program is carried out in collaboration with Shawinigan Engineering, Orenda Engines Division of Hawker Siddley Canada Limited, Canadian Westinghouse Company Limited, Montreal Locomotive Works Limited and Montreal Engineering Company Limited. 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. AECL also lends general support to the nuclear and related studies of Canadian universities and lets contracts to the universities on specific problems.

In the international field, close ties are kept with the United States Atomic Energy Commission and the United Kingdom Atomic Energy Authority, both of which have 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 USAEC to spend $\$ 5,000,000$ in the United States on 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, Japan, Pakistan, Sweden, Switzerland, West Germany and, less formally, with Denmark, France, India and Norway. In India, a major experimental reactor-the Canada-India Reactor-similar to NRX at Chalk River was constructed and was formally inaugurated in January 1961.

Chalk River Nuclear Laboratories.-At this research and development establishment 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, a 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 early application in the technology of using an organic liquid as coolant in nuclear power reactors.

Since extracted plutonium is no longer required, the fuel in the NRX reactor has been changed from natural uranium metal to a combination of natural uranium oxide and a uranium- 235 aluminum alloy. The available neutron flux has been increased thereby while keeping the power at 42 megawatts. It is planned to revise the fuelling of NRU similarly at the end of 1963.

CANADIAN NUCLEAR REACTORS IN OPERATION, UNDER CONSTRUCTION OR APPROVED FOR CONSTRUCTION

| Name | Location |  | Power | Fuel | Moderator | Coolant | Use |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Zero Energy Experimental Pile (ZEEP)...... | Chalk River, Ont. | 1945 | 100 w . | Natural uranium metal or oxide | Heavy water | - | Lattice experiments |
| National Research Experimental (NRX)..... | Chalk River, Ont. | 1947 | $42,000 \mathrm{kw}$. | Natural uranium oxide and enriched uranium alloy | Heavy water | Ordinary water | Research and isotope production |
| National Research Universal (NRU)......... | Chalk River, Ont. | 1957 | $200,000 \mathrm{kw}$. | Natural uranium metal | Heavy water | Heavy water | Research and plutonium 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 University Sub-critical Reactor...... | Toronto, Ont. | 1958 | - | Natural uranium metal | Heavy water | - | Research and teaching |
| McMaster Nuclear Reactor (MNR).......... | Hamilton, Ont. | 1959 | $1,000 \mathrm{kw}$. | Enriched uranium metal | Ordinary water | Ordinary water | Research |
| ZED-2. | Chalk River, Ont. | 1960 | 100 w. | Natural uranium metal or oxide | Heavy water | - | Lattice experiments |
| Canada-India Reactor (CIR)................. | Bombay, India | 1960 | $40,000 \mathrm{kw}$. | Natural uranium metal | Heavy water | Ordinary water | Research and isotope production |
| Nuclear Power Demonstration (NPD)....... | Rolphton, Ont. | 1962 | $\stackrel{20,000 \mathrm{kw}}{\text { (electricity) }}$ | Natural uranium oxide | Heavy water | Heavy water | Power demonstration |
| Canadian Deuterium-Uranium (CANDU).... | Douglas Point, Ont. | 1964-65 | $200,000 \mathrm{kw}$. (electricity) | Natural uranium oxide | Heavy water | Heavy water | Power |

The research facilities of the NRX and NRU reactors have continued to attract individual scientists as well as teams from other countries. A team of Brookhaven (U.S.A.) and AECL scientists is using a neutron beam with a high-speed chopper and long flight path for nuclear interaction studies. Another team with scientists from Harwell (Br.) and other countries is using another system of choppers for studying details of the slowing-down of neutrons by moderators. Both in NRX and NRU the exceptional facilities for irradiations in high temperature water, steam and organic liquids have brought teams from Britain and the United States and individuals from West Germany and Sweden to conduct tests important for the design of future power reactors.

Nuclear Power Prospect.-The generation of electricity by nuclear power on a competitive economic basis is expected to be established by the type of reactor now under construction by the Nuclear Power Plant Division of AECL. This promise rests on the attainment of very-low-cost fuelling by an extremely simple system that has proved satisfactory in the Nuclear Power Demonstration Station reactor where there has been no fuel failure in the first year of operation. The fuel is uranium dioxide specially prepared from natural uranium entirely in Canada. A wide range of tests in hot channels in the NRX and NRU reactors at heat ratings and energy yields in excess of those required has established that this oxide fuel is incomparably more dependable than the uranium metal fuel for which the NRX and NRU reactors were designed. No provision for reprocessing the irradiated fuel is involved, for, by careful attention in the reactor design to minimizing any waste of neutrons, an energy yield of over 9,000 thermal megawatt-days is expected from a ton of uranium before it is discarded. This results in a prospective fuelling cost of about one mill ( 0.1 cent) per electric kilowatt-hour, to be compared with about three mills from coal at $\$ 8$ per short ton.

Canada has access to such an abundance of coal, oil and natural gas that the competitive cost level for electric power is lower than in many other countries. Nuclear power plants of the types now under construction in Britain and the United States have been assessed as unable to reach a low enough cost level, at least until several successive plants have been built and operated to discover where economies are possible. Plants of the CANDU type do not promise to be significantly cheaper in total initial outlay, but the fuelling cost can be so much less that meeting the competitive target is a very real prospect.

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. The full-scale plant will generate 220 megawatts with a steam-cycle efficiency of 33.3 p.c., so 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 9 -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 $19 \mathrm{rods}, 0.6 \mathrm{in}$. in diameter and 19.5 in. long, made of dense uranium dioxide in thin zirconium-alloy 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. The heat developed in the heavy water moderator that is in the tank outside the fuel channels is not directly used and amounts to about 35 thermal megawatts. The over-all net plant efficiency is then 29.1 p.c. These details show that the design represents a very 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 reactor power has been brought down from 790 to 700 megawatts and the length of fuel rod from 86 to 30 kilometres. 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. No reduction is expected until manufacturing experience has been gained that can be used in future construction, but thereafter appreciable reductions should be possible. A detailed breakdown of costs for CANDU was published during 1960. The conclusions are summarized in the following statement.


These figures will serve to explain why the first plants seem to find economic application in Canada only in the Ontario system, where annual charges on capital are low and coal has to be imported and costs about $\$ 8$ a short ton. Moreover, the demand for electricity in Ontario is growing at more than 200 megawatts capacity per year. To build reactors for lower powers saves little in the cost, so the cost per kilowatt rises and becomes uneconomical. Now that confidence has been gained from the early plants, higher powers seem possible and designs up to 750 electrical megawatts from one reactor are being studied.

Operating experience with the NRX and NRU reactors at Chalk River and with the many other types throughout the world has served to emphasize the great difficulty and costliness of making even minor operating repairs in the presence of the extremely high levels of radiation that are encountered around reactors. Directly and indirectly, this is responsible for the current hesitation to construct a number of large plants that for economic power cost no less than $\$ 40,000,000$ or $\$ 50,000,000$ each. With every new design it is necessary to acquire operating experience before the reliability and availability can be effectively estimated. Experience with defective fuel has been deliberately sought at Chalk River, because this is one of the difficulties most likely to be encountered. Appropriate techniques of locating the defective element, removing it and cleaning up the released radioactive fission products have been established and practised; at the same time fuel designs and ratings which lead to least difficulty in these operations have been studied. Experience of mechanical failures of control rods has lent weight to reactor designs such as NPD where control rods are not needed. Temperature changes are likely to provoke mechanical failures, so design is aimed at keeping the reactor at power for all essential operations including refuelling and complete maintenance testing and readjustment of instruments and working parts of the control system.

A study is in progress of the relative merits of four types of large power reactor for which development work is active. All are heavy-water-moderated and would not require any reprocessing of spent fuel. The fuel could be natural uranium or slightly enriched in the form of uranium dioxide or uranium carbide. The differences lie in the coolant and steam cycle. The four coolants are pressurized (perhaps partly boiling) heavy water (as in CANDU), fog or wet steam, ordinary boiling water, and an organic liquid. The fog and boiling water reactors would pass steam directly to the turbine; the heavy water and organic liquid would raise steam via a heat exchanger. It is apparent that in large sizes construction costs would be comparable but the small differences may be significant. A larger difference is in prospect from fuel fabrication costs. The cost of development of each type although high may be justifiable economically by the cost savings in appropriate circumstances. All appear competitive with conventional plants except locally where fuel is abundant at low cost.

## Section 3.-Space Research in Canada*

The most important event in Canadian space research during 1962 was the launching of the satellite 1962 Beta Alpha (Alouette). This satellite was designed and built in Canada and launched into orbit by the United States National Aeronautics and Space Administration on Sept. 29. The satellite carried a number of scientific experiments, but its main objective was the sounding of the ionosphere from above. The ionosphere is a diffuse layer of highly conducting gas lying between heights of about 60 to 300 miles.

[^106]It reflects radio waves over a wide band of frequencies and has a great practical importance in communications. The underside of the ionosphere has been studied for many years by the technique of sending a short pulse of radio wave up from the ground and measuring the time delay when the reflected pulse is received and the band of frequencies that are reflected. From the results of such studies the diurnal, seasonal and storm effects in the ionosphere are well known and this knowledge is of considerable value in making the maximum use of radio communication channels. However, the satellite Alouette was the first attempt to get a continuous sounding of the ionosphere from above. The satellite travels in a nearly circular orbit at about 600 miles above the earth's surface and, on command, will transmit radio pulses of varying frequency to the ionosphere and observe the reflected pulse from the top side of the ionosphere. This type of measurement is often referred to as the topside sounder.

Other experiments carried by the satellite include experiments on radio frequency waves from the sky and very low frequency electromagnetic waves whose propagation is influenced by the earth's magnetic field. Also included are a number of detectors to study cosmic rays, energetic particles in the Van Allen radiation belt and the artificial radiation belts introduced by high altitude nuclear explosions.

The over-all design of the satellite was carried out by the Defence Research Telecommunications Establishment. Some components were developed by Canadian industry and the cosmic ray instruments were the responsibility of the National Research Council. The cost of the launching vehicles, the actual launching and data recovery were undertaken by the United States (NASA) as part of its international co-operation program.

Data are transmitted from the satellite to ground stations. Stations in several countries are receiving them and sending the magnetic tape records to Ottawa for analysis. Most of the ground stations are part of the United States Minitrack satellite-tracking organization but three data-recovery stations were built in Canada specifically for Alouette and future ionosphere monitoring satellites. These are at Ottawa, Ont., Prince Albert, Sask., and Resolute, N.W.T. The orbit of Alouette is almost in a north-south direction, the plane of the orbit being tilted only $10^{\circ}$ from the earth's axis.

The satellite, though a striking space experiment, did not represent all of Canadian space activities during 1962. There is an important region of the upper atmosphere that is too low for practical satellite orbits and too high to be reached by balloons or aircraftthe region between heights of about 25 miles and 200 miles. This region is interesting in that it contains the absorbing layer in the lower ionosphere that causes radio blackouts and also includes the lower limit of aurora. While radio propagation through the regions tells a great deal about density of electrons, it gives little information on the chemical constitution of that very tenuous part of the upper atmosphere, or its state of ionization, or about the nature of the radiation or high energy particles that cause the ionosphere. And it is of particular importance to Canadian scientists to study the upper atmosphere at these levels in Northern Canada because the axis of the geomagnetic field is tilted toward Northern Canada and the production of the aurora and ionosphere disturbances that cause radio blackouts is closely associated with magnetic disturbances in polar regions.

To study these, direct measurements are necessary; that is, instruments must be carried up to the regions where the measurements are required and a practical way of doing this is to use rockets that are much smaller and cheaper than those needed for launching satellites. This technique, of course, preceded the launching of satellites and is still of great importance. A series of rockets (Black Brant) is being developed in Canada: Black Brant I, an experimental rocket, is now obsolete; Black Brant II is a 17-inch diameter rocket capable of carrying 150 lb . of payload to over 100 miles; Black Brant III is a smaller rocket 10 inches in diameter and has a design capability of carrying 40 lb . to 100 miles; Black Brant IV is a tandem combination of $I I$ and $I I I$; and Black Brant $V$ is an optimum design of Black Brant II. Black Brant II is being used extensively for scientific measurements and Black Brant III and IV will be ready during 1963. These rockets were developed for scientific purposes by Canadian industry with some government support.

Another method is to shoot a projectile containing the instruments out of a smoothbore gun, a method being tried by a group in the Engineering Faculty of McGill University with considerable support from the United States Defence Department. An old 16-inch gun has been adapted for this purpose and mounted at a site in Barbados. This is an interesting experiment but the shock of firing the gun introduces problems in design of the instruments being carried.

Space research activities are carried out by several Canadian universities as well as in government laboratories. In fact, upper atmosphere research is a field in which some university research workers have long been active. The National Research Council gives grants to university research workers in space research and, for advice in this field, the Council has formed an Associate Committee on Space Research whose membership includes representation from universities, government laboratories and government departments holding operating responsibilities relating to space technology. Because university space research experiments are usually carried out with the upper atmosphere sounding rockets of the Black Brant series, part of the Council's assistance is in supplying the rockets and co-ordinating arrangements for their launching at the Fort Churchill, Man., rocket-launching facility.

Another function of the NRC interest in space research is that of holding membership in the International Council of Scientific Unions' Special Committee on Space Research (COSPAR). This Committee consists of members representing ten international scientific unions and representatives of the National Academies or National Research Councils of countries that are active in space research. This Committee, though non-government in its organization (it represents academic and scientific interests not normally under the direct control of the governments of the countries concerned), has had considerable success in organizing international symposia on space science and has had a great influence in supporting international co-operation. This has been recognized in many references to COSPAR in the Proceedings of the United Nations Committee on the Peaceful Uses of Outer Space.

In addition to the scientific research activities, the construction of a satellite and the development of a series of sounding rockets, Canadian Government departments are taking part in many applications of space technology that affect their normal responsibilities. The first to come into common use are satellite applications to meteorology and communications. Meteorological satellites already have had a considerable influence in advancing the understanding of the world-wide weather pattern. The spread of Canadian territory across the northern hemisphere is such that a data read-out station in Eastern Canada will expand the coverage of transmission from meteorological satellites, particularly in closing the gap between ground stations in North America and Europe. The problem has been studied by the Meteorological Branch of the Department of Transport and an inter-government agreement has been reached for the building of a meteorological satellite data recovery station on Cape Breton Island.

In communications, the use of satellites has already been shown to have an extensive practical future in expanding the now overcrowded communication channels. The Telecommunications and Electronics Branch of the Department of Transport has the major responsibility in this field and an experimental ground station is being planned in cooperation with the United States.

In the organization of space research and practical application, Canada has not yet followed the United States plan of centring all non-military applications in one government organization. Canadian activities are considerable, however, and various groups in government and industry are taking advantage of developments in space research and technology to be consistent with their responsibilities and to meet the needs of Canadian industrial development.

## Section 4.-Other Scientific and Industrial Research Facilities

Aside from the research facilities and activities covered in Sections 1, 2 and 3, Canadian research is carried on by various federal agencies, provincial organizations, universities and industries. Several provinces in Canada have established provincial Research Councils to stimulate and support research on problems having special provincial significance. The universities, of course, form an extremely important part of the Canadian pattern of research. Much of their work is along fundamental lines but practical problems are not neglected, especially those of regional interest.

All three types of institutions-federal, provincial and university organizationshave an interest in problems of industrial significance; this is part of the current Canadian pattern of research. Though many Canadian industries now possess research facilitiessome of them quite extensive-the major part of industrial research to date has been done under government auspices.

Thus the unique problems of the country, particularly its large area coupled with a small population, have led to a typically Canadian organization of research, of which a very strong associate committee system is perhaps the most distinctive feature.

## Subsection 1.-Federal Organizations

Although research by industrial firms has been slow to develop in Canada, government research has 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 trade, 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. Federal agencies involved in research include the Departments of Agriculture, Forestry, Fisheries, Mines and Technical Surveys, National Defence, National Health and Welfare, and Northern Affairs and National Resources as well as the National Research Council and other Crown corporations such as Atomic Energy of Canada Limited. A system of committees, with nation-wide representation, eliminates unnecessary duplication of work from these national research organizations.

The scientific work of the Department of Agriculture is described in Chapter IX of this volume, the investigations conducted by the Board of Grain Commissioners in Chapter XIX, the specialized work in scientific forest research in Chapter X, scientific services concerned with Canada's mineral resources conducted by the Department of Mines and Technical Surveys in Chapter XI, investigational work of the Department of Fisheries in Chapter XIII, research of the Canadian Wildlife Service of the Department of Northern Affairs and National Resources in Chapter I, health and other research conducted by the Department of National Health and Welfare and other agencies in Chapter VI, work of the Defence Research Board in Chapter XXV, the work of the National Research Council at pp. 361-368 and atomic research at pp. 368-373.

## Subsection 2.-Provincial Organizations

The fact that only a few provincial research organizations exist does not indicate lack of interest in research by the provinces. 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. It assists universities, colleges, research groups, industries, provincial and federal departments and individuals by loans of equipment, grants, scholarships, 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 antibiotics, 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, and on pressures in underground strata. Its Geophysical Division is equipped to undertake all types of magnetometric, gravimetric, resistivity, seismic and electromagnetic explorations. The Technical Services Division provides free technical information to industries in the province and offers them research and development services and facilities in the fields of physics, chemistry and engineering, including operational engineering.

Saskatchewan Research Council.-The Saskatchewan Research Council carries out research in the physical sciences, both pure and applied, with the aim of improving the provincial economy. The Council is therefore particularly concerned with the commercial exploitation of provincial resources and the scientific aspects of business. Current emphasis is on water and mineral resources, fields of agriculture not covered by other organizations, and technical assistance to industry. Besides being actively engaged in its own projects, the Council, by the granting of funds, supports further research at the University of Saskatchewan. Its buildings, occupied by a permanent staff of about 45 persons and additional temporary staff, are situated on the university campus.

Research Council of Alberta.-The Province of Alberta set up a Scientific and Industrial Research Council 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 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. 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, and soils, and the Fuels Branch which includes work on coal, petroleum, natural gas, 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 under the immediate supervision of advisory committees and the Technical Advisory Committee of the Council; the latter is composed of senior officers of the Council and the government, with certain committee chairmen and university representatives.

The Council laboratories are located beside the University of Alberta campus.
British Columbia Research Council.-The British Columbia Research Council, under the sponsorship of the provincial Department of Industrial Development, Trade, and Commerce, provides a scientific and engineering staff with laboratories on the campus of the University of British Columbia. The objective 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 and technical knowledge. The Council provides three classes of service: a free information service in collaboration with the National Research Council; assistance to specific firms at cost where information cannot be supplied from existing knowledge; and, at the Council's expense, research on problems of general value to the industrial development of the province.

The 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, 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, biochemistry, textiles and engineering. Other Foundation departments, such as parasitology and physiography, are engaged particularly in studies related to Ontario's natural resources. 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.

The Hydro-Electric Power Commission of Ontario.-The Research Division of Ontario Hydro, with a staff of 300 , provides services for all technical activities of the utility, in engineering design, construction work, power utilization, and system operation and maintenance. In addition to solving specific problems, the testing, investigation and research work leads to important technical advances, including the development of new and better equipment. Ontario Hydro is thus enabled both to improve the performance of the power system and to effect economies. Members of the staff maintain close contact with research organizations and other power utilities, and participate in the committee work of major technical societies and of standards associations.

Electrical investigations explore methods of generating, transmitting, controlling, distributing and utilizing power, and seek improvement in equipment for these purposes. Some of the main fields of study are transmission at extra-high voltage; electrical insulation; system operation and control, and system protection against lightning; communications and telemetering; illumination; and power metering. Attention is given to the performance and efficiency of power equipment, to improved measuring techniques, and to means of minimizing the hazards of electric shock.

Structural and mechanical studies include the following: soil mechanics as related to foundations, roads, and earth dams and dykes; the physical properties of structural components and of numerous items such as conductor joints and line hardware; the mechanical performance and safety features of equipment and various types of machines; metals and metallurgy; welding materials, techniques and applications; atmospheric and underground corrosion of metals; stresses in materials and structures; noise and vibration conditions; and a variety of problems associated with the design, construction and maintenance of concrete structures, the application of masonry materials, and the production, placement and quality control of all concrete used.

In addition to chemical analyses and tests performed on a wide range of materials and products purchased, chemical research work is conducted with regard to such subjects as wood preservation, plastics applications, protective coatings, both vegetation and insect pest control, lubrication, liquid and gaseous electrical insulants, thermal insulation, air
pollution, corrosion prevention, and water treatment. Other studies contributory and supplementary to the main branches of work are carried on in the fields of physics, biology, petrology, statistics and mathematics. Operations research studies are used in determining optimum policies and procedures in vehicle replacement, inventory control, reserve transformer capacity, economic power dispatch of hydro-thermal systems, and time-series forecasting of power demands and lake levels.

## Subsection 3.-University Research

For many years research in the universities was directed toward obtaining knowledge for its own sake and was considered pure research. Later it was recognized that the conclusions of such research provided the basic information for applied science and before long the universities, because of their unique position in having trained specialists and equipment, were involved in both basic and applied research. During World War II they were encouraged to undertake emergency and other contractual research and since then the trend toward broadening the field of research, increasing the capacity of universities to educate advanced students, and procuring large-scale costly equipment has shown rapid advance. This has created new problems but has provided even greater opportunities for undertaking sizable projects which could not have been attempted otherwise, and has thereby tended to knit the university into the very warp of industry.

Research conducted in the universities falls into three broad categories: projects undertaken by the student under the guidance of a professor or committee to meet requirements for an advanced degree; research undertaken by the professor, which may be of a more or less continuous nature; and larger research projects undertaken co-operatively on a faculty or inter-faculty basis in university laboratories or in such specialized institutions connected with the university as medical research laboratories, institutes of microbiology and hygiene, science service laboratories and faculties of agriculture.

At the turn of the century only two universities in Canada were offering graduate work (Toronto and McGill) and few students proceeded to advanced studies. Growth was slow and uneven until after the Second World War, but then accelerated sharply. By 1960 there were 14 schools of graduate studies and at least ten other universities, some rather large, carrying on graduate work in one or more fields. Most of the graduate schools register several hundred students and the rate of increase in enrolment in these schools in recent years has been greater than that at the undergraduate level.

Not only is there a continuing increase in the number of graduate students and staff members engaged in research at universities, but both the scope and magnitude of current projects are vastly different from those undertaken during the early years of the century. At that time many of the experiments could be carried out with equipment such as glass tubing and dry cell batteries but now universities require for some of their research projects equipment costing hundreds or thousands of dollars, such as electron microscopes, mass spectrometers, cyclotrons, cobalt bombs, and electronic computers. The total range of individual or group projects is encyclopaedic. A few of the exciting new developments include: high altitude research (one project involves the projection of test materials and instrumentation 600,000 feet into space), an intensive study of ocean depths, further investigation into the cause and cure of cancer, and the unfolding of Canada's past through historical and archaeological research.

This increasing volume and cost of research places a heavy strain on the universities. The amount and kinds of research are limited by the availability of trained research specialists, the difficulty of providing adequate space and equipment, and the problem of securing necessary financial backing. Just under 15 p.c. of the total income of universities is spent on research, and the dollar value of research undertakings has increased from $\$ 5,000,000$ in $1952-53$ to $\$ 14,000,000$ in 1959-60.

Outside financial support comes primarily from four sources: agencies and departments of the Federal Government, provincial government departments, industry and private foundations. The contributions from these sources, of course, vary widely from university to university, but for all Canadian institutions the approximate division of contributions to research at the present time is as follows:-

|  | p.c. |
| :---: | :---: |
| Federal Government departments. | 22 |
| National Research Council. | 22 |
| Defence Research Board. | 13 |
| Provincial government departments. | 13 |
| Universities. | 9 |
| Industry.. | 7 |
| Other (including private foundations) | 14 |

## Subsection 4.-Industrial Research

Industrial research in Canada is changing very rapidly. In the past, industry in general was largely unaware of the value of research to its own development and to that of the country, partly because many Canadian companies were subsidiaries of companies in Britain and the United States and partly because small companies found it impossible to finance their own research. The problem was accentuated by the vast size of the country, the absence of concentration of similar industries and the proximity to the relatively large research facilities of the United States.

However, the emergence of Canada 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.

The latest DBS survey of expenditures on industrial research in Canada was conducted during the first half of 1960 and provided figures for the calendar year 1959 and estimates for the year 1960. These are summarized in the 1962 Year Book at pp. 346-350 and may be found in detail in DBS publication Industrial Research-Development Expenditures in Canada, 1959 (Catalogue No. 13-516).

## Section 5.-Federal Government Expenditures on Scientific Activities

Two surveys of expenditure of the Federal Government on scientific activities have been carried out by the DBS. The first survey requested information based on final expenditure for the year ended Mar. 31, 1959 and for expected expenditure based on departmental estimates for the year ended Mar. 31, 1960; the second survey requested similar information for the years ended Mar. 31, 1961 and 1962.

For the purposes of these surveys, scientific activities include all activities in the natural sciences concerned with the creation of new knowledge, new applications of knowledge to useful purposes or the furtherance of both the creation of knowledge and new applications. Included in scientific activities are scientific-research development, capital expenditures for research plant and equipment, scientific data collection, scientific information, and scholarship and fellowship programs.

The year ended Mar. 31, 1960 was one of readjustment in government scientific research, following a major change in Canada's aircraft development program, and expenditure dropped from $\$ 222,600,000$ in the previous year to $\$ 212,300,000$, or by 4.6 p.c.

However, research activity increased in 1960-61 and expenditure reached $\$ 228,800,000$, an increase of 7.8 p.c., and the budgeted outlay for $1961-62$ was reported at $\$ 258,900,000$, a further increase of 13.2 p.c.

## 4.-Summary Statistics of Federal Expenditures on Scientific Activities, Years Ended Mar. 31, 1959-62

Nots.-Data for the years ended Mar. 31, 1959 and 1961 are actual expenditures and those for the years ended Mar. 31, 1960 and 1962 are based on the annual departmental estimates presented to Parliament and are therefore subject to reduction as a result of postponements, cancellations or other changes of program plans.
(Millions of dollars)

| Activity and Department or Agency | 1958-59 | 1959-60 | 1960-61 | 1961-62 |
| :---: | :---: | :---: | :---: | :---: |
| Conduct of research-development, including planning and administering research-development and grants-in-aid of research. | 168.4 | 151.8 | 171.9 | 192.7 |
| Capital expenditures on research-development plant. ..................... | 30.7 | 33.0 | 34.2 | 37.0 |
| Scientific data collection.. | 18.1 | 20.6 | 15.7 | 21.1 |
| Scientific information. | 4.1 | 4.9 | 5.0 | 5.6 |
| Scholarship and Fellowship programs. | 1.3 | 2.0 | 2.0 | 2.5 |
| Totals, Scientific Activities. | 222.6 | 212.3 | 228.8 | 258.9 |
| Department or Agency- |  |  |  |  |
| Agriculture. | 27.2 | 31.1 | 28.4 | 31.7 |
| Atomic Energy . . . . . $\quad$. $\ldots$. . | 27.9 | 32.8 | 39.9 | 40.7 |
| Mines and Technical Surveys | 27.1 | 27.7 | 29.5 | 39.9 |
| National Research Council | 27.2 | 32.8 | 36.6 | 40.1 |
| National Defence. | 66.2 | 34.0 | 31.0 | 32.1 |
| Defence Research Board | 29.3 | 30.6 | 31.9 | 34.7 |
| Other departments. | 17.7 | 23.3 | 31.5 | 39.7 |
| Totals, All Departments or Agencies | 222.6 | 212.3 | 228.8 | 258.9 |

The six departments or agencies listed in Table 4 continue to account for a large part of all scientific activity in the Federal Government, although the 85 p.c. accounted for by these agencies in 1961-62 was a decrease from the 92 p.c. for which they accounted in 1958-59; the drop indicates growth in scientific activities in departments less active in past years. In the period under review, Atomic Energy of Canada Limited, the Department of Mines and Technical Surveys and the National Research Council each increased expenditures by close to 50 p.c., the Department of Agriculture by 17 p.c., and the Defence Research Board by 18 p.c. Expenditures by the Department of National Defence dropped by 52 p.c.

Approximately three quarters of Federal Government funds for scientific activity is directed to the conduct of research-development and, of that expenditure in 1961-62, 80.1 p.c. was performed within government facilities and the remainder was contracted to private organizations or used in universities as grants-in-aid of research. The fact that only 66 p.c. was performed within government facilities in 1958-59 indicates that the importance of private research-development work for the Federal Government has declined recently.

Expenditures on scientific activities by the civilian branches of government (excluding the Armed Forces and the Defence Research Board) rose from $\$ 127,000,000$ in 1958-59 to $\$ 192,100,000$ in 1961-62, an increase of 51.3 p.c. Over the same period, expenditures by the Armed Forces and the Defence Research Board dropped from $\$ 95,600,000$ to $\$ 66,800,000$. In 1961-62, the civilian branches of government accounted for 74.2 p.c. of all research-development expenditures of Federal Government departments and agencies, compared with 72.5 p.c., 69.6 p.c. and 57.1 p.c., respectively, for the three previous fiscal years.

## 5.-Federal Expenditures on Scientific Activities by Civilian and Defence Branches of Government, Years Ended Mar. 31, 1959-62

Note.-See headnote to Table 4, p. 381.
(Millions of dollars)

| Activity | Civilian Branches |  |  |  | Armed Forces and <br> the Defence Research Board |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1958-59 | 1959-60 | 1960-61 | 1961-62 | 1958-59 | 1959-60 | 1960-61 | 1961-62 |
| Conduct of research-development, including planning and administering researchdevelopment and grants-in-aid of research | 80.8 | 95.8 | 112.7 | 129.7 | 87.6 | 56.0 | 59.2 | 63.0 |
| Capital expenditures on research-development plant. | 25.0 | 26.7 | 32.4 | 35.5 | 5.7 | 6.3 | 1.8 | 1.5 |
| Scientific data collection........................ | 16.4 | 18.9 | 13.8 | 18.7 | 1.7 | 1.7 | 1.9 | 2.4 |
| Scientific information. | 3.5 | 4.3 | 5.0 | 5.6 | 0.6 | 0.6 | - |  |
| Scholarship and fellowship programs....... | 1.3 | 2.0 | 2.0 | 2.5 | - | - |  |  |
| Totals, Scientific Activities. . | 127.0 | 147.7 | 165.9 | 192.1 | 95.6 | 64.6 | 62.9 | 66.8 |

Federal Government expenditures (exclusive of those by the Armed Forces and the Defence Research Board) on research-development are classified according to scientific field for the four fiscal years in Table 6. Such expenditures for the physical sciences have increased over this period at the rate of approximately $\$ 10,000,000$ each year. In the life sciences, expenditures have increased in proportion to total increase in expenditures on research-development.

## 6.-Federal Expenditures on Research-Development, by Scientific Field, Years Ended Mar. 31, 1959-62 <br> Note.-See headnote to Table 4, p. 381. <br> (Millions of dollars)

| Scientific Field | 1958-59 | 1959-60 | 1960-61 | 1961-62 |
| :---: | :---: | :---: | :---: | :---: |
| Physical Sciences- <br> Engineering- |  |  |  |  |
|  |  |  |  |  |
| Chemical... | 3.5 | 4.4 | 5.1 | 6.3 |
| Civil.... | 2.3 | 2.6 | 3.4 | 3.8 |
| Electrical | 4.8 | 5.9 | 7.4 | 8.9 |
| Mechanica | 8.1 | 9.8 | 5.2 | 13.7 7 |
| Other...................................................... | 1.7 | 4.9 | 5.2 | 7.7 |
| Totals, Engineering. . . . . . . . . . . . . . . . . . . . . . . . . . . . | 20.4 | 27.4 | 33.2 | 40.4 |
| Other Physical Sciences- |  |  |  |  |
| Chemistry.................................................. | 6.4 | 7.3 | 8.6 | 9.8 |
| Physics.................................. | 7.0 | 8.2 | 7.6 9.4 | 11.2 |
| Geology, geophysics and other earth sciences................... | 4.1 | 4.3 5.3 | 9.4 2.6 | 11.2 3.4 |
| Mathematics................................................................ | 0.1 | 0.1 | 0.4 | 0.4 |
| Other... | 2.6 | 2.8 | 2.1 | 2.6 |
| Totals, Physical Sciences. | 45.5 | 55.4 | 63.9 | 76.9 |
| Life Sciences- |  |  |  |  |
|  | 4.5 23.0 | 5.9 25.4 | 8.1 26.0 | 27.7 |
| Biology..... | 7.8 | 9.1 | 13.2 | 15.0 |
| Other.... | - | - | 0.5 | 0.5 |
| Totals, Life Sciences. | 35.3 | 40.4 | 47.8 | 52.0 |
| Grand Totals. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 80.8 | 95.8 | 111.7 | 128.9 |

Details of federal expenditures on scientific activities for the fiscal years 1960-61 and 1961-62 are given in Table 7.
7.-Federal Government Expenditures on Scientific Activities, by Department or Agency, Years Ended Mar. 31, 1961 and 1962

Nore.-Corresponding figures for the fiscal years ended Mar. 31, 1959 and 1960 are given in the 1961 Year Book, pp. 395-396; see headnote to Table 4, p. 381.

| Department or Agency | 1960-61 |  |  |  |  | 1961-62 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Scientific Research-Development |  |  | Other Scientific Activities ${ }^{2}$ | TotalFundsApplied | Scientific Research-Development |  |  | Other Scientific Activities ${ }^{2}$ | Total Funds Applied |
|  | Conduct of Research-Development ${ }^{1}$ | Capital <br> Ex- <br> penditures <br> on <br> Research- <br> Develop- <br> ment Plant | Total |  |  | $\begin{array}{\|l} \text { Conduct } \\ \text { of } \\ \text { Research- } \\ \text { Develop- } \\ \text { ment } \end{array}$ | $\|$Capital <br> Ex- <br> penditures <br> on <br> Research- <br> Develop- <br> ment Plant | Total |  |  |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Agriculture.................................... | 23,554 | 4,058 | 27,612 | 793 401 | 28,405 401 | 24,926 | 5,911 | 30,837 | 854 442 | 31,691 |
|  |  | - | - | 401 |  | - | - |  |  |  |
| Health of Animals Division......................... | 422 23,132 | 4,032 | 27,448 | 378 | 27,542 | 24,333 | 5,016 | 1,488 29,349 | 400 | 29,749 |
| Atomic Energy | 23,706 | 16,120 | 39,826 | 42 | 39,868 | 30,406 | 10,198 | 40,604 | 50 | 40,654 |
| Atomic Energy Control Board. | 650 |  | 650 | , | , 650 | 700 | -108 | 700 | - | 700 |
| Atomic Energy of Canada Limited............... | 23,056 | 16,120 | 39,176 | 42 | 39,218 | 29,706 | 10,198 | 39,904 | 50 | 39,954 |
| Board of Grain Commissioners-Grain Research Laboratory. | 130 | 84 | 214 | 196 | 410 | 165 | 49 | 214 | 221 | 435 |
| Canadian Arsenals Limited. | 1,034 | - | 1,034 | - | 1,034 | 813 | - | 813 | - | 813 |
| Central Mortgage and Housing Corporation. | 76 | - | 76 | 2 | 78 | 188 | - | 188 | - | 188 |
| Defence Production. | 2,902 | - | 2,902 | - | 2,902 | 5,500 | - | 5,500 | - | 5,500 |
| External Affalrs. . | 54 | - | 54 | 74 | 128 | 22 | - | 22 | 120 | 142 |
| Fisheries (excl. Fisheries Research Board of Canada) | 829 | 370 | 1,199 | 5 | 1,204 | 1,110 | 969 | 2,079 | 7 | 2,086 |
| Conservation and Development Service............ <br> Inspection Service | 411 | 340 | ${ }^{751}$ | 5 | 751 11 | 449 | 934 | 1,383 | 7 | 1,383 |
| Industrial Development Service..................... | 412 | - 30 | 442 | 5 | 442 | 654 | -35 | 689 | 7 | 689 |
| Fisheries Research Board of Canada. | 4,860 | 501 | 5,361 | 92 | 5,453 | 5,632 | 1,494 | 7,126 | 106 | 7,232 |
| Forestry . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 8,289 | 341 | 8,630 | - | 8,630 | 9,563 | 748 | 10,311 | - | 10,311 |
| Forest Entomology and Pathology Branch....... | 4,142 | 330 | 4,472 | - | 4,472 | 4,708 | 530 | 5,238 | - | 5,238 |
| Forest Research Branch....................... Forest Products Research Branch......... | 2,847 1,300 | ${ }^{11}$ | 2,847 1,311 | - | 2,847 1,311 | 3,310 1,545 | 218 | 3,528 1,545 | - | 3,528 1,545 |
| Mines and Technical Surveys.................... | 10,725 | 4,999 | 15,724 | 13,795 | 29,519 | 11,988 | 9,517 | 21,505 | 18,370 | 39,875 |
| Dominion Observatories Branch.................... | 2,446 | - | 2,446 | 1- | 2,446 | 2,797 | - | 2,797 | - | 2,797 |
| Geographical Branch............................. | 406 | 7 | , 413 | 64 | 477 | 454 | 11 | , 465 | 113 | 578 |
| Geological Survey of Canada Branch.............. | 2,900 | 270 | 3,170 | 1,730 | 4,900 | 3,364 | 366 | 3,730 | 2,370 | 6,100 |
| Mines Branch............... | 4,916 | 388 | 5,304 | 167 | 5,471 | 5,341 | 328 | 5,669 | 180 | 5,849 |

7.-Federal Government Expenditures on Scientific Activities, by Department or Agency, Years Ended Mar. 31, 1961 and 1962-concluded

| Department or Agency | 1960-61 |  |  |  |  | 1961-62 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Scientific Research-Development |  |  | Other Scientific Activities ${ }^{2}$ | Total Funds Applied | Scientific Research-Development |  |  | Other Scientific Activities ${ }^{2}$ | Total Funds Applied |
|  | $\begin{aligned} & \text { Conduct } \\ & \text { of } \\ & \text { Research- } \\ & \text { Develop- } \\ & \text { ment } \end{aligned}$ | $\left\|\begin{array}{c}\text { Capital } \\ \text { Ex- } \\ \text { penditures } \\ \text { on } \\ \text { Research- } \\ \text { Develop- } \\ \text { ment Plant }\end{array}\right\|$ | Total |  |  | $\begin{aligned} & \text { Conduct } \\ & \text { of } \\ & \text { Research- } \\ & \text { Develop- } \\ & \text { menti } \end{aligned}$ | Capital <br> Ex- <br> penditures <br> on <br> Research- <br> Develop- <br> ment Plant | Total |  |  |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Mines and Technical Surveys-concluded Polar Continental Shelf Project. . Surveys and Mapping Branch. | 57 | 155 4,179 | 212 4,179 | 1,236 10,598 | 1,448 14,777 | 32 | 202 8,610 | 234 8,610 | 1,574 14,133 | 1,808 22,743 |
| National Film Board.............................. | 29 | 1 | 30 | - | 30 | 30 | 2 | 32 | - | 32 |
| National Health and Welfare. | 4,813 | 232 | 5,045 | 456 | 5,501 | 5,057 | 261 | 5,318 | 524 | 5,842 |
| National Research Council. . | 28,344 | 5,083 | 33,427 | 3,148 | 36,575 | 30,896 | 5,271 | 36,167 | 3,933 | 40,100 |
| Northern Affairs and National Resources........ | 1,667 | 122 | 1,789 | 1,765 | 3,554 | 1,950 | 96 | 2,046 | 2,088 | 4,134 |
| National Parks Branch | 743 | - | 743 | 12 | 755 360 | 810 | 0 | 810 | 13 | 883 |
| National Museum of Canada ................. | 120 39 | - | 120 39 | 240 | 360 39 | 163 52 | - | 163 52 | $\underline{326}$ | 489 52 |
| Water Resources Branch........................... | 765 | 122 | 887 | 1,513 | 2,400 | 925 | 96 | 1,021 | 1,749 | 2,770 |
| Post Office-Engineering and Development Branch | 653 | - | 653 | - | 653 | 132 | - | 132 | - | 132 |
| St. Lawrence Seaway Authority. . . . . . . . . . . . . . | 20 | - | 20 | - | 20 | - | - | - | - | - |
| Transport | 660 | 525 | 1,185 | 436 | 1,621 | 918 | 1,025 | 1,943 | 554 | 2,497 |
| $\underset{\text { Meteorological Branch. } \ldots \ldots . . . . . . . . . . . . . . . . . . ~}{\text { Air }}$ | 385 | 140 | 525 | 324 | 849 | 477 | 300 | 777 | 359 | 1,136 |
| Telecommunications and Electronics Branch.... Marine Services- | 223 | 385 | 608 | 112 | 720 | 334 | 494 | 828 | 115 | 943 |
| Marine Works Branch...:............................ <br> Shipbuilding Branch | - 52 | 二 | - 52 | - | 52 | 60 47 | 231 | 291 47 | $-^{80}$ | 371 47 |
| Veterans Affairs. | 354 | - | 354 | 3 | 357 | 384 | - | 384 | 5 | 389 |
| Totals (excl. National Defence and DRB) | 112,699 | 32,436 | 145,135 | 20,807 | 165,942 | 129,680 | 35,541 | 165,221 | 26,832 | 192,053 |
| National Defence (excl. Defence Research Board). | 29,075 | - | 29,075 | 1,954 | 31,029 | 29,744 | - | 29,744 | 2,355 | 32,099 |
| Defence Research Board......................... | 30,091 | 1,786 | 31,877 | - | 31,877 | 33,297 | 1,443 | 34,740 | - | 34,740 |
| Totals, All Departments and Agencies. . . | 171,865 | 34,222 | 206,087 | 22,761 | 228,848 | 192,721 | 36,984 | 229,705 | 29,187 | 258,892 |

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## CHAPTER VIII.-CRIME AND DELINQUENCY*

## CONSPECTUS

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| Conviction Offences.. . . . . . . . . . . . . . | 397 | Polic | 406 |
| Subsection 4. Appeals. | 398 | Subsec | 407 |

## The interpretation of the symbols used in the tables throughout the Year Book will be found facing $p .1$ 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 have 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.

[^108]101), establish any additional courts for the better administration of the laws of Canada. It should be noted that the Statute of Westminster, 1931 effected 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 judiciaries are given in Chapter II, pp. 77-79, and provincial judiciaries are dealt with briefly at pp. 79-80; more detailed information on provincial judiciaries is given in the 1954 Year Book, pp. 47-55.

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 ends 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 'offences' 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. A short outline of the system that existed under the repealed Code together with the major revisions effected by the new Code is given in the 1955 Year Book, pp. 295-298.

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

[^109]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 newspaper 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. 406-408).

It is most important to notice 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:-
" 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 right not to be deprived thereof 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
$(f)$ freedom of the press."
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, cc. 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. More detailed information on this classification is given in the 1962 Year Book, pp. 354-355. Also in 1961 the term criminal sexual psychopath was dropped and the term dangerous sexual offender substituted. More detailed information is available in the 1962 Year Book, p. 355.

## 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, one purpose being in order to evaluate the population engaged in prohibited activities and another to help in the treatment of anti-social behaviour in terms of subject-centred action. In the present counting system, while 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; (4) 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 1961 there were 43,161 adults charged with 81,867 indictable offences, of whom 38,679 were found guilty of 71,262 offences. In the previous year there were 39,343 adults charged with 73,411 indictable offences, of whom 35,443 were found guilty of 64,707 offences.
1.-Persons Convicted of Indictable Offences, with Ratio per $\mathbf{1 0 0}, 000$ Population 16 Years of Age or Over, by Province, 1960 and 1961

| Province or Territory | Persons Convicted |  | Persons Convicted per 100,000 Population <br> 16 Years of Age or Over |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 1960 | 1961 | 1960 | 1961 |
|  | No. | No. | No. | No. |
| Newfoundland. | 469 | 703 | 180 | 274 |
| Prince Edward Island. | 32 | 42 | 49 | 65 |
| Nova Scotia. | 1,343 | 1,383 | 292 | 297 |
| New Brunswick. | 888 | 1,038 | 243 | 290 |
| Quebec. | 6,806 | 8,064 | 212 | 245 |
| Ontario.. | 13,482 | 13,985 | 331 | 339 |
| Manitoba. | 2,050 | 2,368 | 345 | 391 |
| Saskatchewan. | 1,463 | 1,743 | 250 | 293 |
| Alberta.. | 3,831 | 4,012 | 471 | 477 |
| British Columbia.. | 4,868 | 5,092 | 447 | 465 |
| Yukon and Northwest Territories. | 211 | 249 | 981 | 1,103 |
| Canada. | 35,443 | 38,679 | 307 | 330 |

Indictable offences are classified according to the main sources of the criminal lawthe Criminal Code and federal statutes. Indictable offences under the Criminal Code are grouped into six classes as shown in Table 2. Class I covers offences against the person and in 1961 there were 5,234 males and 299 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 1961 there were 315 men and 171 women convicted under federal statutes of whom 290 men and 170 women were offenders under the Narcotic Control Act.

## 2.-Persons Charged and Convicted of Indictable Offences, by Class of Offence, 1960 and 1961

| Class of Offence | 1960 |  |  | 1961 |  |  | Increase or <br> Decrease in Persons Convicted |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Persons Charged | Persons <br> Convicted |  | Persons Charged | Persons Convicted |  |  |
|  |  | M. | F. |  | M. | F. |  |
| Criminal Code | No. | No. | No. | No. | No. | No. | p.c. |
| Class 1. - Offences against the Person. Abduction and kidnapping. | 6,113 44 | 4,750 34 | 235 | 6,847 51 | 5,234 | 299 | $\underline{+11.1}$ |
| Assault, causing bodily harm, common, on police and obstruction.... | 44 4,220 | 34 3,375 | 175 | 4,586 | 34 3,581 | 191 | $+8.3$ |
| Offences against females ${ }^{1} \ldots . . . . . .$. | 930 | 687 | 26 | 1,017 | 757 | 38 | +11.5 |
| Causing death by criminal negligence, ${ }^{2}$ manslaughter and murder. | 207 | 108 | 4 | 208 | 107 | 7 | + 1.8 |
| Attempted murder, causing bodily harm and danger. | 178 | 104 | 11 | 215 | 129 | 14 | +24.3 |
| Duties tending to preservation of life. | 17 | 12 | 1 | ${ }^{27}$ | 19 | 45 | +76.9 +4.5 |
| Other offences against the person... | 517 | 430 | 18 | 743 | 607 | 45 | +45.5 |
| Class II.-Offences against Property with Violence. | 8,267 | 7,537 | 105 | 8,485 | 7,731 | 132 | + 4.9 |
| Breaking and entering a place, extortion and robbery. | 8,267 | 7,537 | 105 | 8,485 | 7,731 | 132 | + 2.9 |
| Class III.-Offences against Property without Violence | 19,933 | 16,610 | 1,701 | 21,748 | 17,741 | 2,101 | $+8.4$ |
| Fraud and false pretences... | 2,414 | 1,929 | 222 | 2,835 | 2,185 | 287 | +14.9 |
| Having in possession. | 1,974 | 1,657 | ${ }^{68}$ | 2,255 | 1,837 | -77 | +11.0 |
| Theft.................. | 15,545 | 13,024 | 1,411 | 16,658 | 13,719 | 1,737 | + 7.1 |
| Class IV. - Malicious Offences against Property. | 752 | 623 | 30 | 915 | 760 | 33 | +21.4 |
| Arson and other fires......... Other interference with proper | 98 654 | 75 548 | 8 28 | 115 800 | 80 680 | 11 | +9.6 |
| Class V.-Forgery and Other Offences Relating to Currency. | 1,158 | 987 | 109 | 1,376 | 1,146 | 150 | +18.2 |
| Forgery and uttering forged documents. | 1,158 | 925 | 103 | 1,219 | 1,009 | 140 | +11.8 |
| Offences relating to currency.. |  | 62 | 6 | 157 | 137 | 10 | +116.2 |
| Class VI.-Other Offences. | 2,585 | 2,078 | 220 | 3,212 | 2,589 | 277 | +24.7 |
| Criminal negligence in operation of motor vehicles | 31 | 27 | - | 79 | 73 | - | +170.4 |
| Driving while ability to drive is impaired. | 223 | 202 | 1 | 224 | 214 | 4 | + 7.4 |
| Driving while intoxicated........... | 15 | 11 | 2 | 10 | 10 | - | $-23.1$ |
| Gaming, betting and lotteries | 531 | 437 | 34 | 712 | 552 | 54 | +28.7 |
| Keeping bawdy houses.. | 154 | 36 | 102 | 192 | 41 | 135 | +27.5 |
| Various other offences.. | 1,631 | 1,365 | 81 | 2,025 | 1,699 | 84 | +23.3 |
| Totals, Criminal Code | 38,808 | 32,585 | 2,400 | 42,613 | 35,201 | 2,992 | + 9.2 |
| Federal Statutes |  |  |  |  |  |  |  |
|  | $\begin{array}{r} 516 \\ 19 \end{array}$ | 290 16 | 151 1 | 520 28 | 290 25 | 170 1 | +4.3 +52.9 |
| Totals, Federal Statutes. | 535 | 306 | 152 | 548 | 315 | 171 | + 6.1 |
| Grand Totals | 39,343 | 32,891 | 2,552 | 43,161 | 35,516 | 3,163 | + 9.1 |

[^110]Table 3 shows that, in 1961, 49.0 p.c. of the persons convicted of indictable offences had not gone beyond elementary school grades in education, 50.8 p.c. were 24 years of age or younger and 35.4 p.c. were between the ages of 25 and 44 , and 78.7 p.c. lived in urban centres. Of these offenders, 91.8 p.c. were males, 86.7 p.c. were born in Canada, 62.0 p.c. were unmarried, 20.7 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, etc., 1960 and 1961

| Item | 1960 | 1961 | Item | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. |  | No. | No. |
| Total Persons Convicted. | 35,443 | 38,679 | Sex |  |  |
|  |  |  | Male. | 32,891 | 35,516 |
| Type of Occupation |  |  | Female | 2,552 | 3,163 |
| Agriculture. | 1,383 | 1,661 | Educational Status |  |  |
| Armed Services | 1,286 | 1,632 | Unable to read or write. | 375 | 424 |
| Clerical.. | 1,233 | 1,362 | Elementary....................... | 17,576 | 18,533 |
| Commercial and managerial | 2,088 | 2,180 | High school. ....................... | 13,340 | 14,412 |
| Construction.. | 4,940 | 4,559 | Superior. | - 445 | - 499 |
| Finance.. | 73 | 69 | Grade not stated | 500 | 396 |
| Fishing, trapping and logging | 1,365 | 1,468 | Not given. | 3,207 | 4,415 |
| Labourer. | 7,313 | 7,989 |  |  |  |
| Manufacturing and mechanical.... | 3,370 | 3,566 | Age |  |  |
| Mining........................... | 599 | 633 | 16 to 19 years. | 10,970 | 11,178 |
| Service- |  |  | 20 to 24 years. | 7,737 | 8,481 |
| Domestic..................... | 822 | ${ }^{906}$ | 25 to 44 years. | 12,467 | 13,693 |
| Personal.... | 1,021 348 | 1,217 | 45 years or over | 3,200 | 3,580 |
| Public and protective | 60 | 93 | Not given. | 1,069 | 1,747 |
| Other. | 126 | 138 | Birthplace |  |  |
| Student. | 2,007 | 2,340 | Birthplace |  |  |
| Transportation and communications. | 2,983 | 2,966 | Canada .................... | 31,468 | 33,543 |
| Unemployed and retired (incl. |  |  | wealth......................... | 861 | 914 |
| housewives).. | 4,134 | 4,662 | United States..................... | 284 | 297 |
| Not given........................ | 1,292 | 2,094 | Europe............................ | 1,852 | 2,074 |
|  |  |  | Asia. | 69 | 68 |
|  |  |  | Other foreign countries............ | 23 | 31 |
| Marital Status |  |  | Not given....................... | 886 | 1,752 |
| Single. | 22,902 | 23,980 | Residence |  |  |
| Married | 9,398 | 10,513 | Urban Residence |  |  |
| Widowed | 349 | 404 | Urban centres.................... | 28,017 | 30,438 |
| Divorced | 311 1 1 | 373 1,556 | Indeterminate. | , 700 | +595 |
| Not given......................... | 1,046 | 1,853 | Not given.......................... | 479 | 1,083 |

Female Offenders.-There were 3,163 female offenders convicted of indictable offences in 1961 compared with 2,552 in 1960. Of these offenders, Ontario accounted for 1,255 , British Columbia 528 and Quebec 493. The ratio of female offenders convicted to total convictions moved upward from 7.2 p.c. in 1960 to 8.2 p.c. in 1961 with a provincial range from 2.4 p.c. in Prince Edward Island to more than 10 p.c. in Manitoba and British Columbia.

## 4.-Females Convicted of Indictable Offences, by Province, 1960 and 1961

| Province or Territory | Females Convicted |  | Females Convicted to Total Convictions |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 1960 | 1961 | 1960 | 1961 |
|  | No. | No. | p.c. | p.c. |
| Newfoundland. | 25 | 68 | 5.3 | 9.7 |
| Prince Edward Island | 2 | 1 | 6.2 | 2.4 |
| Nova Scotia. | 66 | 83 | 4.9 |  |
| New Brunswick | $\begin{array}{r}38 \\ 352 \\ \hline\end{array}$ | 35 493 | 4.3 5.2 | 3.4 6.1 |
| Quebec... | 352 1,035 | 493 1,255 | 5.2 | 6.1 9.0 |
| Manitoba...... | , 244 | , 267 | 11.9 | 11.3 |
| Saskatchewan. | 86 | 100 | 5.9 | 5.7 |
| Alberta....... | 296 | 323 | 7.7 | 8.1 |
| British Columbia | 402 | 528 | 8.3 | 10.4 |
| Yukon and Northwest Territories. | - | 10 | 2.8 | 4.0 |
| Canada | 2,552 | 3,163 | 7.2 | 8.2 |

Multiple Convictions.-Table 5 shows the number of persons having more than one conviction at a court appearance for the years 1957 to 1961. 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, 1957-61


Disposition of Cases and Previous Convictions.-Of all suspects before the courts for indictable offences in 1961, 89.6 p.c. were adjudged guilty. There was considerable variation among provinces with Prince Edward Island showing 100 p.c. and Ontario 86.3 p.c.
6.-Persons Charged and Convicted of Indictable Offences, by Province, 1960 and 1961

| Province or Territory | 1960 |  |  | 1961 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Persons Charged | Persons Convicted |  | Persons Charged | Persons Convicted |  |
|  | No. | No. | p.c. | No. | No. | p.c. |
| Newfoundland ....... | 491 | 469 | 95.5 | 722 | 703 | 97.4 |
| Prince Edward Island | 34 | 32 | 94.1 | 42 | 42 | 100.0 |
| Nova Scotia... | 1,494 | 1,343 | 89.9 | 1,585 | 1,383 | 87.3 |
| New Brunswick | 711 | 888 | 97.5 | 1,051 | 1,038 | 98.8 |
| Ontario. | 15,458 | 6,806 13,482 | 89.5 87.2 | 8, 8 , 1998 | 18,064 13,985 | 89.6 86.3 |
| Manitoba. | 2,122 | 2,050 | 96.6 | 2,514 | 2,368 | 94.2 |
| Saskatchewan | 1,546 | 1,463 | 94.6 | 1,826 | 1,743 | 95.5 |
| Alberta. | 4,026 | 3,831 | 95.2 | 4,269 | 4,012 | 94.0 |
| British Columbia...... | 5,441 | 4,868 | 89.5 | 5,697 | 5,092 | 89.4 |
| Yukon and Northwest Territories. | 219 | 211 | 96.3 | 260 | 249 | 95.8 |
| Canada | 39,343 | 35,443 | 90.1 | 43,161 | 38,679 | 89.6 |

In 1961, 27.3 p.c. of the convicted persons had no previous conviction, 13.6 p.c. had previously been found guilty of one offence and 35.9 p.c. had two or more earlier convictions. Court records for the other 23.2 p.c. were not obtained.

## 7.-Persons Charged with Indictable Offences, Disposition of Cases and Previous Convictions, 1960 and 1961

| Item | 1960 | 1961 | Item | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. |  | No. | No. |
| Charged.......................... | 39,343 | 43,161 | Males convicted................. | 32,891 | 35,516 |
| Acquitted......................... | 3,676 | 4,173 | Females convicted............... | 2,552 | 3,163 |
| Disagreement of jury............. | 6 | 8 | First conviction................. | 10,759 | 10,566 |
| Stay of proceedings................ | 151 | 225 | Second conviction................ | 5,148 | 5,265 |
| No Bill. ........................... | 29 | 22 | Reiterated convictions........... | 13,021 | 13,877 |
| Detained because of insanity....... | 38 | 54 | Not given....................... | 6,515 | 8,971 |

Sentences, Method of Trial and Court Proceedings.-Table 8 summarizes sentences given for indictable offences, Table 9 illustrates the method of trial and disposition of cases, and Table 10 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. The institutions to which a person can be committed are of many kinds, including 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.
8.-Sentences Given for Indictable Offences, by Province, 1961

| Sentence | Nfld. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Yukon and N.W.T | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| Option of fine. | 127 | 13 | 348 | 242 | 1,456 | 3,044 | 543 | 463 | 1,201 | 1,030 | 41 | 8,508 |
| Gaol- | 292 | 21 | 343 | 336 | 2,812 | 3,569 | 575 | 657 | 1,275 | 1,688 | 144 | 11,712 |
| One year or over | 50 | 1 | 12 | 55 | 247 | 643 | 163 | 126 | 498 | 473 | 13 | 2,281 |
| Reformatory. | 3 | - | 5 | - | 113 | 1,546 | 23 | - | 3 | 371 | - | 2,064 |
| Penitentiary - |  |  |  |  |  |  |  |  |  |  |  |  |
| Under two years........ | ${ }_{28}$ | 3 | 180 | 10 96 | 743 | $\begin{array}{r}57 \\ 740 \\ \hline\end{array}$ | 133 | 12 82 | 259 | 276 | - 9 | 2,549 |
| Five years and under ten.. | 2 | - | 6 | 7 | 92 | 120 | 11 | 7 | 13 | 41 |  | 300 |
| Ten years and under four- | - | - | - | - |  |  | - | 1 | 8 | 10 | 2 | 62 |
| Fourteen years or over.... | - | - | - |  | 23 | 6 | - | - | - | 2 | - | 32 |
| Life..... | - | - | 2 | - | 4 | 8 |  | 二 | 1 | $\stackrel{2}{2}$ | - | 18 2 |
| Preventive. | - | - | - | - | - | - |  | - |  | 2 |  |  |
| Death. | - | - | - | 1 | 2 | 5 | 1 | - | - | 3 | - | 12 |
| Suspended sentence without probation. | 151 | 13 | 217 | 193 | 1,486 | 1,053 | 537 | 181 | 195 | 422 | 34 | 4,482 |
| Suspended sentence with probation. | 50 | 4 | 269 | 97 | 1,039 | 3,175 | 380 | 214 | 551 | 757 | 5 | 6,541 |
| Totals.. | 703 | 55 | 1,384 | 1,038 | 8,054 | 13,981 | 2,368 | 1,743 | 4,012 | 5,092 | 249 | 38,679 |

9．－Method of Trial of Persons Charged with Indictable Crimes，showing Disposition of Cases，by Sex and by Province， 1961

| Method of Trial and Sex | Nfld． | P．E．I． | N．S． | N．B． | Que． | Ont． | Man． | Sask． | Alta． | B．C． | Yukon and N．W．T | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No． | No． | No． | No． | No． | No． | No． | No． | No． | No． | No． | No． |
| By Judge and Jury－ <br> Convicted．．．．．．．．．．．．．．．．M． | $-5$ | 二 | ${ }^{27}$ | －${ }^{9}$ | 131 | 256 18 | 33 | $-37$ | 7 | 78 3 | 7 | 590 28 |
|  |  | 二 |  | $-2$ |  | 135 13 | 5 1 |  | $-1$ | 44 1 | － 4 | 239 17 |
| Detained because of insanity．．．．．．．．．．．．．．．．$\underset{\mathrm{F}}{\mathrm{F}}$ ． | 二 | － | 二 | 二 | $-5$ | $\stackrel{2}{2}$ | 二 | － | $-1$ | 4 | － | 11 5 |
| Disagreement of jury．．．M． | － | － | － | － | － | 6 | － | － | － | 2 | － | 8 |
| Stay of proceedings．．．． $\mathrm{M}_{\mathrm{F}}$ ． | 二 | 二 | 1 | 二 | 二 | － | 二 | $\begin{aligned} & 1 \\ & 1 \end{aligned}$ | 二 | 11 4 | － | 13 6 |
| No Bill．．．．．．．．．．．．．．．M． | 二 | 二 |  | 二 | － | 18 2 | 二 | 二 | 二 | 二 | 二 | 20 2 |
| By a Judge without Jury－ Convicted．．．．．．．．．．．．．．．．．．． | $-2$ | $-5$ | $\square^{40}$ | $-3$ | 1,169 46 | 259 7 | 33 5 | 55 | 220 24 | 113 8 | 6 | 1,905 91 |
| Acquitted．．．．．．．．．．．．．．．．．．．． |  | 二 | － 8 | 二 | 368 29 | 93 8 | $-8$ | $-14$ | 43 1 | 48 5 | 4 1 | 587 44 |
| Detained because of insanity $\qquad$ | － | － | － | － | － | － | － | － | 2 | － | － | 2 |
| Stay of proceedings．．．． $\mathrm{F}_{\mathrm{F}}^{\mathrm{M}}$ ． | 二 | 二 | 二 | 二 | 二 | $\stackrel{2}{2}$ |  | $-1$ | $-6$ | 7 | $-1$ | 17 5 |
| By a Magistrate with Consent－ |  |  |  |  |  |  |  |  |  |  |  |  |
| Convicted．．．．．．．．．．．．．．．．．．． | 363 19 | 19 1 | 665 34 | 510 10 | 3,444 134 | 7，187 | 937 64 | 844 38 | 1,867 86 | 2,078 189 | 122 5 | 18,036 1,021 |
| Acquitted $\qquad$ | 7 |  |  | $-4$ | 162 14 |  | $-6$ | 16 2 | 84 8 | 169 18 | 二 | 1,455 126 |
| Detained because of insanity．．．．．．．．．．．．．．．．．． M ． | $-2$ | － | 2 | 1 | $-6$ | $-5$ | － | $-{ }^{2}$ | 2 4 | $-1$ | 二 | 21 |
| Stay of proceedings ．．．．M． | － | 二 | 二 | $-1$ | 二 | 二 | 37 8 | 1 | $-1$ | 30 15 | 二 | 70 23 |
| By a Magistrate，Absolute Jurisdiction－ Convicted M |  |  |  |  |  |  |  |  |  |  |  |  |
| Convicted．．．．．．．．．．．．．．．．． | 265 49 | － | 569 49 | 481 25 | 2，817 | 5,024 789 | 1,098 197 | 61 | 1，595 | 2，295 | 104 | 14,985 2,023 |
| Acquitted．．．．．．．．．．．．．．．．．．．．． | $-4$ | $-1$ | 73 13 | $-5$ | 297 27 | 817 98 | 14 1 | 32 2 | 92 10 | 183 35 | 1 | 1,519 186 |
| Detained because of insanity．．．．．．．．．．．．．．．．．M． | － | 二 |  | 二 | 3 1 | $-{ }^{2}$ | － | 二 | $-1$ | $-1$ | 二 | 10 |
| Stay of proceedings ．．．M．${ }_{\text {M }}$ ． | 二 | 二 |  | 二 | 1 | 二 | 56 9 | 二 | 1 | 19 4 | 二 | 78 13 |
| Totals，Persons Charged． | 722 | 57 | 1，587 | 1，051 | 8，985 | 16，193 | 2，514 | 1，826 | 4，269 | 5，697 | 260 | 43，161 |
| Totals，Persons Con－ victed． | 703 | 55 | 1，384 | 1，038 | 8，054 | 13，981 | 2，368 | 1，743 | 4，012 | 5，092 | 249 | 38，679 |

## 10．－Persons Charged and Convicted of Indictable Crimes according to Trial Court，by Province， 1960 and 1961

| Province or Territory and Item | 1960 |  |  |  |  | 1961 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Persons Charged and Convicted by－ |  |  |  |  | Persons Charged and Convicted by－ |  |  |  |  |
|  | Police Magis－ trate and Muni－ cipal Court |  <br> Juvenile <br> or <br> Family <br> Court | County Court | Higher Court | Totals | Police Magis－ trate and Muni－ cipal Court |  | County Court | Higher Court | Totals |
| Newfoundland－ | No． | No． | No． |  | No． | No． |  | No． |  |  |
| Charged． | 420 | 57 | 1 | 13 | 491 | 661 | 49 | 3 | 9 | 722 |
| Convicted．．．．．．．．．．．．． | 403 | 56 | 1 | 9 | 469 | 647 | 49 | 2 | 5 | 703 |
| Prince Edward Island－ Charged Convicted | 31 31 | 二 | 1 | 二 | 34 32 | 38 38 | 二 | 4 | 二 | 42 42 |
| Nova Scotia－ Charged． Convicted | 1,409 1,269 | 4 | 42 37 | 39 33 | 1,494 1,343 | 1,484 1,311 | 5 5 | 49 41 | 47 26 | 1,585 1,383 |
| New Brunswick－ Charged． Convicted．．．．．． | 892 877 | 2 2 | 4 3 3 | 13 6 | 911 888 | 1,033 1,022 | 4 4 | 3 <br> 3 | 11 9 | 1，051 |
| Quebec－ <br> Charged． <br> Convicted | 5,152 4,729 | 1,157 1,145 | 1,167 845 | 125 87 | 7,601 6,806 | 5,990 5,488 | 1,235 1,224 | 1,647 1,248 | 125 104 | 8,997 8,064 |
| Ontario－ <br> Charged． <br> Convicted $\qquad$ | 14,578 12,873 | 31 30 | 720 508 | 129 | 15,458 13,482 | 15,316 13,391 | 59 54 | 644 437 | 179 103 | 16,198 13,985 |
| Manitoba－ Charged． Convicted | 1,760 1,718 | 265 | 64 45 | 33 22 | 2,122 2,050 | 2,227 2,099 | 200 197 | 48 39 | 39 33 | 2,514 2,368 |
| Saskatchewan－ Charged． Convicted． | 1,430 1,381 | $\stackrel{2}{2}$ | 62 46 | 52 34 | 1,546 1,463 | 1,698 1,643 | 7 | 75 56 | 46 37 | 1,826 1,743 |
| Alberta－ <br> Charged <br> Convicted $\qquad$ | 3,717 3,563 | 3 3 | 21 19 | 285 246 | 4,026 3,831 | 3,935 3,732 | 28 28 | 58 49 | 248 203 | 4,269 4,012 |
| British Columbia－ Charged． Convicted | 4,538 4,108 | 572 549 | 186 125 | 145 86 | 5，441 4,868 | 4,755 4,295 | 610 595 | 185 123 | 147 79 | 5,697 5,092 |
| Yukon and Northwest Territories－ Charged． Convicted | 215 209 | 二 | － | ${ }_{2}^{4}$ | 219 211 | 237 236 | 二 | 18 10 | 5 3 | 260 <br> 249 |
| Canada－ Charged． Convicted | $\begin{aligned} & \mathbf{3 4 , 1 4 2} \\ & \mathbf{3 1 , 1 6 1} \end{aligned}$ | 2,093 $\mathbf{2 , 0 5 6}$ | $\mathbf{2 , 2 7 0}$ $\mathbf{1 , 6 3 0}$ | 838 596 | 39,343 $\mathbf{3 5 , 4 4 3}$ | 37，374 | 2,197 $\mathbf{2 , 1 6 3}$ | 2，734 $\mathbf{2 , 0 1 2}$ | 856 602 | $\mathbf{4 3 , 1 6 1}$ $\mathbf{3 8 , 6 7 9}$ |

## 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 16－24 years of age who constitute a promising field for modern reception and diagnostic facilities equipped with educational，trade training and other formative dis－ ciplines．While young men and women in this age group account for under 15 p．c．of the total population 16 years of age or over，they form over half the criminal population com－ mitting indictable offences．The group includes a wide range，from some of the most daring offenders who already may be experienced criminals to first offenders likely to be turned from crime by further education and training．

There were 19，659 young adult offenders in 1961 compared with 18,707 in 1960；of the former， 5,787 or 29.4 p．c．were 16 or 17 years of age， 5,391 or 27.4 p．c．were 18 or 19 years of age and 8,481 or 43.2 p．c．were between 20 and 24 years．In 1961 there were 18,425 male and 1,234 female young adult offenders convicted of indictable offences compared with 17,649 and 1,058 ，respectively，in 1960.

11.-Young Adult Offenders, by Age Group, Sex and Province, 1960 and 1961

| Year, Age Group and Sex | Nfld. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Yukon and N.W.T. | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1960 | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |  |
| 16-17 years................ | 89 2 |  | 244 12 | 152 | 1,502 | 2,032 <br> 88 | $\begin{array}{r} 277 \\ 17 \end{array}$ | 220 13 | 520 36 | 701 42 | 18 4 | 5,760 255 |
| $\text { 18-19 " } \ldots \ldots \ldots \cdot \underset{\mathrm{F}}{\mathrm{M} .}$ | 78 |  | 229 | 131 | 893 31 | 1,780 105 | 233 44 | 191 | 481 29 | 639 36 | 27 | $\begin{array}{r}4,686 \\ \hline 269\end{array}$ |
| $\text { 20-24 " } \ldots \ldots \ldots \underset{\mathrm{F} .}{\mathrm{M} .}$ | 133 | 8 | 293 11 | 201 | $\begin{array}{r} 1,506 \\ 89 \end{array}$ | $\begin{array}{r} 2,657 \\ 226 \end{array}$ | $\begin{array}{r} 378 \\ 46 \end{array}$ | 310 10 | 794 63 | 877 78 | 46 | 7,203 534 |
| Totals, 1960 | 308 | 17 | 796 | 502 | 4,055 | 6,888 | 995 | 755 | 1,923 | 2,373 | 95 | 18,707 |
| 16-17 years........... ${ }^{\text {c }}$ |  | 21 |  |  |  |  |  |  |  |  |  |  |
| 10-17 years................. | 119 | 21 | 14 | 158 5 | 1, 65 |  | 234 11 | 228 15 | 31 | +47 | 23 | 5,498 |
| $\text { 18-19 " } \ldots \ldots \ldots . .$ | 122 5 | 6 1 | 230 12 | 194 4 | 996 40 | 1,921 121 | $\begin{array}{r}308 \\ 47 \\ \hline\end{array}$ | 247 17 | 492 30 | 540 33 | 25 | 5,081 310 |
| 20-24 " $\ldots \ldots \ldots .$. M. | 144 | 10 | 302 | 264 | 1,798 | 2,642 | 481 | 399 | 811 | 932 | 63 | 7,846 |
| F. | 16 | - | 13 | 9 | 105 | 220 | 49 | 21 | 85 | 113 | 4 | 635 |
| Totals, 1961 | 407 | 38 | 811 | 634 | 4,465 | 6,876 | 1,130 | 927 | 1,886 | 2,368 | 117 | 19,659 |

## 12.- Young Adult Offenders Convicted of Indictable Offences, by Class of Offence and Sex, 1960 and 1961

| Class of Offence | 1960 |  | 1961 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Males | Females | Males | Females |
| Criminal Code | No. | No. | No. | No. |
| Class 1.-Offences against the Person. | 1,830 | 71 | 1,937 | 85 |
| Abduction and kidnapping.......................... | 22 |  | 23 |  |
| Assault, causing bodily harm, common, on police and obstruction | 1,282 | 63 | 1,364 | 56 |
| Causing death by criminal negligence, 2 manslaughter and murder | 36 |  | 321 33 | - |
| Attempted murder, causing bodily harm and danger......... | 39 |  | 42 | 4 |
| Duties tending to preservation of life. | - | 1 | 1 | 2 |
| Other offences against the person.. | 126 | 5 | 153 | 16 |
| Class II.-Offences against Property with Violence. . | 5,283 | 73 | 5,254 | 82 |
| Breaking and entering a place, extortion and robbery........ | 5,283 | 73 | 5,254 | 82 |
| Class III.-Offences against Property without Violence. . . | 8,906 | 676 | 9,295 | 794 |
| Fraud and false pretences. | 441 | 92 | 479 | 112 |
| Having in possession. | 804 | 35 | 881 | 43 |
| Theft. | 7,661 | 549 | 7,935 | 639 |
| Class IV.-Malicious Offences against Property. | 380 | 19 | 456 | 16 |
| Arson and other fires. | 32 | 6 | 39 |  |
| Other interference with property. | 348 | 13 | 417 | 12 |
| Class V.-Forgery and Other Offences Relating to Currency | 374 | 49 | 397 | 60 |
| Forgery and uttering forged documents. | 351 | 48 | 362 | 58 |
| Offences relating to currency.. | 23 | 1 | 35 | 2 |
| Class VI.-Other Offences. | 823 | 97 | 1,018 | 105 |
| Criminal negligence in operation of motor vehicles | 13 | - | 35 |  |
| Driving while ability to drive is impaired. | 16 | - | 45 | 2 |
| Driving while intoxicated. | 3 | 1 | 2 | - |
| Gaming, betting and lotteries | 28 | 1 | 29 | 8 |
| Keeping bawdy houses. | 6 | 44 | 7 | 49 |
| Various other offences.. | 757 | 51 | 900 | 46 |
| Totals, Criminal Code. | 17,596 | 985 | 18,357 | 1,142 |
| Federal Statutes |  |  |  |  |
| Narcotic Control Act. Other statutes. | 51 2 | 73 | 65 3 | 91 1 |
| Totals, Federal Statutes | 53 | 73 | 68 | 92 |
| Grand Totals. . . . . . . . . . . . . . . . . . . . . . . . . . | 17,649 | 1,058 | 18,425 | 1,234 |

${ }^{1}$ 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.
13.-Disposition of Sentences for Indictable Offences, by Sex, 1960 and 1961

| Disposition of Sentences | 1960 |  |  |  | 1961 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 16-24 Years |  | 25 Years or Over |  | 16-24 Years |  | 25 Years or Over |  |
|  | M. | F. | M. | F. | M. | F. | M. | F. |
|  | No. | No. | No. | No. | No. | No. | No. | No. |
| Suspended sentence. | 2,063 | 224 | 1,725 | 346 | 2,031 | 218 | 1,825 | 408 |
| Probation............ | 4,277 | 306 | 1,059 | 178 | 4,666 | 392 | 1,266 | 217 |
| Fine........ | 2,988 | 205 | 3,922 | 588 | 3,090 | 240 | 4,391 | 787 |
| Gaol.......... | 5,528 | 259 | 6,411 | 299 |  | 311 | 7,338 | 433 37 |
| Reformatory. | 1,554 1,235 | 52 12 | 486 1.633 | 33 50 | 1,446 1,275 | 57 16 | 524 1,741 | 37 47 |
| Penitentiary Death. | 1,235 4 | 12 | 1,633 6 | 50 | 1,275 | - 16 | 1,741 | 47 |

## Subsection 3.-Convictions for Summary Conviction Offences

Offences 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 jury. Such cases are heard in police court with the minimum of delay.
14.-Convictions for Summary Conviction Offences, by Type, 1960 and 1961

| Type of Offence | 1960 | 1961 | Increase or Decrease 1960-61 |
| :---: | :---: | :---: | :---: |
|  | No. | No. | p.c. |
| Criminal Code. | 83,198 | 89,729 | $+7.8$ |
| Attempts, conspiracies, accessories, counselling | 114 | 190 | $+66.7$ |
| Attempt to commit suicide..................... | 207 | 207 | - |
| Bawdy house............. | 599 | 549 | $-8.3$ |
| Causing disturbance by being drunk | 3,602 | 5,651 | $+56.9$ |
| Common assault............... | 6,418 3 | 7,542 30 | +17.5 -9.1 |
| Contempt of court.......... | 120 | 74 | -38.3 |
| Corrupting morals. | 87 | 78 | $-20.3$ |
| Cruelty to animals | 64 | 119 | +85.9 |
| Damage not exceeding $\$ 50$ and other interference | 3,259 | 3,256 | -0.1 |
| Disorderly conduct | 13,886 | 12,005 | -13.5 |
| Duty of persons to provide necessaries | 1,785 | 1,989 | +11.4 |
| Duty to safeguard dangerous places. | 192 | 176 | $-8.3$ |
| Fraudulently obtaining food or lodging | 972 | 1,087 | +11.8 |
| Fraudulently obtaining transportation. | 148 | ${ }_{3} 151$ | +2.0 |
| Gaming, betting, lotteries..............l | 3,019 52 | $\begin{array}{r}3,097 \\ \hline 75\end{array}$ | +2.6 +44.2 |
| Intimidation............................ | 273 | 293 | +7.3 |
| Motor Vehicle. |  |  |  |
| Criminal negligence in operation of motor veh | 841 | 1,045 | $-24.3$ |
| Driving while ability to drive is impaired. | 21,050 | 23,151 | +10.0 |
| Driving while disqualified. | 5,142 | 5,906 | +14.9 |
| Driving while intoxicated. | 2,357 | 2,125 | -9.8 |
| Failing to stop at scene of accident..... | 3,962 | 4,426 | +11.7 |
| Motor vehicle equipped with smoke screen |  | 1 34 | +385.7 |
| Taking motor vehicle without consent. Offensive weapons..................... | 1,259 1,103 | 1,404 | +11.5 -4.6 |
| Personating peace officer | 160 | 1,75 | +25.0 |
| Recognizance, breach of. | 1,256 | 1,340 | $+6.7$ |
| Vagrancy.. | 7,116 | 7,685 | +8.0 |
| Other Criminal Code. | 4,215 | 4,917 | +16.7 |
| Federal Statutes. | 29,059 | 33,678 | +15.9 |
| Customs. | 250 | 242 | -3.2 |
| Excise.. | 1,004 | 743 | -26.0 |
| Fisheries | 699 | 669 | -4.3 |
| Food and Drugs and Inspection and Sales | 107 | 96 | -10.3 |
| Harbour Board and Merchant Seamen's | 1,587 | 3,438 | +116.6 |
| Immigration. | 4,384 | 59 4,934 | +12.5 |
|  |  |  |  |
| Intoxication. | 8,379 | 8,296 | $-1.0$ |
| Other. | 2,951 | 2,706 | $-8.3$ |
| Juvenile Delinquents- |  |  |  |
| Adults who contribute to delinquency | 1,832 | 1,977 | +7.9 |
| Incorrigibility. | 541 | 683 | +26.2 |
| Inducing child to leave home, etc | 144 | 31 | $-78.5$ |
| Sexual immorality. | 158 | 371 | +134.8 |
| Lord's Day...... | 165 | 67 | -59.4 |
| Narcotic Control | 43 | 30 | -30.2 |
| Railway................. | 1,067 | 1,200 | +12.5 |
| Unemployment Insurance | 3,392 | 5,523 | $+62.8$ |
| Weights and Measures. Other federal statutes. | 54 2,302 | 106 2,507 | +98.3 +8.9 |
| Provinclal Statutes. | 759,168 | 906,750 | +19.4+1.8 |
| Deserted Wives and Children's Maintenance.Game and Fisheries.................... | 624 | ${ }_{5} 635$ |  |
|  | 4,641 | 5,056 6,994 | $\begin{array}{r} +8.9 \\ +\quad 8.9 \end{array}$ |
|  | 6,575 | 6,994 |  |

14.-Convictions for Summary Conviction Offences, by Type, 1960 and 1961-concluded

| Type of Offence | 1960 | 1961 | Increase or Decrease $1960-61$ |
| :---: | :---: | :---: | :---: |
|  | No. | No. | p.c. |
| Provincial Statutes-concluded |  |  |  |
| Highway Traffic- |  |  |  |
| Driving without due care and attention. | 34,470 | 39,185 | +13.7 |
| Other traffic. | 548,201 | 670,385 | +22.3 |
| Liquor Control- | 84,161 | 95,592 |  |
| Other....... | 58,221 | 66,743 | +14.6 |
| Master and Servant. | 1,132 | 1,079 | -4.7 |
| Medical, Dentistry and Pharmacy. | 1203 | 201 | - 1.0 |
| Mental Diseases............... | 1,184 | 1,168 | - 1.4 |
| Prairie and Forest Fire Prevention | 171 | 275 | +60.8 |
| Protection of Children.. | 2,626 | 3,761 | $+43.2$ |
| Public Health. | 185 | 162 | -12.4 |
| School Laws............. | 348 16,426 | 622 14,892 | +78.7 $+\quad 9.3$ |
| Municipal By-laws. | 235,107 | 256,721 | + 9.2 |
| Intoxication...... | 13,185 | 11,200 | -15.1 |
| Traffic. | 182,120 | 203,724 | +11.9 |
| Other. | 39,802 | 41,797 | + 5.0 |
| Prohibited Parking. | 1,814,008 | 1,822,405 | + 0.5 |
| Totals, Convictions | 2,920,540 | 3,109,283 | +6.5 |

## 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 1961 there were 2,247 appeals in indictable cases disposed of by the courts, of which 56 were Crown appeals and 2,191 appeals of the accused. Of the Crown appeals, 34 were from acquittal and 22 from sentence while of the appeals of the accused 700 were from conviction and 1,491 from sentence. Appeals in summary conviction cases disposed of by the courts reached 1,569 in 1961. Of these, 252 were appeals of the informant and 1,317 appeals of the accused. The informant appeals comprised 217 from acquittal and 35 from sentence. The appeals of the accused were divided between 1,103 from conviction and 214 from sentence.

## Section 3.-Juvenile Delinquents

Juvenile Delinquent, as defined in the Juvenile Delinquents Act, means any child 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 1961, 2,588 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.
15.-Juveniles brought before the Courts, by Province, and Total Dismissed and Delinquent, 1957-61

| Province or Territory | 1957 | 1958 | 1959 | 1960 | 1961 | Percentage Change, 1960-61 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. |  |
| Newfoundland. | 319 | 354 | 274 | 421 | 413 | -1.9 |
| Prince Edward Island. | 36 | 26 | 42 | 35 | 52 | +48.6 |
| Nova Scotia. | 581 | 780 | 723 | 792 | 637 | -19.6 |
| New Brunswick. | 341 | 453 | 371 | 481 | 511 | +6.2 |
| Quebec. | 2,436 | 2,434 | 2,504 | 2,795 | 3,101 | +10.9 |
| Ontario. | 4,861 | 5,263 | 5,355 | 6,698 | 7,682 | +14.7 |
| Manitoba. | 792 | 891 | 754 | 1,212 | 993 | -18.1 |
| Saskatchewan. | 29 | 88 | 198 | 275 | 329 | +19.6 |
| Alberta. | 824 | 985 | 980 | 1,189 | 1,307 | +9.9 |
| British Columbia | 1,705 | 1,850 | 2,093 | 2,111 | 1,949 | -7.7 |
| Yukon Territory...... |  |  | - 35 | - | 2 | . |
| Northwest Territories. | 4 | 10 |  |  |  |  |
| Canada | 11,928 | 13,134 | 13,329 | 16,009 | 16,976 | +6.0 |
| Dismissed. | 331 | 416 | 370 | 517 | 570 | -0.2 |
| Adjourned sine di | 1,918 | 1,327 | 1,273 | 1,527 | 1,191 | -2.6 |
| Delinquent... | 9,679 | 11,391 | 11,686 | 13,965 | 15,215 | +2.4 |

## 16.-Percentage Change in the Number of Boys and Girls brought before the Courts, 1952-61

| Year | Percentage Change from Preceding Year |  |  | Percentage Change from 1951 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Boys' Cases | Girls' Cases | $\xrightarrow[\text { Cases }]{\text { All }}$ | Boys' Cases | Girls' Cases | $\begin{gathered} \text { All } \\ \text { Cases } \end{gathered}$ |
| 1952. | - 5.0 | $+4.5$ | - 4.1 | - 5.0 | $+4.5$ | - 4.1 |
| 1953. | +8.3 | +11.0 | +8.5 | +2.9 | +15.9 | +4.1 |
| 1954. | -0.6 | $-4.2$ | -1.0 | +2.2 | +11.0 | +3.1 |
| 1955. | +3.3 | +25.9 | +5.6 | + 5.6 | +39.8 | +8.9 |
| 1956. | +26.9 | +19.4 | +26.0 | +34.0 | +66.9 | +37.1 |
| 1957. | +14.9 | +21.0 | +15.6 | + 54.0 | +101.4 | + 58.5 |
| 1958. | +10.4 | +8.3 | +10.1 | + 70.0 | +118.7 | + 74.6 |
| 1959. | +2.4 | - 5.1 | +1.5 | + 74.0 | +107.5 | +77.2 |
| 1960. | +19.4 | +26.0 | +20.1 | +107.7 | +161.5 | +112.9 |
| 1961. | +6.3 | + 4.3 | +6.0 | +120.8 | +172.6 | +125.7 |

1\%.-Juvenile Delinquents, by Province, 1952-61

| Year | Nfld. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Yukon and N.W.T | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| 1952.. | 215 | 29 | 356 | 267 | 628 | 2,889 | 409 | 81 | 317 | 877 | - | 6,068 |
| 1953.. | 196 | 33 | 443 | 235 | 773 | 2,975 | 360 | 49 | 357 | 952 | 4 | 6,377 |
| 1954.... | 218 | 43 | 440 | 224 | 678 | 2,945 | 341 | 59 | 428 | 956 | - | 6,332 |
| 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 | 26 | 766 | 1,621 | 4 | 9,679 |
| 1958. | 343 | 25 | 676 | 431 | 2,2291 | 4,108 | 790 | 85 | 906 | 1,788 | 10 | 11,3911 |
| 1959.. | 262 | 42 | 623 | 355 | $2,410{ }^{1}$ | 4,199 | 629 | 182 | 911 | 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 |

${ }^{1}$ Includes 956 cases in 1958 and 35 cases in 1959 "Adjourned sine die", compiled for statistical purposes as juvenile delinquents.
18.-Total Delinquent Children, by Number of Delinquent Appearances, 1961, with Number of Appearances in Previous Years

| Number of Delinquent Appearances | Total Delinquent Children | Delinquent Appearances in Previous Years |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 0 | $\begin{gathered} 1 \\ \text { or } \\ \text { More } \end{gathered}$ | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10+ |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| 1 or more. | 13,358 | 10,805 | 2,553 | 1,316 | 559 | 284 | 140 | 100 | 53 | 29 | 24 | 14 | 34 |
| $1 .$. | 11,892 | 9,949 | 1,943 | 1,064 | 408 | 213 | 95 | 68 | 33 | 20 | 12 | 7 | 23 |
| 2. | 1,166 | 718 | 448 | 197 | 114 | 53 | 26 | 18 | 15 | 5 | 10 | 5 | 5 |
| 3. | 231 | 113 | 118 | 40 | 33 | 16 | 11 | 7 | 1 | 2 | 2 | 2 | 4 |
|  | 51 | 21 | 30 | 9 | 3 | 2 | 7 | 4 | 4 |  | - | - | 1 |
| 5... | 9 8 | -4 | 9 4 | 4 1 1 | 1 | - | $-1$ | 2 1 | 二 | 1 1 | - | - | - |
| 7......... | 1 | - |  | 1 | - | - |  |  |  | - | - | - | - |

19.-Juvenile Delinquents by Group of Offence, and Ratio per $\mathbf{1 0 0 , 0 0 0}$ Population 7-15 Years of Age, 1952-61

| Year | Delinquencies against the Person |  | Delinquencies against Property with Violence |  | Delinquencies against Property without Violence |  | Wilful and Forbidden Acts in respect of Certain Property |  | $\begin{aligned} & \text { Forgery } \\ & \text { and } \\ & \text { Delin- } \\ & \text { quencies } \\ & \text { relating to } \\ & \text { Currency } \end{aligned}$ |  | Other Delinquencies |  | Total Convictions |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | Ratio to Population | No. | Ratio to Population | No. | Ratio to Population | No. | Ratio to Population | No. | Ratio to Popu- | No. | Ratio to Population | No. | $\begin{aligned} & \text { Ratio } \\ & \text { to } \\ & \text { Popu- } \\ & \text { lation } \end{aligned}$ |
| 1952.. | 172 | 8 | 1,456 | 65 | 2,496 | 112 | 633 | 28 | 25 | 1 | 1,286 | 58 | 6,068 | 272 |
| 1953. | 169 | 7 | 1,416 | 61 | 2,415 | 103 | 770 | 33 | 19 |  | 1,588 | 68 | 6,377 | 273 |
| 1954. | 184 | 7 | 1,444 | 59 | 2,489 | 102 | 673 | 28 | 32 | 1 | 1,510 | 62 | 6,332 | $\stackrel{259}{ }$ |
| 1955. | 181 | 7 | 1,548 | 61 | 2,767 | 108 | 629 | 25 | 29 | 1 | 1,871 | 73 | 7,025 | 275 |
| 1956... | 250 |  | 1,888 | 69 | 3,572 | 131 | 839 | 31 | 39 | 1 | 2,397 | 88 | 8,985 | 329 |
| 1957. | 254 | 9 | 2,005 | 70 | 3,764 | 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 | 11,391 | ${ }_{377}^{381}$ |
| 1959. | 265 |  | 2,408 | 78 | 4,748 | 153 | 952 | 31 | 27 |  | 3,286 | 106 | 11,686 | 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 |

## 20．－Juvenile Delinquents classified by Type of Delinquency，1957－61

| Delinquency | 1957 | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No． | No． | No． | No． | No． |
| Manslaughter and murder and causing death by criminal negligence． | 1 | 2 | 1 | － | 4 |
| Murder，attempt．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | 1 | － | 1 | － | 1 |
| Rape and attempt，serual intercourse and incest． | 5 | 6 | 4 | 5 | 5 |
| Indecent assault（male and female）． | 63 | 75 | 66 | 96 | 70 |
| Assault，causing bodily harm and danger | 38 | 17 | 25 | 42 | 36 |
| Common assault． | 115 | 214 | 127 | 198 | 223 |
| Interfering with transportation facilities． | 1 | 3 | 3 | － | 3 |
| Other offences against the person． | 30 | 29 | 38 | 28 | 40 |
| Breaking and entering a place．． | 1，970 | 2，239 | 2，375 | 2，886 | 3，415 |
| Robbery and extortion．．． | 35 | 29 | 32 | 66 | 96 |
| Theft and having in possession | 3，566 | 4，223 | 4，517 | 5，488 | 6，076 |
| False pretences and fraud and corruption． | 24 | 19 | 24 | 35 | 35 |
| Arson． | 83 | 58 | 55 | 91 | 74 |
| Other interference with property． | 911 | 927 | 897 | 1，181 | 1，174 |
| Forgery and delinquencies relating to currency | 28 | 36 | 27 | 36 | 33 |
| Incorrigibility and vagrancy．．． | 633 | 813 | 776 | 900 | 842 |
| Immorality． | 197 | 253 | 267 | 258 | 238 |
| Various other delinquencies． | 1，978 | 2，448 | 2，451 | 2，655 | 2，850 |
| Totals． | 9，679 | 11，391 | 11，686 | 13，965 | 15，215 |

21．－Percentages of Delinquent Boys and Girls，by Age Group， 1960 and 1961

| Age Group | 1960 |  |  | 1961 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Boys | Girls | Both Sexes | Boys | Girls | Both Sexes |
|  | p．c． | p．c． | p．c． | p．c． | p．c． | p．c． |
| 7－12 years．． | 24.7 | 13.8 | 23.5 | 23.5 | 12.0 | 22.2 |
| 13－15 years．． | 75.0 | 86.0 | 76.2 | 76.3 | 87.9 | 77.6 |
| Not given．． | 0.3 | 0.2 | 0.3 | 0.2 | 0.1 | 0.2 |
| Totals | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

22．－Age，Sex and School Grade of Delinquent Boys and Girls， 1961
（B＝Boys；G＝Girls）

| Age | School Grades |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Total Delin－ quents |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Elementary |  |  |  |  |  |  |  |  |  | Second－ ary |  | Auxili－ ary |  | Not Given |  |  |  |
|  | 1－4 |  | 5 |  | 6 |  | 7 |  | 8 |  |  |  |  |  |  |  |  |  |
|  | B | G | B | G | B | G |  | G | B | 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． | 28 |  | － | － |  | － |  |  |  |  |  |  | 1 | － | 1 | － | 30 | 1 |
| 8 9 | 117 261 |  | 21 | 1 | 3 | 二 |  | 二 |  | 二 | － | 二 | 2 | 二 | 4 | $-1$ | 121 294 | 10 |
| 10 ＂ | 297 | 14 | 121 | 13 | 36 | 3 | 2 | 二 | 二 | 二 | 二 | 二 | 5 | 二 | 14 | 1 | 475 | 31 |
| 11 ＂ | 258 | 13 | 236 | 11 | 210 | 17 | 38 | 4 | 7 |  |  | － | 4 | 1 | 18 | 1 | 771 | 46 |
| 12 ＂ | 207 | 10 | 336 | 16 | 478 | 28 | 359 | 41 | 53 | 10 | 5 | － | 11 | 3 | 30 | 3 | 1，479 | 111 |
| 13 ＂ 14 | 116 94 |  | 281 | 21 | 507 | 44 | 700 | 81 | 477 | 65 | 76 | 19 | 24 | 2 | 73 | 11 | 2，254 | 252 |
| 15 ＂ | 94 <br> 88 | 12 | 208 | 21 | 434 | 52 | 908 | 145 | 1，044 | 164 | 745 | 153 | 54 | 11 | 128 | 19 | 3，615 | 577 |
| Not given． |  |  |  | 26 | 328 | 4 | 773 | 94 | 996 | 161 | 1，778 | 291 | 64 1 | 7 | 221 27 | 41 1 | 4,436 29 | 676 1 |
| Totals． | 1，460 | 85 | 1，391 | 109 | 1，996 | 188 | 2，780 | 365 | 2，578 | 400 | 2，604 | 463 | 166 | 24 | 523 | 77 | 13，504 | 1，711 |


23.-Disposition of Delinquents, by Type of Sentence, 1952-61

| Year | Reprimanded |  | $\begin{array}{\|c\|} \hline \text { Probation } \\ \text { of } \\ \text { Court } \end{array}$ |  | $\begin{gathered} \text { Protection } \\ \text { of } \\ \text { Parents } \end{gathered}$ |  | Fined or Made Restitution |  | Detained Indefinitely |  | Sent to <br> Training School |  | Final Disposition Suspended |  | Corporal Punishment |  | Mental Hospital |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | p.c. | No. | p.c. | No | p.c. | No. | p.c | N | p.c. | No. | p.c. | No. | p.c. | No. |  | No. | p.c. |
| 1952 | 243 | 0 | 2,412 | 39.8 | 148 | 2.4 | 1,015 | 16.7 | 1 |  | 1,152 | 19.0 | 1,095 | 18.1 | 2 |  |  |  |
| 1953 | 227 | 3.6 | 2,620 | 41. | 186 | 2.9 | 1,147 | 18.0 | 28 | 0.4 | 1,107 | 17.4 | 1,062 | 6 |  |  | . |  |
| 1954 | 199 | 3.1 | 2,595 | 41.0 | 174 | 2.8 | 1,095 | 17.3 | 27 | 0.4 | 1,121 | 17.7 | 1,119 | 17.7 | 2 |  | .. |  |
| 1955 | 181 | 2.6 | 3,067 | 43.7 | 365 | 5.2 | 1,064 | 15. | 50 | 0.7 | 1,180 | 16.8 | 1,118 | 15.9 |  |  |  |  |
| 1956 | 359 | 4.0 | 3,155 | 35. | 404 | 4.5 | 2,015 | 22.4 | 30 | 0.3 | 1,440 | 16.0 | 1,577 | 17.6 |  |  | 5 | 0.1 |
| 1957 | 460 | 4.7 | 3,822 | 39.5 | 300 | 3.1 | 2,261 | 23.4 | 63 | 0.7 | 1,563 | 16.1 | 1,202 | 12.4 |  |  | 7 |  |
| 195 | 504 | 4 | 5,728 | 50.3 | 294 | 2.6 | 1,624 | 14.3 | 13 | 0.1 | 1,822 | 16.0 | 1,389 | 12.2 | 3 |  | 14 |  |
| 195 | 236 | 2.0 | 6,151 | 2.6 | 412 | 3.5 | 1,810 | 15.5 | 9 | 0.1 | 1,678 | 14.4 | 1,38 | 8 |  |  | 9 | 0.1 |
| 960 | 442 | 3.2 | 7,41 | 53.1 | 18 | 3.7 | 2,28 |  | 42 | 0.3 | 1,791 | 12.8 | 56 | 10.4 |  |  | 14 |  |
| 1961. | 544 | 3.6 | 7,341 | 48.2 | 644 | 4.2 | 2,148 | 14.1 | 89 | 0.6 | 1,974 | 13.0 | 2,466 | 16.2 |  |  | 9 | 0.1 |

## Section 4.-Adult 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, sentences 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 24 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 24 and 25 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 abnormal number of commitments are 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 fluctuations that might have occurred during the year between census days, the total population of correctional institutions has shown a general increase since Mar. 31, 1957; totals for training schools and provincial adult institutions have shown a tendency to level off or decline slightly but penitentiary population has increased steadily.
24.-Population in Penitentiaries, Years Ended Mar. 31, 195\%-61

| Item | 1957 | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. |
| In custody at beginning of year | 5,508 | 5,433 | 5,770 | 6,295 | 6,344 |
| Received during year.. | 2,977 | 3,919 | 3,918 | 4,523 | 4,973 |
| Discharged during year | 3,053 | 3,582 | 3,393 | 4,474 | 4,579 |
| In custody at end of year | 5,433 | 5,770 | 6,295 | 6,344 | 6,738 |

25.-Populations in Reformatories and Gaols and in Training Schools as at Mar. 31, 1957-61

| Type of Institution | 1957 | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Reformatories and Gaols- | No. | No. | No. | No. | No. |
| Reformatories for men. | 3,257 | 3,890 | 3,806 | 3,769 | 4,012 |
| Reformatories for wome | 145 | 164 | 172 | 144 | 180 |
| Common gaols. | 6,337 | 7,138 | 7,188 | 6,983 | 7,629 |
| Totals, Reformatories and Gaols. | 9,739 | 11,192 | 11,166 | 10,896 | 11,821 |
| Training Schools- |  |  |  |  |  |
| Training schools for boys. | 2,132 | 2,334 | 2,343 | 2,423 | 2,382 |
| Training schools for girls. | 998 | 1,086 | 990 | 965 | 1,019 |
| Totals, Training Schools | 3,130 | 3,420 | 3,333 | 3,388 | 3,401 |

## Subsection 2.-The Canadian Penitentiary Service*

The penitentiaries of Canada are administered by the Commissioner of Penitentiaries, responsible directly to the Minister of Justice. In the year ended Mar. 31, 1963, the federal penitentiaries system consisted of six maximum security, four medium security and thirteen minimum security institutions, all for males; one prison for women; one maximum security prison camp for males and females of the Freedomite Doukhobor Sect; and two 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 Joyceville Institution-are within a few miles of Kingston. The other two-the Federal Training Centre and the Leclerc Institu-tion-are in close proximity to St. Vincent de Paul.

Seven 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.; and Springhill, N.S. Five minimum security farm camps operate as extensions of the penitentiary at Dorchester, St. Vincent de Paul, Collin's Bay, Stony Mountain and Prince Albert, respectively.

The Prison for Women at Kingston, Ont., receives inmates transferred upon committal to penitentiaries in any part of Canada. Prior to Dec. 1, 1960, it operated as a detached portion of Kingston Penitentiary.

The special security Prison Camp for Freedomites of both sexes who have been sentenced to imprisonment in penitentiary is located near Agassiz, B.C., and is called Mountain Prison.

The two Correctional Staff Colleges-one at Kingston, Ont., and one at St. Vincent de Paul, Que.-are for the advanced training of penitentiary officers. The one at Kingston serves English-speaking or bilingual officers and that at St. Vincent de Paul is primarily for French-speaking officers from all parts of Canada. Both 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. During 1962, regional directorates were established at Kingston and St. Vincent de Paul for the Ontario and Quebec areas, respectively.

## Subsection 3.-The National Parole System $\dagger$

Parole is a means by which an inmate in any 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. The Parole Board is as much concerned with the protection of society as with the reformation of the inmate and the welfare of an individual inmate must not be allowed to impair the success of the parole system, or the protection of the public.

[^111]The function of the Parole Board is to select those inmates in the various institutions in Canada who show some indication of a sincere intention to reform and to assist them in doing so by a grant of parole. The inmate then is allowed to serve the balance of his sentence in society, but under supervision and subject to restrictions and conditions as to his conduct and behaviour, which are designed for his welfare and for the protection of society. 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 a reasonable chance of reformation. Parole is not a matter of clemency and is not granted on compassionate or humanitarian grounds but only if it appears that there is at least a reasonable chance the inmate will lead a law-abiding life.

The National Parole Board is composed of a Chairman and four Members (one woman) and 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 former Ticket-ofLeave Act. It has jurisdiction over any adult inmate in 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 is based on reports it receives from the police, from the trial judge or magistrate and from various people at the institution who deal with the inmate. Reports are also obtained from a psychologist or psychiatrist, when available. Where necessary, a community investigation is conducted to secure as much information as possible about the man's family and background, his work record, and his position in the community. From all 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, a file is opened and investigation begun, the results of which are presented to the Board for decision.

All applications and reports are processed by the Parole Board staff at Ottawa. In addition to the headquarters staff, there are 24 regional officers stationed in ten regional offices across the country. They interview all applicants for parole to give them an opportunity of making verbal representations to a representative of the Board. The Regional Officers also submit to the Board reports of interviews and their assessment of the inmates' suitability for parole. These men have authority over the parolees in their respective areas and also give information and counsel to all inmates regarding possibility of parole and preparation for it. They may also issue a Warrant of Suspension and have a parolee arrested and placed in custody if it is necessary to prevent a breach of any term or condition of the parole. They are thus able to exercise effective and adequate control over all parolees in their respective areas.

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 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 while on parole, his parole is automatically forfeited and he is returned to the institution to serve the unexpired balance of his sentence, plus any new term to which he was sentenced for the commission of the new offence.

It is essential that the general public should understand that the true purpose of punishment should be the reformation of the offender and not just vengeance or retribution. The treatment and training program in the institutions 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 reform as many as possible and of giving prisoners a chance to rehabilitate if they seem to deserve it.

From the date of its establishment to Nov. 30, 1962, the Parole Board reviewed 30,619 cases, including applications for parole and automatic parole review, and granted 8,190 paroles. During the same period, the Board revoked 754 paroles, which is a failure rate of about 9 p.c. related to the number of paroles granted.

## Section 5.-Police Forces

The Police Forces of Canada are organized under three groups: (1) the Federal Force, which is the Royal Canadian Mounted Police; (2) Provincial Police Forces-the Provinces of Ontario and Quebec have organized 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-each urban centre of reasonable size maintains its own police force, or engages the services of the provincial police, under contract, to attend to police matters within its boundaries.

A new method of reporting police statistics, known as the Uniform Crime Reporting System, commenced on Jan. 1, 1962. The system was developed by the Dominion Bureau of Statistics in co-operation with the Canadian Association of Chiefs of Police, working through their committee on the Uniform Recording of Police Activities. The Uniform Crime Reporting System will allow for the eventual publication of more complete and meaningful data. For this reason police statistics are not carried in this edition of the Year Book.

## Subsection 1.-The Royal Canadian Mounted Police

The Royal Canadian Mounted Police is a civil force maintained by the Federal Government and was established in 1873 as the North-West Mounted Police for service in what was then the North-West Territories. In recognition of its services, it 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 Minister of Justice 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 120 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 41 subdivisions and 625 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 40 divisional and subdivisional units and the three 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, 1962 was 6,461, including Marine Constables and Special Constables, at which time it maintained some 1,762 motor vehicles, 18 aircraft, 71 ships and boats, 221 sleigh dogs, 25 police service dogs and 241 horses.

## Subsection 2.-Provincial Police Forces

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 the laws of the province.

The province is divided into two almost equal parts known as the Montreal Division and the Quebec Division. Each division is in turn subdivided into two sections comprising a variable number of detachments. There are 103 detachments throughout the province.

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. The strength of the Force at the end of 1962 was 1,582 regular members.

Ontario Provincial Police Force.-The Ontario Provincial Police Force is administered by the Commissioner who has the rank and status of a deputy minister under the Attorney General. Its jurisdiction for law enforcement extends generally to all parts of Ontario outside of substantial urban areas.

With a total complement of about 2,500 (at present being increased), the Force has General Headquarters at Toronto, with 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, Timmins, Port Arthur and Kenora. District Headquarters operates through local detachments numbering 235 throughout the province.

In the plan of reorganization established in 1963, under a Commissioner and Deputy Commissioner, the Force has five administrative divisions-Administration, Staff Services, Special Services, Field, and Traffic-under Assistant Commissioners. Special Services branches operating out of General Headquarters include Criminal Investigation, Liquor Control, Anti-Highgrade, Anti-Gambling, and Anti-Rackets.

The Force operates one of the largest frequency-modulation radio networks in the world, with 74 fixed stations and 724 radio-equipped mobile units, including 687 motorcars, 30 motorcycles and seven mobile marine units.

History relates that in July 1875 John Wilson Murray was appointed to act as "Detective for the Provincial Government of Ontario" to pursue criminals and "run them down" in their havens of refuge. Murray performed his varied duties under the direction of Sir Oliver Mowat, the Attorney General of the province. At the time of Confederation and the first session of the first Parliament of Ontario in December 1867, there were a number of rural or provincial police. These officers were unpaid and if any remuneration was received for their services it was derived through the fee system. In 1877 a major reform occurred when, under the Constables Act (RSO 1877, c. 72), the necessity for giving certain constables jurisdiction throughout the province was recognized. County judges were authorized to allocate provincial constables to every county and district in Ontario.

Later, the opening up of the mining areas in the north of the province and the accompanying lawlessness brought to the fore the realization that more adequate law enforcement measures were a necessity. Consequently, an Order in Council dated Oct. 13, 1909 (confirmed by 10 Edw. VII, c. 39) was passed providing for the establishment of the Ontario Provincial Police Force, to be composed of a Superintendent and such inspectors and constables as were deemed necessary. The officers were stationed throughout the northern portion of the province and at all border points in southern Ontario. The Force was
completely reorganized in 1921 under the authority of the Ontario Provincial Police Act, the appointment of a Commissioner of Police for Ontario was made and the strength of the Force considerably increased.

The Constables Act was amended in 1929 with a view to establishing closer relationship and co-operation between the Provincial Police Force and county constabularies. Twentyeight counties took advantage of this legislation and a member of the Ontario Provincial Police was appointed as Acting High Constable in each. In March 1930, the control and administration of the officers who had been enforcing the Highway Traffic Act under the supervision of the Department of Public Highways was transferred to the Department of the Attorney General under the Commissioner of the Ontario Provincial Police. By the Police Act, 1946, proclaimed Feb. 1, 1947, all former legislation dealing with constables was repealed and the duties and responsibilities of police forces, for the first time in the history of the province, were clearly defined. Current legislation governing the Force is contained in Part IV of the Police Act.

## CHAPTER IX.-AGRICULTURE

## CONSPECTUS

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## CHANGES IN CANADIAN AGRICULTURE AS REFLEGTED BY THE CENSUS OF 1961*

Canadian agriculture has experienced considerable technological change in recent years, particularly since the end of the Second World War. As in most other industries, the trend has been to increased mechanization and specialization. The effects of these renovations are reflected in the revenue derived from agricultural production, although it must be kept in mind that climatic conditions have always been an important determinant of farm output.

In general, agricultural production, as measured in value terms, increased fairly consistently for the two decades following the early 1930's, after which time there was a tapering off of the value of farm output. Agriculture's "gross domestic product at factor cost", which represents accrued net farm income plus payments to hired labour and an allowance for capital consumption, averaged $\$ 389,000,000$ a year for the $1930-34$ period. The annual average rose to $\$ 488,000,000$ for the period $1935-39, \$ 966,000,000$ for $1940-44$ and $\$ 1,444,000,000$ for $1945-49$ and reached a peak of $\$ 2,010,000,000$ for $1950-54$. In the subsequent five-year period, the value of agricultural output declined to an annual average of $\$ 1,737,000,000$, followed by a slight increase to $\$ 1,755,000,000$ in the $1960-62$ period.

Although total agricultural production in value terms has shown a large increase in the past three decades, its rate of increase appears to have been less than that of other industries. This slower relative increase is shown by the proportion represented by agriculture of the "gross domestic product at factor cost" for all industries. The proportion represented by the value of farm output averaged 15.9 p.c. for the 1926-29 period, declined

[^112]to 11.6 p.c. in 1930, and during the 1931-53 period fluctuated from a low of 8.0 p.c. in 1931 to a high of 12.5 p.c. in 1948 and 1951. Since 1953, agriculture's share has been less than 7.5 p.c., reaching a low of 4.6 p.c. in 1961 but recovering to 5.5 p.c. in 1962.

Upon examination of the agriculture industry itself, an indication of the technological change that has occurred in Canadian agriculture is reflected in the decrease in the number of farms and the corresponding increase in the average size of farm. These changes are tied in with increased farm mechanization which has enabled the farm operator to operate a larger farm with the same amount of labour or less. Also, the larger farm area reduces per-acre machine costs and is one of the ways that the farmer can offset the steady increase in the cost of farm machinery.

Number and Size of Farms.-The declining trend in the number of farms in Canada, which was first evident in the 1941-51 decade, continued in the latest intercensal period, 1956-61. A total of 480,903 farms was recorded in the 1961 Census for all Canada, 16.4 p.c. fewer than the corresponding total of 575,015 farms in 1956 and 22.8 p.c. fewer than the 1951 total of 623,091 farms. A peak total of 732,832 farms was recorded in the 1941 Census. Part of the reduction in the number of farms between 1956 and 1961 was attributable to a change in farm definition. (In 1961, a farm was defined as a holding of one acre or more with sales of agricultural products during the past 12 months of $\$ 50$ or more.)* It is estimated that 40,731 holdings were not classified as farms in 1961 for this reason. Thus, without the change in farm definition, there would have been a reduction of 9.3 p.c. in the number of farms from 1956 to 1961. Including the effect of the change in farm definition, the greatest decrease in number of farms took place in the Atlantic Region where the 33,391 farms in 1961 represented a decrease of 47.6 p.c. from the number recorded in 1951. In the other regions, however, the percentage reductions were much less. In the Central Region the decrease was 23.6 p.c. to a total of 217,110 farms in 1961, in the Prairie Region it was 15.4 p.c. to 210,442 farms, and in British Columbia, 24.5 p.c. to 19,934 farms.

Historically, large increases in farm area were recorded from 1911 to 1941, during which period the total rose from $108,968,715$ acres to $173,563,282$ acres. This increase was attributable mainly to the agricultural development of the Prairie Region and since 1941 the total farm area of the country has changed little. In 1961 it amounted to 172,551,051 acres, slightly less than the record high of $174,046,654$ acres recorded in 1951. During the 1911-61 period, some regional differences prevailed. In the Atlantic Region (excluding Newfoundland), the total farm area gradually declined each census year from $11,000,808$ acres in 1911 to $5,444,788$ acres in 1961. The experience in this region was that large areas of land brought under cultivation at the turn of the century proved to be submarginal for agricultural purposes and were later abandoned as farm land. In the Provinces of Quebec and Ontario, the farm area increased from 37,785,052 acres in 1911 to a high of $40,450,545$ acres in 1941, after which it declined to $32,776,999$ acres in 1961. In the Prairie Provinces, the farm area of $57,642,844$ acres in 1911 rose to $129,814,122$ acres in 1961; while the largest increases occurred during the 1911-41 period, those recorded in recent census years for the Prairie Region have largely offset the acreage decreases recorded in the Eastern Provinces. The amount of farm land in British Columbia, reported as $2,540,011$ acres in 1911, increased steadily to $4,702,274$ acres in 1951 but dropped back to $4,506,552$ acres in 1961 .

As already stated, relatively large increases occurred in average size of farm (in terms of acreage) during the 1951-61 decade, although again it should be noted that a contributing factor for this particular period was the change in farm definition which resulted in fewer farms in 1961. The average size of farm for the Atlantic Region in 1961 was 163 acres compared with 123 acres in 1951; for the Central Region, the average size was 151 acres in 1961 and 133 acres in 1951; for the Prairie Provinces it was 617 acres, 119 acres above the 1951 figure; and for British Columbia 226 acres compared with 178 acres. Another indication of the increasing size of farm was the value of sales reported for the farms. In 1961,

[^113]

49,841 farms or 10.4 p.c. of all the farms of Canada reported sales valued at $\$ 10,000$ or more; the comparable figures in 1951 were 21,243 farms or 3.4 p.c. of all farms. In 1961, 18.8 p.c. of the farms were included in the $\$ 5,000-\$ 9,999$ sales group compared with 11.1 p.c. in 1951 ; the actual numbers were 90,419 farms and 69,019 farms, respectively.

Land Use.-The proportion of farm land classed as improved has moved slightly upward during the past two decades. In 1961, 59.9 p.c. of the total farm area was included in this category compared with 55.6 p.c. in 1951 and 52.8 p.c. in 1941. The proportions of farm land classed as improved in the Atlantic Region and British Columbia in 1961 were much below the average for Canada- 33.6 p.c. and 28.9 p.c., respectively-and the proportions in the Central Region and the Prairie Region, at 60.7 p.c. and 61.9 p.c., were higher.

Slightly over one in every three acres ( 36.2 p.c.) of Canadian farm land in 1961 was planted to crops, the proportions ranging from a high of 40.3 p.c. in the Central Region to a low of 17.5 p.c. in British Columbia. Improved pasture as a proportion of total farm area was highest in the Central Provinces where it amounted to 17.1 p.c. For all other regions, the ratio was less than one in every ten acres. Most of the summerfallow acreage was concentrated in the Prairie Provinces, one fifth of the farm area ( 21.5 p.c.) in the region being reported in that category in 1961. For Canada as a whole, 10 p.c. of the farm area was reported in woodland although there was considerable variation between regions; the range was from a high of 53.5 p.c. in the Atlantic Region to a low of 4.5 p.c. in the Prairies.

Tenure of Farm Operator.-The trend toward fewer and larger farms has been accompanied by an increase in the proportion of farms operated by part owner-part tenant operators, particularly in the Prairie Region. This trend has been evident during the past two decades and reflects a preference to acquiring additional land through renting or leasing rather than buying when capital is limited. For all Canada, one in every five farms (20.9 p.c.) was included in the part owner-part tenant group in 1961 compared with 14.3 p.c. in 1951 and 11.6 p.c. in 1941. The owner-operated group (including managed farms) was by far the largest although some decline took place-from 78.5 p.c. of all farms in 1951 to 73.4 p.c. in 1961 . The remaining group, tenant farms, made up only 5.7 p.c. of the total in 1961 and 7.2 p.c. in 1951.

The largest number of owner-operated farms (including managed farms) was in the Central Region, where the 185,847 farms in that category constituted 85.6 p.c. of all the farms in the region. In the Prairie Region 120,747 farms or 57.4 p.c. of all the farms were in that group and corresponding proportions for the Atlantic Region and British Columbia were 89.1 p.c. and 82.6 p.c., respectively. The part owner-part tenant group included 33.2 p.c. of the Prairie Region farms in 1961 compared with 26.0 p.c. in 1951; also in that group in 1961 were 10.0 p.c. of the Atlantic Region farms, 11.2 p.c. of the Central Region farms and 13.2 p.c. of the British Columbia farms. Traditionally, tenantoperated farms have been most prevalent in the Prairie Region where the 19,703 farms included in that group in 1961 represented 71.1 p.c. of the group total for Canada and 9.4 p.c. of all the farms in the region.

The proportion of the total farm area owned by the farm operator changed little from 1951 to 1961 -in the former year it was 74.5 p.c. and in the latter 74.2 p.c. The proportions in the different regions in 1961 ranged from 96.2 p.c. in the Atlantic Region to 68.9 p.c. in the Prairie Region.

Farm Machinery.-The latest census gives a positive picture of the mechanization of agricultural operations. The value of farm machinery and equipment on Canadian farms in 1961 was placed at approximately $\$ 2,600,000,000$, almost 40 p.c. higher than the value of such equipment in 1951.

In 1961, there were 549,789 tractors reported on farms across the country, which was an average of 114 tractors for every 100 farms. Ten years earlier, there were 64 tractors for every 100 farms and twenty years earlier there were 22 for every 100 farms. In the Prairie Region where the farms are larger in size, there were 290,700 tractors, which represented 138 per 100 farms.

As would be expected, motor trucks were also much more prevalent on farms. The 302,012 trucks reported on farms across the country in 1961 represented an average of 63 per 100 farms, a considerable increase over the 31 trucks for every 100 farms in 1951. In the Prairie Provinces, the 1961 average was 88 trucks per 100 farms.

The coming into common use of the combine in place of the binder and threshing machine, particularly in the great grain-growing areas of the mid-west, is also reflected by the census. In 1961 there were 155,611 grain combines on the farms of Canada, 81.8 p.c. of them located in the Prairie Provinces where there were 65 for every 100 farms; in 1951 there were 32 combines for every 100 farms in the Prairie Region and in 1941 only 6 . Conversely, the number of grain binders dropped from 303,374 in 1951 to 160,575 in 1961 and the number of threshing machines from 96,691 to 66,057 .

Farm Electrification.-The extent of the electrification of farms is also indicated by the census results. In 1961, 85.2 p.c. of Canadian farms had electricity, a considerable increase over the 73.5 p.c. in 1956 and the 51.3 p.c. in 1951. The farms in the two central provinces reported a high incidence of electrification in 1961-97.3 p.c. in Quebec and 95.2 p.c. in Ontario. In the Atlantic Region, New Brunswick reported 96.5 p.c. of its farms as electrified, Nova Scotia 95.5 p.c. and Newfoundland 65.8 p.c.; extensive electrification took place in Prince Edward Island during the decade, the proportion rising from

22.0 p.c. in 1951 to 78.1 p.c. in 1961. In the Prairie Region, Manitoba reported 90.2 p.c. of its farms with electric power, Alberta 72.3 p.c. and Saskatchewan 65.6 p.e., the latter proportion rising from only 16.3 p.c. in 1951. In British Columbia, 87.1 p.c. of the farms in 1961 reported electric power compared with 68.8 p.c. ten years previously.

Another indication of the growth in farm electrification is the extent to which electrical appliances are being used in farm homes. In 1961, 359,757 or 80.0 p.c. of all Canadian farm homes were equipped with a mechanical refrigerator (gas or electric), a proportion that rose from 21.9 p.c. in 1951 . Also, 40.7 p.c. of the 449,553 farm homes reported a home freezer and 67.3 p.c. reported a television set.

Farm Capital.-Much has been said in recent years of the increasing capital requirements in agriculture and the correspondingly greater difficulty experienced by the beginner-farmer to become established on a farm of his own. This is borne out by the 1961 census data on capital values and, of course, reflects the trend toward larger farms. The capital value of all farms in Canada in 1961 totalled approximately $\$ 13,200,000,000$, an amount 39.1 p.c. higher than the 1951 value of $\$ 9,500,000,000$. The average capital value per farm was $\$ 27,389$ in 1961 compared with $\$ 15,200$ ten years earlier and the average value of farm land per acre was \$76 in 1961 as against \$54 in 1951.

The capital farm value for the Prairie Region was $\$ 6,700,000,000$ in 1961 which was the highest for any region in the country; the Central Region was second with a value of $\$ 5,400,000,000$. However, British Columbia had the highest average capital value per farm, amounting to $\$ 32,967$; this was followed in order by the Prairie Provinces at $\$ 32,009$, the Central Region at $\$ 24,718$ and the Atlantic Region at $\$ 12,314$ per farm.

For Canada as a whole, the proportion of capital value made up of real estate (land and buildings) increased during the 1951-61 decade from 58.4 p.c. to 65.5 p.c. The relative importance of livestock and poultry declined from 21.2 p.c. to 15.0 p.c. and that of machinery and equipment declined only fractionally to 19.5 p.c. British Columbia had the highest average real estate value in 1961, amounting to $\$ 24,733$ per farm, and the Prairie Provinces followed with $\$ 20,393$ per farm. The highest average value for machinery and equipment was reported by the Prairie Region at $\$ 7,174$, and also for livestock and poultry at $\$ 4,442$ per farm. The predominance of the Prairie Provinces in average capital values per farm reflects the large size of farms in this region. On the other hand, capital value per acre of farm land was lower for the Prairie Region than for the other regions.

Age and Residence of Farm Operator.-Some shifting in the relative importance of the various age groups for farm operators was shown during the 1951-61 period. In $1961,16.7$ p.c. of the farm operators were under 35 years of age compared with 21.7 p.c. in 1951. For the age group 45-59 years an opposite trend was shown- 38.0 p.c. of the operators were in this group in 1961 compared with 33.3 p.c. in 1951. For the other age groups-35-44 years and 60 years or over-little change was shown, the 1961 proportions being 24.7 p.c. and 20.5 p.c., respectively.

In 1961, 88.3 p.c. of the farm operators reported that they lived on the farm the year round; the proportion was highest in the Atlantic Region ( 95.7 p.c.) and lowest in the Prairie Region ( 80.4 p.c.). Also, the proportion of operators classed as non-resident was highest on the Prairies, being 14.0 p.c. of all farms compared with a Canada average of 7.7 p.c. Included in this group in the Prairie Provinces were 29,359 farms, which represented 79.1 p.c. of all non-resident farms in Canada. In Saskatchewan, almost one in every five farms (19.2 p.c.) had a non-resident operator in 1961. This predominance of non-residency in the Prairie Provinces is associated with the type of farming that prevails in the region. Grain farming does not require as much close supervision as most other types with the result that a substantial number of the operators live in adjoining towns and villages and commute to the farm.

Farm Population and Labour Force.-The decreasing number of farms in Canada and the continuing substitution of farm labour by machines has resulted in a declining farm population and a smaller agricultural labour force. The total population on Canadian farms was reported at $2,128,400$ persons in 1961 compared with $2,911,996$ in 1951. The farm population represented 11.7 p.c. of the total population in 1961, down considerably from 20.8 p.c. in 1951. All provinces recorded decreases in farm population during the decade. In the Atlantic Provinces, the farm population made up 8.8 p.c. of the total population in 1961, ranging from a high of 33.2 p.c. in Prince Edward Island to a low of 2.4 p.c. in Newfoundland; in the Central Region, 9.7 p.c. of the total population was classified as farm population in 1961; in the Prairie Provinces, 24.1 p.c. with a high of 33.0 p.c. for Saskatchewan; and in British Columbia, 5.2 p.c.

A similar trend was shown for the agricultural labour force in relation to the total civilian labour force. For all Canada, the 1961 agricultural labour force totalled 648,966 persons and was 10.0 p.c. of the civilian labour force; the corresponding proportion in 1951 was 15.7 p.c. In 1961, the proportion for the three Prairie Provinces and Prince Edward Island exceeded the national average, whereas for the other provinces it was below the Canada average; Saskatchewan with 36.7 p.c. had the highest proportion. In all provinces the agricultural labour force was smaller in 1961 than it had been in 1951. However, the combined effect of the declining agricultural labour force, improved agricultural technology and increasing mechanization has resulted in a steadily upward trend in output per farm
worker. This is strikingly shown by the number of persons supported by one farm worker. It was estimated that 11 persons were supported by one farm worker in 1941, 15 persons in 1951, and 22 persons in 1956. By 1962, the estimate had increased to a high of 30 persons. As time goes on, output per farm worker is likely to continue to increase as improvements in technology and farm management practices together with greater mechanization and specialization displace more labour and as the output for each labour unit remaining in the industry increases. Thus, while the relative contribution of agriculture to the national economy can be expected to decrease and the number of farm operators to decline, the labour output of Canada's farms will rise and a better living standard will result for the smaller farm population.

## Section 1.-Federal Government in Relation to Agriculture*

The federal 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 Territorial Division, Northern Administration Branch, Department of Northern Affairs and National Resources.

## Subsection 1.-Services of the Department of Agriculture

Broadly speaking, the activities of the Department of Agriculture may be grouped under three headings: 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, the inspection and grading of agricultural products and the establishment of sound policies for crop and livestock improvement. Assistance programs cover the sphere of soil and water conservation, price stability, provision of credit, rural rehabilitation and development and a degree of crop insurance and income security in the event of crop failure. The Department employs a staff of more than 10,000 persons.

The organization of the Department comprises three branches-Research, Production and Marketing, and Administration. Agencies closely allied with the Department and responsible to the Minister of Agriculture are the Farm Credit Corporation, the Board of Grain Commissioners and the Canadian Wheat Board (see p. 418 and Index).

Research Branch.-The Research Branch is the principal research agency of the Department. It conducts a broad program of scientific investigation covering both basic studies and practical attacks on agricultural problems. There are seven Research Institutes

[^114]at Ottawa; two Research Institutes, ten Regional Research Stations, four Research Laboratories, 26 Experimental Farms and 20 Substations are located throughout the ten provinces and the Yukon and Northwest Territories.

The Research Branch serves all principal agricultural areas in Canada and co-ordinates its efforts with those of the National Research Council, universities and kindred agencies. One staff group is charged with the planning and co-ordination of the program and another with the administration required to carry it out. Four directors, representing divisions of animals, crops, soils, entomology and plant pathology, assist the programming of the work. Three research services-statistics, engineering, and analytical chemistry, located with the administrative and executive group at Ottawa-provide research groups across the country with specialized leadership and service and undertake critical researches or other creative work as required.

The Research Institutes are organized on a scientific rather than a problem basis and are engaged primarily on basic research of wide application to agriculture. They also carry out related national work such as the identification of plants, insects and pathogens. There are seven Institutes at Ottawa and one each at London and Belleville in Ontario.

The Animal Research Institute covers the fields of genetics and breeding, nutrition, physiology, biochemistry and management, and tackles problems in the production of milk, beef, lamb, pork, poultry, eggs, wool and fur. Studies are carried out at the Plant Research Institute in taxonomy, physiology, biochemistry, pathology, agrometeorology, weeds, and fruit and vegetable processing and storage. Cytological and genetic studies on cereal, forage, tobacco and horticultural plants are made by the Genetics and Plant Breeding Research Institute with special reference to problems encountered in the breeding programs and the assessment of quality characteristics. The Soils Research Institute studies genesis and classification, fertility, mineralogy and the organic, physiochemical and physical aspects of soils. This Institute gives leadership to the federal-provincial soil survey program through classification studies and by developing and standardizing analytical methods. It also provides a national soil-mapping service. A major section of the Entomological Research Institute deals with taxonomy, other assignments being in the fields of genetics, physiology, nematology and apiculture. The Institute assembles and maintains the national collection of insects. The Microbiological Research Institute is concerned mainly with metabolism, nutrition and genetics of bacteria of agricultural significance. The Food Research Institute conducts basic research on the characteristics of plant and animal products affecting food quality. The development of new principles of food processing and studies related to dairy technology are of major interest.

The Pesticide Research Institute at London examines chemicals used or intended to be used for insect, disease or weed control and investigates the reason for and the nature of the biological activity of the chemical. The Biological Control Research Institute at Belleville is concerned with efforts to control destructive insect pests and noxious weeds with parasitic and predaceous insects, and with insect disease organisms. It is also the principal importing centre for beneficial insects and for some disease organisms from foreign countries.

The Regional Research Stations and Laboratories cope with primary problems in various regions in all provinces. Other units have undertaken projects assisting in the exploitation of peat bogs, reclamation of marshland for pasture, prevention of soil erosion, dryland agriculture, the growing of special crops such as tobacco, and livestock breeding.

Production and Marketing Branch.-The Production and Marketing Branch conducts the promotional and regulatory functions of the Department. Its seven Divisions administer legislation and policies in the fields of agricultural production, marketing and control of disease in plants and animals. Three Sections-Markets Information, Consumer, and Transportation, Storage and Retail Inspection-carry on activities in their respective fields.

The Health of Animals Division administers the Animal Contagious Diseases Act, the Humane Slaughter of Food Animals Act and the Meat Inspection Act. The Division also operates laboratories for the study of animal diseases. Besides its responsibility in carrying out various disease prevention measures, the Division conducts programs for the eradication of bovine tuberculosis and brucellosis and issues health certificates for livestock entering export trade. The animal pathology laboratories, in addition to their research function, manufacture diagnostic reagents and biological products and provide analytical and diagnostic services for diseases of domestic and wild animals. District laboratories across the country give routine diagnostic and research services. The Livestock Division 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 brokers who deal in fresh fruits and vegetables. The Dairy Products Division is responsible for the administration of 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 pestcontrol 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 Markets Information Section compiles and distributes market information respecting livestock, meats and wool, dairy products, eggs and poultry, and fruits and vegetables: The Consumer Section.helps to promote proper use of Canadian agricultural food products through experimental work, carried on by its home economists, on the cooking of foods and the preserving of perishables. The Transportation, Storage and Retail Inspection Section administers the payment of sübsidiès for the construction of public cold storage facilities. Cargo inspectors at the main Canadian ports check the handling of goods moving to export:- Other inspectors in the principal marketing areas make spot checks on retail outlets to see that food products meet the prescribed standards of quality and grade.

Administration Branch.-In addition to its general responsibility for the business management of the Department, the Administration Branch embraces the Divisions concerned with Economics and Informátion. Administration of the rehabilitation and assistance programs is also associated with this Branch.

The Economics Division collects, analyses and interprets economic information required to form and administer departmental policies and programs. It conducts economic surveys and research designed to improve agricultural production, marketing, and farm living conditions. The Division acts as an economic and statistical research agency for the Agricultural Stabilization Board, the Prairie Farm Rehabilitation Administration and other bodies, assisting in any economic undertaking with which the Department is concerned.

The Information Division gathers and publishes information arising from research work and the development and regulatory programs of the Department. ${ }^{\text {It }}$ employs all the recognized media-printed publications, press and radio releases, motion pictures and television. In addition, the Division operates the central library of the Department and a system of field libraries located at major research centres of the Department across Canada.

## 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. 433) to deal with the results of the drought in the 1930's; the Prairie Farm Assistance Act (p. 421) to mitigate the effects of crop failure; and the Maritime Marshland Rehabilitation Act (p. 437) to save valuable soil in the Maritime Provinces.

Although much has been accomplished by these measures, changing conditions have dictated the need for a new approach. In the past two decades agriculture has undergone revolutionary changes. Large-scale mechanization, increasing farm size coupled with declining farm numbers, and shrinking world markets have called for a reappraisal of policy, resulting in a number of legislative enactments in the agricultural field. These cover such matters as credit provision, price stability, crop insurance, resource development, and policies to assist regional groups to catch up with the national level of progress; they are described individually below. In addition, legislation has been passed from time to time giving assistance to meet temporary or short-term contingencies, such as the Western Grain Producers' Acreage Payment Regulations which, following the drought in 1957, provided for the payment to each grain producer of $\$ 1$ for each acre seeded in 1958 up to an amount of $\$ 200$; and the Prairie Grain Loans Act which provided for shortterm credit to grain producers of the Prairie Provinces to meet temporary difficulties encountered during the 1959-60 crop year from inability to thresh their grain.

The 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. The Corporation, which is a self-supporting Crown corporation, reports to Parliament through the Minister of Agriculture.

The Act provides two types of long-term mortgage loans. Under Part II of the Act, the Corporation may lend up to 75 p.c. of the appraised value of the farm land taken as security, or $\$ 20,000$, whichever is the lesser, repayable within a period of up to 30 years. Under Part III of the Act, the Corporation is empowered to make loans of up to 75 p.c. of the value of the farm land and chattels taken as security, or $\$ 27,500$, whichever is the lesser, to young farmers aged 21 to 44 , inclusive, who have at least five years of experience in farming; that portion of the loan secured by farm land is repayable within a period of up to 30 years and that portion (if any) based on chattel security must be repaid within the first ten years. A Part III loan is further secured by mandatory insurance upon the life of the borrower, and his farming operations are subject to supervision by the Corporation until the loan has been reduced to 75 p.c. of the appraised value of the farm land. Similar insurance coverage is available to Part II borrowers on an optional basis. The interest rate on all loans is fixed by the Act at 5 p.c. In 1962, after three years of operation under the terms of the original Farm Credit Act, amendments were made to the Act and Regulations to provide a greater measure of flexibility in meeting the bona fide credit needs of Canadian farmers.

The Corporation has 127 field areas administered by 164 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.

Funds for lending are borrowed at current interest rates 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, which has been fixed by the Act at $\$ 16,000,000$.

In the year ended Mar. 31, 1963, the Farm Credit Corporation approved 7,438 loans for a total of $\$ 90,924,300$ as compared with 5,885 loans for a total of $\$ 68,574,850$ in the preceding year; the total amount of principal outstanding on loans was $\$ 270,277,265$ (secured by 37,462 first mortgages and 13 second mortgages) as compared with $\$ 212,138,307$ the previous year.

## 1.-Loans Approved and Disbursed under the Canadian Farm Loan Act ${ }^{1}$ and the Farm Credit Act, Years Ended Mar. 31, 1954-63

Norg.-Figures for earlier years are given in the corresponding table of previous Year Books beginning with the 1940 edition.

| Year Ended <br> Mar. 31- | Loans Approved |  | Loans <br> Paid Out | $\begin{aligned} & \text { Year Ended } \\ & \text { Mar. 31- } \end{aligned}$ | Loans Approved |  | Loans <br> Paid Out |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | \$ | \$ |  | No. | \$ | \$ |
| 1954. | 2,091 | 7,816,750 | 7,000,539 | 1959. | 4,805 | 30,144,950 | 28,368,265 |
| 1955. | 2,145 | 8,225,500 | 8,207,002 | 1960 | 5,339 | 40,031, 250 | 35,840,882 |
| 1956. | 2,057 | 8,309,650 | 8,254,322 | 1961 | 5,597 | 60,704,050 | 52,305,265 |
| 1957. | 2,921 | 13,978,700 | 13,183,992 | 1962. | 5,885 | 68,574,850 | 68,886,875 |
| 1958. | 3,702 | 21,278,450 | 19,343,560 | 1963 | 7,438 | 90,924,300 | 78,428,094 |

${ }^{1}$ Repealed by the Farm Credit Act, proclaimed Oct. 5, 1959.

## 2.-First Mortgage Loans Approved under the Canadian Farm Loan Act ${ }^{1}$ and the Farm Credit Act, by Province, Years Ended Mar. 31, 1961-63

Nots.-Figures for earlier years are given in the corresponding table of previous Year Books beginning with the 1940 edition.

| Province | 1961 |  | 1962 |  | 1963 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | \$ | No. | \$ | No. | \$ |
| Newfoundland. | - | - | 1 | 6,100 | 1 | 20,000 |
| Prince Edward Island. | 90 | 598,000 | 113 | 733,200 | 122 | 929,300 |
| Nova Scotia. | 20 | 26.1,500 | 41 | 499,900 | 60 | 692,200 |
| New Brunswick | 46 | 362,050 | 111 | 1,109,700 | 101 | 1,192,500 |
| Quebec. | 106 | 1,646,550 | 109 | 1,786,100 | 804 | 11, 434,700 |
| Ontario. | 1,590 | 19,151,700 | 1,383 | 17,104,400 | 1,526 | 20,144,700 |
| Manitoba. | , 317 | 3,481, 300 | - 429 | 5,024,000 | -479 | 5,390,500 |
| Saskatchewan | 2,008 | 19,014,550 | 1,936 | 19,812,350 | 2,307 | 23, 271,700 |
| Alberta....... | 1,217 | 13,182,600 | 1,518 | 18,447,600 | 1,722 | 22,834, 200 |
| British Columbia | 203 | 3,002,800 | 244 | 4,051,500 | 316 | 5,014,500 |
| Totals. | 5,597 | 60,704,050 | 5,885 | 68,574,850 | 7,438 | 90,924,300 |

[^115]The 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 electric 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 commencing July 1, 1962 and ending June 30, 1965. Under that extension, fulltime beekeepers are made eligible for loans and the maximum loan or amount available at any one time to a borrower is $\$ 7,500$. 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 40 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 $\$ 400,000,000$. By Dec. $31,1961,1,984$ claims amounting to $\$ 1,356,196$ 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.

By the end of $1961, \$ 928,088,913$ or 82.7 p.c. of the total loans made had been repaid. The position at that time was as follows:-

| Period | Loans Outstanding | P.C. of Total Loans Outstanding |
| :---: | :---: | :---: |
|  | $\$$ |  |
| 1945-48. | 449 | 0.01 |
| 1948-51. | 59,781 | 0.05 |
| 1951-53. | 306, 895 | 0.17 |
| 1953-56. | 1,336,139 | 0.60 |
| 1956-59. | 13,902,386 | 5.82 |
| 1959-62 (current period) | 178, 234,964 | 60.70 |
| Totals. | 193,840,614 | 17.30 |

## 3.-Loans Made under the Farm Improvement Loans Act, by Purpose and Province, 1960 and 1961, with Cumulative Totals from 1945


Prairie Grain Advance Payments Act.-This Act, which came into force on Nov. 25, 1957, provides for an 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 $\$ 3,000$. At Dec. 31, 1961, the following advance payments had been made:-

| Period | Applications | Total Advance | Average <br> Advance |
| :---: | :---: | :---: | :---: |
|  | No. | \$ | \$ |
| Aug. 1, 1957-July 31, 1958. | 50,412 | 35,203,467 | 698 |
| Aug. 1, 1958-July 31, 1959. | 45,341 | 34,369,653 | 758 |
| Aug. 1, 1959-July 31, 1960 | 50,047 | 38,492,505 | 769 |
| Aug. 1, 1960-July 31, 1961. | 76,089 | 63,912,550 | 839 |
| Aug. 1, 1961-July 31, 1962 | 22,342 | 16,656,713 | 745 |
| Aug. 1, 1962-Dec. 28, 1962. | 36,789 | 27,764,402 | 754 |

Repayment is effected by deducting 50 p.c. of the initial 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 Dec. 31, 1962, refunds had been made as follows:-

| Period | Total Refunded | Total Advance Outstanding | Percentage Refunded |
| :---: | :---: | :---: | :---: |
|  | \$ | \$ |  |
| Aug. 1, 1957-July 31, 1958. | 35,197,943 | 5,524 | 99.9 |
| Aug. 1, 1958-July 31, 1959. | 34, 358, 066 | 11,587 | 99.9 |
| Aug. 1, 1959-July 31, 1960. | 38,473, 908 | 18,597 | 99.9 |
| Aug. 1, 1960-July 31, 1961. | 63,784,910 | 127,640 | 99.8 |
| Aug. 1, 1961-July 31, 1962. | 16,156,093 | 500,620 | 96.9 |
| Aug. 1, 1962-Dec. 28, 1962 | 11,586,868 | 16,177,534 | 41.7 |

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 1961 crop, as at July 31, 1962, totalled $\$ 53,988,705$; total payments made under the Act since 1939 amounted to $\$ 314,829,673$.

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 1961 was $\$ 6,839,498$. The total amount collected since 1939 was $\$ 139,092,707$.

The average yield of wheat in a township or block of sections is the basis on which payments are made. If the average yield is eight bushels per acre or less, all farmers within that area receive payments except those on the sections having a yield of 12 or more bushels per acre. The smallest isolated block eligible for payment is one third of a township ( 12 sections), provided such block is rectangular in shape. A block as small as one section within an ineligible township is eligible for payment if a side lies along the boundary of an eligible township.

If an area consisting of one third or more of the cultivated lands in any six or more adjoining sections could not be seeded or summerfallowed because of flooding or other natural causes beyond the control of the farmers, such area is eligible for award at $\$ 4$ per acre on one half of the cultivated acreage of each farmer. Only those farmers who make
their homes and are ordinarily resident in the spring wheat area are eligible for award and no award can be made with respect to more than 200 acres of the cultivated land of a farmer.

There are three categories of payments: (1) if the average yield of wheat for the township or block of sections, excluding those sections having a yield of 12 or more bushels per acre, is more than five and not more than eight bushels per acre, the payment is $\$ 2$ per acre on one half of the total cultivated acreage of the farmer; (2) if the average yield of wheat for the township or block of sections, excluding those sections having a yield of 12 or more bushels per acre, is more than three and not more than five bushels per acre, the payment is $\$ 3$ per acre on one half of the total cultivated acreage of the farmer; (3) if the average yield of wheat for the township or block of sections, excluding those sections having a yield of 12 or more bushels per acre, is three bushels or less per acre, the payment is $\$ 4$ per acre on one half of the total cultivated acreage of the farmer.

In the zero-to-five-bushel categories the minimum payment is $\$ 200$, although a farm must have at least 25 acres under cultivation other than land that is seeded to grass, or be in the development stage, to qualify for this minimum award.

The Grop 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.

Contributions from the federal treasury are limited to 50 p.c. of the administrative costs incurred by a province and 20 p.c. of the amount of premiums paid in any year. 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 $\$ 200,000$. Those farmers who take advantage of an insurance scheme set up under the Act are not eligible for any payments under the Prairie Farm Assistance Act, nor are they required to pay the 1-p.c. levy on grain sales as provided for under that Act.

As at Dec. 31, 1962, three provinces-Manitoba, Saskatchewan and Prince Edward Island-had passed crop insurance legislation. Manitoba operated a test area scheme in 1960, 1961 and 1962; in 1962 some 4,500 farmers in the province purchased insurance with a total liability of $\$ 10,000,000$. Saskatchewan operated a test scheme in 1961 and 1962; in 1962, 1,350 farmers participated in the scheme and provision was made for the Provincial Crop Insurance Board to accept liability for $\$ 5,000,000$ coverage in 1963. Prince Edward Island operated an insurance scheme for potato crops in 1962 and planned to extend the scheme in 1963 to provide coverage for grain crops.

The Agricultural Stabilization Act.*-The Agricultural Stabilization Act (SC 1958, c. 22, proclaimed Mar. 3, 1958) established the Agricultural Stabilization Board which is empowered to stabilize the prices of agricultural products in order to assist the agricultural industry in realizing fair returns for its 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 the price of nine named or mandatory 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) at not less than 80 p.c. of the previous ten-year average market, or base, price. Other commodities may be supported at such percentage of the base price

[^116]as may be approved by the Governor in Council. The Board may stabilize the price of any product in one or more of three ways: by an offer-to-purchase; by a deficiency payment; or by making such payment for the benefit of producers as may be authorized.

The price stabilization program in stabilizing prices of certain commodities by means of deficiency payments has been useful in assisting the agriculture industry to make production adjustments from a position of excessive supply to one of more normal relationship between supply and demand. Examples of this are hogs and eggs. The institution of limited deficiency payments by the Board assisted in a necessary adjustment of production in a relatively short time. During the period of adjustment the Board guaranteed a minimum average return to producers for a limited quantity of product.

The Agricultural Stabilization Board has available a revolving fund of $\$ 250,000,000$. Any losses incurred through the Board's operations are made up by Parliamentary appropriations and any surplus is paid back to the Consolidated Revenue Fund. Assisting the Board in its operations is an Advisory Committee named by the Minister of Agriculture and composed of farmers or representatives of farm organizations.

The Agricultural Rehabilitation and Development Act.-This Act, introduced in 1961, is an important element in national agricultural policy and national resources management policy. It is designed to increase income in the rural areas of Canada and promote better land use and soil and water conservation. The Act authorizes the Federal Government to enter into agreements with provincial governments for the joint undertaking of: (1) projects for the alternative use of lands classified as marginal or of low productivity; (2) projects for the development of income and employment opportunities for rural agricultural areas; and (3) projects for the development and conservation of soil and water resources of Canada.

The alternative uses of land contemplated for lands unsuitable for profitable cultivation include programs for tree planting and farm woodlot management, grassing and pasturage, and recreational uses of various types, including public shooting areas and wildlife management areas. The program envisages the creation of new income opportunities for people in rural areas through the use of the rural development concept. It is proposed that studies be conducted of the economic development factors in local areas, and committees of local people will be involved in proposed development plans for their areas. Through the development plan, government assistance will be focused on helping local people to develop new and expanded income opportunities.

The conservation of soil and water resources for agricultural purposes, the third major objective of the legislation, is not new. For years, activities under the Prairie Farm Rehabilitation Act and the Maritime Marshland Rehabilitation Act have been directed toward this end but these are regional undertakings. Under the Agricultural Rehabilitation and Development Act, soil and water conservation as an aid to agriculture will be extended to cover the whole country so that it will be possible for agriculture throughout Canada to enjoy the benefits of federal assistance on resource conservation.

The Act also authorizes the Federal Government to carry on broad-scale research and it is proposed to conduct basic research on national land-use needs and rural adjustment trends. Toward the end of 1961, a Director of the Act was appointed and discussions were held with all the provinces on projects and programs leading to federalprovincial agreements.

By October 1962, the general ARDA agreement had been signed by all ten provinces and by mid-1963, with ARDA in its first full season of operation, 163 projects were under way in rural areas across the country, at a total cost of about $\$ 7,000,000$. An example of the type of project launched is a detailed land-use survey in Newfoundland. At present, arable land is too scarce to supply local demands for vegetables and the survey will provide an inventory of available farm and garden land. Other ARDA projects include: a community pasture at Wanham, Alta.; a major research program in Saskatchewan to discover sound principles for broad rural development programs; a rural development research
program in Manitoba's interlake region; research around Burlington, Ont., on the problem of urban expansion in farming regions; stream development projects in Quebec for land reclamation and a scheme for setting up an experimental maple grove to demonstrate syrup and sugar production techniques; advisory services for woodlot management in New Brunswick and a resettlement project in the Bay of Chaleur area; a large program of surface ditching, land clearing and rural pond construction in Nova Scotia; and development of recreational areas on submarginal land in Prince Edward Island. Discussions were being held with British Columbia officials on a number of soil and water conservation projects for flood control and land reclamation in river valleys.

## 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 21 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. Small fruit development is promoted through the distribution of quality foundation stock.

Every encouragement is given to the production of livestock. An experimental sheep flock is maintained. Poultry and beef production have increased with favourable marketing conditions and with departmental assistance and loans under the Provincial Farm Development Loan Act. A veterinary supervises the health of animals program and the joint federal-provincial project for the eradication of bovine tuberculosis.

The Agricultural Division co-operates with the Department of Education in furthering the $4-\mathrm{H}$ 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 and Assistant, two Check Testers, three Dairy Herd Improvement Promoters, a Director of Veterinary Services and ten subsidized practising veterinarians, a Livestock Director, a Marketing Director, a Horticulturist, a Soil Analysis Assistant, a Poultry Fieldman, an Economist, two Agronomists, a Director of 4-H Clubs, three Agricultural Representatives, a Nursery 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 organizations. The Department is assisted by the Nova Scotia Advisory Committee on Agricultural Services which has been established to promote agricultural policies and projects of the

[^117]federal and provincial Departments of Agriculture. The Committee meets quarterly to determine how the work of these Departments may be co-ordinated and directed through integrated agricultural policies and with minimum duplication of services.

New Brunswick.-Provincial government agricultural policy in New Brunswick is directed by the Department of Agriculture. The Department is headed by the Minister of Agriculture who is assisted by a Deputy Minister and the Directors of the following Branches: extension, livestock, dairy, veterinary, poultry, horticulture, field husbandry, potato and plant protection, agricultural engineering, home economics, credit union and co-operative, and agricultural education.

Quebec.-The Quebec Department of Agriculture and Colonization comprises seven large services: production and marketing; farm management; research, education and information; rural engineering; colonization; administration; and rural planning (ARDA). Each service has divisions and sections, each dealing with particular problems.

In addition, various special organizations are under the jurisdiction of the Department: the Agricultural Marketing Board, the Farm Credit Bureau, the Rural Electrification Bureau, the Veterinary Science School, the Quebec Sugar Refining (St. Hilaire), the Deschambault Farm School, the Artificial Insemination Centre for Cattle (St. Hyacinthe), the Provincial Dairy School (St. Hyacinthe), the Dairy Industry Commission and the Agricultural Research Council. The latter is an advisory body composed of representatives of the agricultural institutions, of the federal and provincial Departments of Agriculture and of agricultural organizations. It does not operate laboratories but promotes research in all fields of agriculture through grants paid to agricultural faculties in the province; such research projects are supervised by university personnel. The Council also conducts a program of bursaries to induce graduates in scientific agriculture to pursue specialized studies. The findings of research projects sponsored by the Department are published in Recherches agronomiques.

The agricultural co-operative movement is very extensive in Quebec: 467 co-operatives have 70,769 members, 87 agricultural societies have 28,078 members, and 369 agricultural clubs have 17,247 members; 754 farm women's clubs have a total membership of 40,000 women and young girls; and there are 145 young farmers' clubs with a membership of 3,300 boys and 1,315 girls.

Every year a competition is held for the Agricultural Merit Order to ascertain the personal merit of the farmers who have most distinguished themselves in the agricultural field and can serve as examples. The annual competition is held successively in the five regions into which the province is divided. Each contest lasts five years and covers the various farm enterprises of the competitor. County Farm Improvement Contests have also been held for 30 years at the county and parish level; they tend to promote better methods of culture and farm management and to increase farm income. By early 1963, 8,500 farmers had benefited from them.

Ontario.-The Ontario Department of Agriculture provides financial assistance and administrative services through its Head Office, 11 branches and two Experimental Farms, and through research and extension work 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 a Deputy Minister with the assistance of two Assistant Deputy Ministers. The Ontario Agricultural College, the Ontario Veterinary College and Macdonald Institute (the Federated Colleges of Ontario) report to the Minister and Deputy Minister. The Research Institute is the responsibility of the Director of Research who, in turn, reports to the Deputy Minister. During 1962 a new office was established to develop programs under the Agricultural

Rehabilitation and Development Act of Canada. The Department is charged with the supervision of the agricultural schools, the Ontario Telephone Service Commission, the Accounts Branch and Personnel.

The Marketing Division is responsible for the administration of the Co-operatives Branch, the Dairy Branch, the Market Development Branch, the Farm Products Inspection Service and the Farm Labour Committee. The services of the Co-operatives Branch are designed to encourage and assist co-operatives to operate sound and successful businesses under the control of their members; it also administers the Co-operatives Loans 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 Industry Board of Ontario, functioning under the authority of the Milk Industry Act, regulates and supervises the marketing of milk and cream. The Market Development Branch seeks to widen markets for Ontario farm products both domestically and abroad.

The Division of Production and Extension administers the Extension Branch, Live Stock Branch, Farm Economics and Statistics Branch, Agricultural and Horticultural Societies Branch, Demonstration Farms, and the Field Crops Branch. 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-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 Service, which is part of the Extension Branch, gives leadership to organized activities of rural women. The Live Stock Branch promotes livestock improvement policies with particular attention to the health of animals, gives support to purebred livestock associations, licenses artificial insemination centres, community sales, wool warehousemen and egg grading stations. The Farm Economics 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. 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. Demonstration Farms in northern Ontario, one at New Liskeard and another at Sault Ste. Marie, are operated for the demonstration of methods adaptable to the area concerned, present emphasis being on beef cattle production. The Field Crops Branch assists in the development of good cultural practices, promotes the use of improved strains of seed and works for the improvement of pastures; it also 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: agricultural extension; livestock; dairy; soils, crops and weeds administration; agricultural publications, statistics and radio and information service; co-operative services; the provincial veterinary laboratory; and water control and conservation.

The Extension Service deals with agricultural economics, horticulture, poultry, agricultural engineering, entomology and beekeeping, 4-H Clubs and women's work, and has specialists devoting attention to these subjects. Meetings, field days, and short courses are held. Thirty-seven agricultural representatives and six assistants are located in 35 offices in the province, each serving from one to five municipalities; 14 home economists serve designated areas.

The Live Stock Branch administers the Animal Husbandry Act, develops and administers policies that encourage the improvement and production of livestock, and works in close co-operation with the Veterinary Laboratory Service and the federal Health of Animals Division in the control of livestock diseases.

The Dairy Branch administers the Dairy Act, supervises the grading of cream, inspects creameries and cheese factories, gives instruction in cheese and butter making, issues licences to makers of dairy products and to cream graders and conducts a dairycost study among milk producers. Extension activities include addressing meetings and preparing articles and leaflets on dairy farm problems.

The Soils and Crops Branch encourages the development, production and improvement of cereal, forage and special crops, and promotes proper land use through soil conservation programs. Also, weed control is co-ordinated through administration of the Noxious Weeds Act. The Branch develops and administers policies that encourage good field crop husbandry, soil conservation and weed control, and co-operates with other agencies toward this end.

The Agricultural Publications and Statistics Branch publishes and distributes annually approximately 125,000 bulletins, circulars, posters, leaflets, etc. It provides the public with agricultural statistics relating to Manitoba agriculture, and maintains an information service which uses the media of the press, radio and TV.

The Co-operative Services Branch takes care of the registration and supervision of co-operatives and credit unions and the administration of the Acts governing them. It also collects and compiles statistics on co-operative activity throughout the province.

The Veterinary Laboratory operates a diagnostic laboratory for animal diseases, the services of which are available to veterinarians and livestock owners.

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. Through the Departmental Act and other associated statutes, provision is made for the construction of works to control and use water, and to provide technical and financial assistance to local governments for the construction, maintenance, and operation of such works. Under the direction of the director and chief engineer, the Floodway Division is responsible for co-ordinating all matters in respect to design and construction of the proposed Red River Floodway.

Saskatchewan.-The Saskatchewan Department of Agriculture is organized in the following branches and services.

The Secretary of Statistics collects data on crop conditions, production, marketings and income. Farm information is dispensed daily over private radio stations, over TV stations and to the press by the Radio and Information Division. The Agricultural Representative Service has a technical staff comprising a director, an assistant director, 40 agricultural representatives and three assistants, four area supervisors, five farm management specialists and one audio-visual aids supervisor. This extension field staff 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. District Boards with representatives from each Committee assist the agricultural representative in planning and developing a district agricultural improvement program. Through an Earned Assistant Program, the Department pays one half the cost of local group development projects. In farm labour matters, co-operation is maintained with the federal Department of Labour and the National Employment Service in directing annual movements of farm labour in and out of the province.

The Animal Industry Branch employs livestock specialists who provide technical information through Agricultural Representatives, press, radio and directly to producers and who administer the ROP program for beef cattle. For administrative purposes, the Branch has four divisions: the Dairy Division 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 agents and promotes programs on insect control, feeding and management; the Poultry Division maintains poultry and turkey testing and banding services under Saskatchewan Hatchery Supply Flock Policies, licenses produce dealers and poultry buyers, hatcheries and hatchery agents, assists with poultry shows and field days, 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 projects. Reclamation of land by drainage, development of misused land and under-utilized land, and construction of provincial community pastures all come within its jurisdiction. The Branch provides engineering assistance to conservation and development areas, water users' districts, and irrigation districts in connection with water control projects. The Water Rights Division of the Branch is responsible for the administration of the ground and surface water of the province and provides for regulated use of water for domestic, municipal, industrial, irrigation, water power, recreation, wildlife and other purposes.

The Lands Branch administers Crown and Land Utilization Board lands, except forest reserves and parks in the settled area of the province; classifies it according to the use for which it is best suited; disposes of such lands 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. Cultivated Crown lands may be purchased by lessees.

The Plant Industry Branch organizes and administers programs for crop improvement and crop protection, and advises on seed and crop improvement, soil conservation, horticultural problems, and weed and pest control. The improvement of grassland is promoted through a forage crop program. The Seed Plant Division carries on custom cleaning of forage seeds and registered cereals. The Apiary Division advises on beekeeping and honey production and conducts continuous inspection.

The Agricultural Machinery Administration carries out detailed tests on agricultural machines being sold in Saskatchewan to evaluate their structural and functional performance; results are made available to the public. The Administration is also responsible for the inspection and licensing of farm implement vendors within the province. Investigations are made into complaints arising out of machinery purchase and use with a view to equitable settlement without the necessity of litigation. Further services direct to the public are provided through an agricultural machinery extension program.

The Family Farm Improvement Branch assists farmers by providing technical services, materials, construction services, and financial assistance with farmstead development. The Branch specializes in such farmstead problems as buildings, water and sewage works, household problems, and materials handling.

Alberta.-The Alberta Department of Agriculture is organized in the following branches and services.

The Field Crops Branch administers programs and policies relating to crop improvement, soil conservation and weed control, crop protection and pest control, horticulture and apiculture. Agricultural Service Boards have been organized in municipal districts to assist with agricultural programs, and the Department of Agriculture is represented on each Board.

The Live Stock Branch aids in maintaining the quality of herds and flocks by assisting farmers in securing purebred herd sires and assists artificial breeding associations in the breeding of dairy cattle. The Branch also supervises livestock feeder associations and administers legislation relating to stock inspection, brands, domestic animals and the sale of horned cattle.

The Dairy Branch administers the Dairymen's Act and the Frozen Food Locker Act. 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 dairies and frozen-food lockers. A regular cow-testing service is available to dairy producers and the Branch laboratory conducts chemical and bacteriological analyses needed for industrial directives. Yearly cost studies and dairy farm management services are in operation in the principal milk-producing areas.

The Poultry Branch carries on programs for the improvement of poultry husbandry and supervises flock approval for the control of pullorum disease. The Branch issues hatchery, wholesale, first receiver and trucker licences for the handling of poultry products.

The Veterinary Services Branch provides scientific diagnoses of livestock and poultry diseases through its laboratory; conducts investigations of disease conditions; lectures in veterinary science at the University of Alberta, Schools of Agriculture, and many meetings; and promotes government policies aimed at reducing losses throughout the province.

The Agricultural Extension Service operates 44 offices and employs the services of 61 district agriculturists and 21 district home economists. The district agriculturists assist farmers with their problems and advance departmental policies designed to improve the standard of agricultural practices. The district home economists provide a similar service for farm women. Bulletins are prepared dealing with agricultural and home economics topics. The Branch is responsible for the supervision of agricultural societies and, in co-operation with the federal Department of Labour, is concerned with recruitment and placement of farm labour.

The Fur Farms Branch administers the licensing and exporting of live animals and pelts, and assists fur farmers in care, management and stock improvement; the Radio and Information Branch conducts five broadcasts a week over seven radio stations and issues weekly bulletins to press and radio; the Water Resources Branch deals with water rights, drainage, irrigation, and water power development; the Lands and Forests Utilization Committee (composed of representatives from the Department of Lands and Forests, Power Commission, Department of Municipal Affairs, University of Alberta and Department of Agriculture) deals with the proper use of submarginal agricultural land; and the Farm Economics Branch, formed Jan. 1, 1961, studies various economic farm problems and advises farmers on management techniques.

Credit is made available to young farmers for the purchase of farm lands under the Farm Purchase Credit Act and the Farm Home Improvement Act. Schools of Agriculture and Home Economics are operated at Olds, Fairview and Vermilion (see p. 432).

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 beef grading. In addition, the Branch supervises the operations of the Dairy Branch in the inspection of commercial dairy premises. Officials are stationed at 11 centres throughout the province.

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 10 points in the southerly section of the province.

The Agricultural Development and Extension Branch offers general information services to farmers through 19 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. The Poultry Branch offers extension services to the poultry industry.

## Subsection 2.-Agricultural Colleges and Schools

All provinces provide facilities or assistance for training in agricultural science at university level. The colleges and schools are administered by either the Department of Agriculture or the Department of Education of the respective province.

Newfoundland.-There are no agricultural colleges in the province but the Agriculture Division of the Department of Mines, Agriculture and Resources provides a number of scholarships annually for young men to attend agricultural colleges in other provinces.

Prince Edward Island.-A two-year course in scientific agriculture offered at Prince of Wales College, Charlottetown, prepares students for third year at Macdonald College, Que. In the Vocational School, short courses provide knowledge and skill in agricultural pursuits and develop in the student a sense of the dignity and importance of agriculture as a calling and an understanding of the value of the industry to the province.

Nova Scotia.-The Nova Scotia Agricultural College at Truro offers two coursesthe first two years of a degree course in agriculture and a two-year course in vocational agriculture. The College assists in conducting short courses at various provincial centres, supports Folk Schools and gives direction to $4-\mathrm{H}$ Clubs, Women's Institutes and other junior and senior production and marketing organizations. Tuition is free for Canadian students.

New Brunswick.-The three agricultural schools of New Brunswick are located at Woodstock, St. Joseph and St. Basile, each offering a two-term agricultural course extending over five months in the year. The curriculum includes training in all phases of agriculture, shop and general academic work. Ten-month home economics courses are also offered at Woodstock and St. Joseph.

Quebec.-Laval University (at Quebec) and McGill University (Macdonald College at Ste. Anne de Bellevue) offer courses leading to a degree of Bachelor, Licentiate, Master or Doctor of Science in Agriculture and the Provincial Veterinary School (at St. Hyacinthe), affiliated with the University of Montreal, offers a course leading to a doctorate in veterinary medicine. Two agricultural technological institutes (at Ste. Anne de la Pocatière and St. Hyacinthe), opened in 1962, give training in modern farming techniques and in the handling and processing of farm products.

There are also 15 secondary agricultural schools located throughout the province, and five orphanages offer courses in agriculture. About 1,000 students, the great majority of whom are sons of farmers, attend these intermediate or regional schools of agriculture and 230 pupils follow practical agricultural courses in the orphanages. A farm is annexed to each school for practical training and specialists give instruction on the maple sugar industry, farm mechanics, co-operatives, plant protection, veterinary hygiene, aviculture, marketing, silviculture, etc. School co-operatives and clubs are organized and directed by the pupils under supervision. Household training for the daughters of farmers and settlers is given in nine of these schools.

Ontario.-A two-year course at the Ontario Agricultural College (for the Associate Diploma in Agriculture) provides basic training for young persons interested in making agriculture their vocation. Study includes the application of science to agricultural practice and training for rural citizenship. A four-year course at the same institution for the degree of Bachelor of Science in Agriculture gives fundamental education in the science of agriculture. Sound training is provided for farming as a profession, for entrance into all agricultural services, industry and teaching, and for those who wish to proceed to graduate studies for master and doctorate degrees. Graduate courses are offered leading to the degree of Master of Science in Agriculture. Graduate students are enrolled in a department or departments of the Ontario Agricultural College conjointly with a department or departments of the University of Toronto for advanced courses of study and training in experimentation and scientific investigation. M.S.A. graduates may go into teaching, research or postgraduate study.

Macdonald Institute offers two main courses in home economics for young women. The one-year course of practical training in the art and science of homemaking earns a diploma of merit but gives no professional standing. The four-year professional course leads to a Bachelor of Household Science degree granted by the University of Toronto. University matriculation standing (nine papers of grade 13) is necessary to enter the four-year course. At its completion, Food Administration Option graduates are eligible to work in the professional dietetic and food-service fields. These graduates and those of the Clothing and Textiles Option and the Home Management Option are finding increasing employment in many areas, notably in the education, extension, business and research fields.

The Ontario Veterinary College offers a five-year course leading to the degree of Doctor of Veterinary Medicine. In addition to its function as a teaching institution, the College is a research centre for animal diseases and provides free consultation services for veterinary surgeons in practice as well as extension services in the interests of the livestock industry.

The Kemptville Agricultural School offers: a diploma course in agriculture comprised of two six-month terms, giving practical training in modern farming methods and community leadership, and designed primarily for young people who wish to farm but serving also as a preparation for many other occupations closely connected with agriculture; a six-month advanced course in agricultural mechanics for diploma graduates in agriculture; a six-month homemaker course leading to a diploma in homemaking and qualification for positions in home economics fields; a diploma course comprised of two six-month terms for girls wishing to prepare for positions in food services, sewing centres, tourist services and other fields of home economics. In addition, a three-month course is given for dairy apprentices, leading to the Dairy School Diploma required for certified buttermakers, cheesemakers and operators of dairy manufacturing plants. A 450-acre farm and residence life are features of the Kemptville Agricultural School.

The Western Ontario Agricultural School at Ridgetown offers a two-year diploma course (October to April), which gives practical training in modern farming methods and prepares young men to serve agriculture in allied occupations. The facilities comprise a group of modern buildings, including a residence and dining hall, modern classrooms, laboratories, and athletic facilities. There is a 425 -acre farm with up-to-date equipment, much of which is used for student activity and for practical demonstrations. A full complement of livestock is maintained on this farm for carrying out the school program.

Manitoba.-The Faculty of Agriculture and Home Economics of the University of Manitoba offers degree courses in agriculture and home economics as well as a two-year, sub-collegiate diploma course in agriculture. Practical short courses in agriculture and homemaking are also given at the Agricultural Extension Centre at Brandon.

Saskatchewan.-The University of Saskatchewan offers a degree course in agriculture designed to meet the needs of those who intend to teach agriculture in secondary
schools or colleges, to engage in research extension or administrative work, or to farm. Specialization is possible with permission of the faculty. Provision is made for combined courses in agriculture and arts or commerce. Postgraduate courses are available.

The Saskatchewan School of Agriculture offers a practical course intended to give sound training in farm practice and also to train young men in rural leadership.

All courses leading to a degree in home economics require four years. The prescribed course of studies for the first two years is the same for all pupils but in the third and fourth years four types are offered: (1) for teachers, (2) for dietitians, (3) general, and (4) additional specializations. A combined course leading to a degree in arts and science and home economics requires at least five years.

Alberta.-The University of Alberta offers a four-year degree course in agriculture to students with senior matriculation or its equivalent. Students may elect a general program or major in a wide range of special courses in the fields of animal science, economics, entomology, dairying, plant science, and soils. Graduate work at the master level is offered in all departments and at the doctorate level in some.

The Alberta Schools of Agriculture and Home Economics located at Olds, Vermilion and Fairview will, commencing in the autumn of 1963, plan new programs designed primarily for rural young people. To give greater flexibility and allow for specialization, courses will be offered in terminal three-month sessions. Three sessions will be held at Olds and two at both Vermilion and Fairview. Students with grade 9 standing will require successful completion of four sessions. Those with 70 or more high school credits can secure a diploma after three sessions. Boys can take general-specialized work in agriculture and girls can choose commercial, general home economics (Vermilion only), and clothing or foods specialties at Olds and Fairview.

British Columbia.-The Faculty of Agriculture at the University of British Columbia offers a four-year general degree course in agriculture and a five-year honours course. In the honours course there are 15 fields in which a student may specialize. Work is also offered by the Faculty of Agriculture in the Faculty of Graduate Studies through which a student may proceed to the degrees of Master of Science in Agriculture and Master of Science; in a limited number of fields, work is offered at the doctorate level. The Faculty also offers a one-year or two-year diploma course in occupational agriculture, adaptable to the needs of individual students.

In co-operation with various branches of the provincial Department of Agriculture and under the auspices of the University Extension Department, the Faculty of Agriculture also offers a number of short courses which vary in length from one or two days to several weeks.

## Section 3.-Land and Water Conservation*

## Subsection 1.-Federal Projects

Federal participation in programs designed to aid in the conservation of Canada's land and water resources began before the turn of the present century. Starting in 1877, this included the work of the now disbanded Department of the Interior in the field of engineering survey and development of water resources in Western Canada; later, such programs included those conducted by the Prairie Farm Rehabilitation Administration in the fields of soil and water conservation on the prairies, the work of the Marshlands Reclamation Service on the eastern seaboard, water development projects undertaken by the Department of Northern Affairs and National Resources under the terms of the Canada Water Conservation Assistance Act and, most recently, the broad and comprehensive resource development program for all of Canada envisaged under the new Agricultural

[^118]Rehabilitation and Development Act (see p. 423). Over this period, many policies and projects were undertaken, varying widely in nature and scope but all having as their basic objective the better utilization of Canada's land and water resources as a means of providing greater security and stability for Canadian agriculture.

For the most part centred in Western Canada, this work has involved the introduction of systems of farming, land use and water supply that would provide greater economic security for the agricultural population on the prairies and, more recently, the development of larger and more comprehensive land utilization and water development schemes to serve entire agricultural districts and prairie communities. Cultural improvements have led to an almost completely new approach to the economics and practice of dry-land farming. Techniques in soil management and methods of making more efficient use of limited supplies of soil moisture have been developed and are in common use, helping materially to minimize the drought problems in certain areas. The provision of adequate farm water supplies for domestic, stockwatering and crop-growing purposes has also been of great advantage throughout the drought region; in particular, the provision, through irrigation, of assured feed supplies to carry livestock through the winter and through periodic dry periods has given much greater stability to the livestock industry and has encouraged agricultural diversification in the plains region.

Other major projects bringing about adjustments in the pattern of land use on the prairies have been the permanent removal from cultivation of lands that have proven submarginal for cereal crop production, the fencing, regrassing and other improvement of such areas for community pasture purposes, and the resettlement and rehabilitation of farmers operating such lands, principally to irrigation projects.

While such adjustments have been of considerable benefit to the agricultural economy in the prairie region, new and growing demands on Canada's land and water resources, from agricultural and urban centres alike, have made necessary an entirely new and comprehensive approach to the resource development problem. This has included the construction of larger and more extensive multi-purpose water conservation schemes to support greater urban and industrial growth and to supply water for large-scale irrigation, etc.; the implementation of appropriate alternative land-use projects to make more efficient utilization of Canada's land resources; and the introduction of new and more imaginative programs in local rural development, designed to raise the general standard of living of people within such areas. In the light of these objectives, an increasing amount of attention has been directed recently by federal agencies to this type of development.

## Prairie Farm Rehabilitation Act

The Prairie Farm Rehabilitation Act was passed by the Parliament of Canada in April 1935 to provide for the rehabilitation of drought and soil drifting areas in the Provinces of Manitoba, Saskatchewan and Alberta. An initial appropriation of $\$ 4,750,000$ was made to cover the cost of rehabilitation activities for a period of five years, and an Advisory Committee was established by the Act to give leadership to the program. The Experimental Farms of the federal Department of Agriculture played an important role. As the PFRA developed, however, a separate administration was set up in Regina in 1936 to direct water development, while the cultural improvement program continued under the direction of the Experimental Farms. Then, by amendment to the Act in 1937, PFRA was extended to include land utilization and resettlement. It was realized, however, that for the development of a sound agricultural economy on the prairies, more long-term measures for rehabilitation would be necessary. In 1939, therefore, additional financial allocations were made and the five-year limitation to the PFRA was removed.

The PFRA has completed its 28th year of operation and throughout these years a broad and varied program of rehabilitation has been conducted. A résumé of the current activities being carried out by PFRA follows.

Water Development.-Projects constructed under the water-development program under the supervision of the Water Development Services Branch are divided into two categories according to size of project, number of people benefiting, and cost of construction: (1) individual and neighbour projects and (2) community projects.

Individual and neighbour projects are works serving the needs of one or two farmers and are generally in the form of small dams and dugouts that supply water for stockwatering and domestic use and/or for irrigation purposes. PFRA provides all engineering services required to plan and design such projects and a portion of the construction costs. The rate of assistance paid on individual projects is based on yardage of earth moved and amounts to seven cents per cubic yard up to a maximum of $\$ 250$ for dugouts, $\$ 300$ for stockwatering dams and $\$ 600$ for irrigation projects. Where two or more farmers pool their water resources to build neighbour projects, assistance is paid up to a maximum of $\$ 1,000$. Responsibility for the actual construction is left to the farmer who either contracts the work out or builds the project himself. Community projects utilize the waters of well-defined watersheds and are built to serve the needs of groups of farmers. Each project is justified on the basis of its individual merit and the major share of cost is borne by PFRA.

During the 28 years in which PFRA has been engaged in this work, the program has resulted in the construction of more than 85,000 individual and neighbour projects and approximately 900 community water-storage and development schemes.

Major Projects.-While the immediate needs of farmers are being met by PFRA under the water-development program, attention has been given recently to the construction of larger irrigation and reclamation projects involving the development of many thousands of acres of land. Such undertakings are in line with the long-range land-use plan to provide for expansion and stability in Canada's growing economy. Of an estimated $3,000,000$ acres of potentially irrigable land in Western Canada, $1,500,000$ acres have been developed or are in process of being developed. The construction of these large irrigation and reclamation works, which, because of their size or their location, are undertaken by agreement between the Federal Government and the provincial government concerned, is financed through special vote of Parliament.

St. Mary Project.-To make available for irrigation a larger percentage of the water flowing through southern Alberta in the Waterton, Belly, St. Mary and Milk Rivers, a program to extend the original St. Mary Irrigation Project was undertaken jointly by the Government of Canada and the Province of Alberta. The Federal Government agreed to construct the main supply reservoirs and the connecting canals and the Province of Alberta agreed to construct the irrigation distribution system. Construction of the St. Mary dam, key structure on the whole project, was finished in 1951. In 1958, the second phase, involving the diversion of the Belly River into the St. Mary Reservoir, was completed. The third step, involving the diversion of the Waterton River into the St. Mary Reservoir by way of the Belly River diversion, is under construction. The present storage and distribution facilities extend irrigation to 296,000 acres of land in the St. Mary Project. With the addition of resources of the Waterton River, a further 214,000 acres will be brought under irrigation, making a total of 510,000 acres.

Bow River Project.-The Bow River Irrigation Project, situated west of Medicine Hat in Alberta and having an irrigation potential of 240,000 acres, was taken over by the Federal Government from the Canada Land and Irrigation Company in 1951; the Company had developed about 57,000 acres before financial difficulties caused suspension of work. PFRA commenced the orderly rehabilitation of the project works and is proceeding with the development of the remainder of the area. The Federal Government is responsible for settlement of the areas surrounding Vauxhall and Hays where farms have been provided for 436 settlers; 152 have now been established in the Hays district.

South Saskatchewan River Development Project.-In July 1958 agreement was reached between the Federal Government and the Province of Saskatchewan to start construction
on the South Saskatchewan River Development Project, a large-scale multi-purpose water conservation development in south-central Saskatchewan being undertaken for the purpose of making better use of the water resources of the river through irrigation, river control, power development, urban water supply and recreation facilities. Control will be achieved by two dams, the major one on the South Saskatchewan River at a point approximately half-way between the towns of Outlook and Elbow and the other at the divide between the valleys of the South Saskatchewan and the Qu'Appelle Rivers. The two governments will share the cost of building the dams and all other works associated with the creation of the reservoir; 75 p.c. will be borne by the Federal Government and 25 p.c. by Saskatchewan, the provincial share being not more than $\$ 25,000,000$.

The completed project will provide water for the irrigation of about 500,000 acres of land in central Saskatchewan on both sides of the South Saskatchewan River between the town of Elbow and the city of Saskatoon, and in the Qu'Appelle Valley extending east of Elbow to the Manitoba border. Power installations at the damsite will have a potential output of $475,000 \mathrm{kwh}$. The reservoir- 140 miles long with a capacity of $8,000,000$ acre-feet of water-will be constructed at an estimated cost of $\$ 96,000,000$. The main dam-210 feet high and of earth fill with an over-all length of 16,700 feet-will be the largest rolled-earth dam to be built in Canada and one of the largest of its kind in the world.

Construction started in the autumn of 1958 and by July 31, 1963, 34 contracts, with a total value of $\$ 68,000,000$, had been awarded. Of these, 28 were completed and total expenditures, including progress payments on contracts currently active, amounted to approximately $\$ 54,000,000$. The latest activities have been associated mainly with the construction of the five river diversion tunnels and appurtenant works. In addition to paying 75 p.c. of the cost of construction of the dam, the Federal Government is supplying all engineering, administration and supervisory requirements.

Saskatchewan River Reclamation Project.-The possibility of successfully reclaiming for agricultural purposes $1,500,000$ acres of Saskatchewan River Delta land between Tobin Rapids in Saskatchewan and Cedar Lake in Manitoba has long been under consideration. As a result of an agreement made in early 1953 between the Government of Canada and the Manitoba Government, work was begun on the construction of flood control and drainage works to reclaim about 100,000 acres in one region of the project referred to as the Pasquia Area, near The Pas. The Federal Government assumed the cost of building the main protective and drainage works and the provincial government assumed the cost of settlement, maintenance of works and internal drainage. One quarter of the reclaimed land will be used for the resettlement of farmers from drought areas and the remainder sold, with 75 p.c. of the proceeds going to the Federal Government as partial reimbursement of expenditure on the project. Construction was completed in 1960 and the project has been officially transferred to the Province of Manitoba for internal development and settlement.

Northwest Escarpment and Interlake Reclamation Project.-Under the terms of an agreement between the Governments of Canada and Manitoba, mutually acceptable projects for flood control and land reclamation within the Northwest Escarpment and Interlake regions of Manitoba may be undertaken on a cost-sharing basis, with PFRA providing engineering services as required. Initially, projects under this agreement included extensive investigations and reclamation work in the Riding, Duck and Porcupine Mountain areas and Whitemud River watershed, where flooding and erosion seriously affected 252,000 acres of valuable agricultural land. The reclamation work consisted of clearing and dyking stream channels, preventing stream-bank erosion and aligning channels by building cutoffs and diversions. Since 1958, work in this area has been confined mainly to watershed investigations on the headwaters of Wilson Creek. In the Interlake region, reclamation has been concerned with projects on the Fairford and Icelandic Rivers, which have been completed.

Assiniboine River Project.-Along the Assiniboine River between Portage la Prairie and Headingly in Manitoba, the problem of flooding has faced farmers and communities over the years, often resulting in considerable damage to land, buildings and other property. Responsibility for flood protection work carried out in the area by the federal Department of Public Works was, in 1950, transferred to the Canada Department of Agriculture under PFRA and activities have, since then, involved mainly construction of dykes and channel improvement. However, as a result of recent surveys, an agreement was signed between the Federal and Manitoba Governments during 1962 for the construction of a major flood control and water conservation dam on the Assiniboine River near its confluence with the Shell River. This dam will be 75 feet high and will create a reservoir 40 miles long with a storage capacity of 430,000 acre-feet of water.

Buffalo Pound Water Supply Project.-Buffalo Pound Lake in Saskatchewan was developed to supply water for agricultural purposes downstream in the Qu'Appelle Valley and also to supply urban water for the cities of Regina and Moose Jaw. Local water supplies in the Lake, however, are not always adequate to meet these needs and must be supplemented with water drawn from the South Saskatchewan River. For this purpose, the Government of Canada constructed a pumping system on the river near Elbow to raise water over a height of land into the Qu'Appelle Valley where it may be carried through a series of canals and improved river channel to Buffalo Pound Lake, a distance of 55 miles. Construction of these works was completed in 1960 and more than 50,000 acre-feet of water have been delivered to the reservoir since pumping operations commenced.

British Columbia Projects.-The PFRA has been carrying out irrigation development and land reclamation and providing engineering services in British Columbia since 1944; this work has been undertaken for and in connection with the Veterans' Land Act, the Experimental Farms Service, and at the request of the Province of British Columbia.

Nine irrigation projects have been developed or rehabilitated in the arid central interior of the province. The irrigable land on these projects totals approximately 5,300 acres and provides direct or supplemental living for some 1,400 families engaged mainly in the growing of small fruits and vegetables and in dairying. Seven of the projects were constructed for the Veterans' Land Act following the Second World War and benefit approximately 500 veterans. The Johnson Western Canada Ranching Projects, Nos. 1 and 2 (Todd Hill Irrigation District), and the Chase Irrigation Project are located in the South Thompson Valley. The Cawston Benches Project, Westbank Project, Penticton West Bench Project and Bankhead Project are all located in the southern Okanagan Valley and form some of the largest individual developments for veteran settlement in Canada.

The other two developments are located in the Thompson Valley near Kamloops and were constructed in co-operation with the Province of British Columbia. The B.C. Fruitlands Irrigation District includes some 2,000 acres of irrigable land and also about 700 small holdings. This district had been served by a gravity water system from Jamieson Creek for over 40 years but the system deteriorated to such an extent that the district could no longer guarantee water to its users. Rehabilitation of the project was undertaken by agreement with the province and the irrigation district concerned, and completed by PFRA in 1958. A pressure irrigation system was also installed by PFRA for the irrigation of 290 acres of the Provincial Sanatorium farm lands at Tranquille.

A major reclamation project was undertaken in the Lillooet Valley upon agreement between the Federal Government, the Government of British Columbia, and the Pemberton Valley Dyking District. This involved the reclamation of the lower 20 miles of the Lillooet River Valley through dyking, drainage and channel improvement to reclaim some 12,000 acres of agricultural land and to protect an additional 2,000 acres already under cultivation.

Engineering services have been provided by PFRA to the Experimental Farms and to other government agencies as requested. Some of these services have included surveys in the Fraser River Basin for the federal-provincial Fraser River Board, reports on proposed
project development and reclamation in British Columbia, and services to the Experimental Farms for the establishment and improvement of farm water supplies and irrigation systems.

Land Utilization and Resettlement.-The 1937 amendment to the Prairie Farm Rehabilitation Act broadened its scope to include land utilization and land settlement, opening the way for a program that has had a far-reaching effect on the stability of agricultural production in many areas throughout Western Canada. By agreement with the Provinces of Saskatchewan and Manitoba, lands not considered suitable for cereal crop production may be transferred to the Federal Government for development by PFRA into community pastures. The province concerned selects the area to be developed and obtains control of the land. The land is then leased to the Government of Canada which in turn agrees to construct, maintain and improve community pasture facilities in the area selected. In this way, land subject to the hazards of soil drifting is removed permanently from cultivation and is again protected by grass cover.

As these submarginal and marginal lands are converted into productive pastures, livestock production on the surrounding farms is being increased, thus making possible a greater diversity of farm income. Since the community pasture program began in 1937, approximately $2,092,754$ acres of land have been developed into 72 separate pasture units. These pastures, intended primarily for reserve grazing areas to supplement farm and ranch pastures, are providing controlled spring, summer and fall grazing for over 140,000 head of stock annually, belonging to approximately 7,000 farmers and ranchers. In addition, a considerable tonnage of hay and some grass seed have been harvested from these pastures. This program of pasture improvement carried on by PFRA has provided leadership to farmers in the development of their own farm pastures.

The resettlement of farmers from these submarginal areas has been handled jointly by the Federal Government and provincial governments concerned. Where available, the provincial governments provide suitable Crown land on which to resettle farmers. PFRA in turn accepts responsibility for moving the farmers and their effects to the new locations, and for developing the submarginal areas for pasture purposes. Every effort has been made to resettle farmers on lands located close to existing or proposed pastures. Where no suitable Crown lands are available, PFRA provides its own through irrigation development. Two such schemes have been built specifically for resettlement purposes in Alberta: a large block of land adjacent to the Eastern Irrigation District called the Rolling Hills Project, to which 118 farm families have been moved from drought areas; and the Bow River Irrigation Project where 152 farm families are settled in an area of approximately 27,000 acres called the Hays District.

On somewhat the same principle, six resettlement and rehabilitation projects have been built in the heart of the drought area in southwestern Saskatchewan. The only difference is that for these projects the purposes and objectives of the resettlement and rehabilitation program have been achieved without necessarily involving the movement of farmers to new locations. The six schemes-the Val Marie, West Val Marie, Eastend, Consul, Maple Creek and Swift Current Irrigation Projects-are subdivided into 40-to-80acre plots which are leased out or sold to farmers in surrounding districts for feed production. On the irrigated land, farmers can be assured of producing adequate and dependable winter feed supplies as well as reserves of feed to carry stock over prolonged drought periods.

In a similar manner, hundreds of farmers have been rehabilitated without the necessity of moving from their farms by the development of farm-size and small community irrigation schemes built throughout the prairies with PFRA assistance.

## Maritime Marshland Rehabilitation Act

The MMRA program was instituted by federal legislation in 1948 to provide assistance to the Provinces of Nova Scotia, New Brunswick and Prince Edward Island in preserving and developing tidal marshland areas, most of which are situated adjacent to
tributaries of the Bay of Fundy. The areas are subject to flooding by tide water unless protected by systems of dams or dykes and aboiteaux (freshwater-control structures). The soils are potentially productive and when properly used yield excellent crops.

Responsibility for the rehabilitation of approved marshland areas is shared by the provincial and federal governments. The latter undertakes the construction of works required to prevent flooding of lands by saltwater, maintains the structures until this responsibility is turned over to the provinces, and provides engineering services required in connection with the program. The provincial governments organize the owners of land and ensure that the marshland areas are adequately drained and that suitable land-use policies are developed and encouraged.

By Mar. 31, 1962, the provinces had requested the protection of some 96,000 acres from saltwater flooding. Structures had been completed to protect 81,265 acres (Nova Scotia 44,054 acres, New Brunswick 36,936 acres, and Prince Edward Island 275 acres). This acreage forms parts of approximately 3,500 farms having a total area of over 450,000 acres. Protection of most of the unprotected acreage is being postponed, or is undecided, either because of the high cost of the required works, or until a more economic use of the land is found.

Conventional structures for the protection of marshlands are normally considered to be dykes and aboiteaux, supplemented by stream-bank control works. It has been found feasible to construct aboiteaux or dams across some tidal streams which eliminate the need for dykes and aboiteaux upstream of the proposed site and permit more efficient drainage of the land protected. Two of the more important structures of this type are the Annapolis River Dam in Nova Scotia and the Tantramar River Dam in New Brunswick, both in full operation. Each was undertaken on a share basis with a provincial authority, as they serve as river crossings for traffic and eliminate the need to rebuild highway bridges at these locations in the future. The structures consist of rock-fill dams and freshwater discharge control gates; they were constructed on tidal rivers having tide ranges in excess of 30 feet and 40 feet, respectively. The addition of power-generating facilities to harness some of the energy produced by the tide at Annapolis Royal, N.S., was studied and found possible, but the cost was too high to warrant further consideration.

## Canada Water Conservation Assistance Act*

To help municipal and provincial governments with financing major water conservation and control projects, the Canada Water Conservation Assistance Act was passed by Parliament in 1953. Under the Act, the Federal Government may enter into an agreement with any province matching the provincial contribution up to a maximum of 37.5 p.c. of the cost of a major water conservation project that is considered to be beyond the normal financial means of the provincial and municipal governments involved.

The Federal Government has signed three agreements with the Government of Ontario providing federal financial participation in three major water conservation projects. In each project, the estimated cost is to be distributed among the federal and provincial governments and a conservation authority, the two governments each contributing 37.5 p.c. of the cost and the conservation authority the remaining 25 p.c.

The first agreement under the Act was signed Jan. 28, 1961, providing federal assistance to a $\$ 9,640,500$ flood control and water conservation project in the Upper Thames

[^119]River basin. The Upper Thames River Conservation Authority, a grouping of 31 municipalities, will pay 25 p.c. of the cost of construction of five dams and three channel improvement works included in the project and will administer the completed project. Construction of the works is to be completed within ten years of the date of signing.

Other agreements signed between Canada and Ontario provided for federal costsharing in the construction of the $\$ 825,000$ Parkhill Dam Project in the Ausable River watershed in western Ontario and the $\$ 24,000,000$ flood control and water conservation works that will be built along the Humber and Don Rivers in the Metropolitan Toronto area. The conservation authorities involved in these projects are, respectively, the Ausable River Conservation Authority and the Metropolitan Toronto and Region Conservation Authority. Prior to the passing of this legislation, the Federal Government provided 37.5 p.c. of the cost of building the Shand and Luther Marsh Dams on the Grand River, the Conestogo Dam on the Conestogo River, and the Fanshawe Dam on the Thames River.

To be eligible for federal assistance under the Canada Water Conservation Assistance Act, a project must meet three conditions. The works must be designed primarily for flood control or other beneficial uses. It must be major in character in relation to the financial capability of the province entering into the agreement. It also must be beneficial to a community as a whole. The Act requires that complementary conservation measures be carried out in addition to the primary flood control and water conservation works.

## Subsection 2.-Provincial Projects

Saskatchewan.*-The Conservation and Development Branch of the Saskatchewan Department of Agriculture was established in 1949 to administer water rights in the province and to carry on an active program in irrigation, drainage, flood control and land reclamation and development. Program emphasis has varied from year to year; drainage and flood control were of greatest importance during most of the 1950's but, because of the drier weather during the past four years, irrigation and community pasture development have taken precedence. The following is a summary of Branch activities to Mar. 31, 1962.

Water Rights.-Surface and ground water resources of the province are administered by the Water Rights Division of the Branch. At Mar. 31, 1962, 6,678 projects were licensed and 1,615 authorized under the Water Rights Act, involving total storage of 461,017 acre-feet; three hydro-electric developments were licensed and two other licences had been applied for under the Water Power Act; 180 water-well drillers were licensed and 2,529 wells were reported drilled under the Ground Water Conservation Act.

Irrigation Development.-Up to the end of March 1962, 54 irrigation projects had been initiated on which topographic surveys had been conducted on 467,114 acres (approximately one half on the South Saskatchewan River). In addition, 368 miles of ditch had been constructed and 1,950 water-control structures built. Forty-six Water Users' Districts had been organized comprising some 209,443 acres.

Drainage and Flood Control.-By the end of March 1962, some work had been done on 461 drainage and floud-control projects. Topographic surveys had been carried out on 200,027 acres, some 707 miles of ditch dug, and 1,038 control structures built. A total of $7,500,000$ acres have been organized into 69 conservation areas.

[^120]Land Development and Pasture Construction.-A total of 159 land-development and community pasture projects had been worked on up to the end of March 1962. Some 85,626 acres of forage had been seeded and 1,263 miles of fence constructed. Approximately 715,460 trees had been planted under the afforestation program.

Community Pastures.-Through the Lands Branch of the provincial Department of Agriculture, the province had transferred title to $1,196,963$ acres and had leased without charge another 374,319 acres of land to PFRA for community pastures. Outside the PFRA program, the province at Mar. 31, 1962 had another 921,884 acres in 138 community pastures operated by co-operative associations, by municipalities or by the provincial Department of Agriculture; during 1962, 26 pastures operated by the province provided grazing for 28,461 head of cattle owned by 1,876 local farmers.

Development of Land for Cultivation.-Crown lands, either under cultivation or suitable for cultivation, are leased for 33 -year periods. The province may reimburse farmers in cash for the cost of clearing and breaking virgin land or the farmers may retain crop shares equivalent in value to costs sustained. To Mar. 31, 1962, the investment of the province for land clearing and breaking amounted to $\$ 9,490,230$, and included work done in six settlement projects involving initial clearing and breaking on about 200 farm units before the land was leased.

Alberta.*-The Alberta Water Resources Act gives the Minister of the Department of Agriculture wide powers to investigate the water resources of the province and extensive surveys have been carried out to determine the distribution and extent of the available water supply in the province and the most beneficial use for irrigation, water power and other purposes. The Water Resources Branch of the provincial Department of Agriculture administers the licensing of water power projects and the construction work in several irrigation projects. Irrigation projects are also licensed and water allocated for domestic and irrigation purposes. Other work includes administration of drainage districts and cooperation on the Peace River dug-out project and on river protection projects where flooding occurs. In more recent years much of this work has been carried out by the Federal Government in co-operation with the Government of Alberta.

Stream measurement is being done by the Hydrometric Service of the federal Department of Northern Affairs and National Resources, and irrigation surveys are carried out largely by the water development organization under PFRA (see pp. 433-434).

The figures given in Table 4 of land actually irrigated in Alberta in 1961 are only approximate because, while there are increases resulting from the creation of new pump irrigated areas, there are also decreases caused by soil reclassification and less water use, depending on natural precipitation. Seepage and alkali problems also have an effect on acreage quoted as irrigable. Figures for small private irrigation projects have been omitted because of their uncertain water supply.

Gross cash returns from the irrigable area are estimated at $\$ 30,000,000$, although this figure does not take into account the value of stockwater supplied through irrigation works. Nor does it include many other credit items that are difficult to evaluate such as the recreational use of water which, to these once semi-arid areas, is particularly important, and the value of fish taken from irrigation reservoirs which is known to be quite significant. Several communities receive their entire domestic water supply via irrigation canals.

[^121]
## 4.-Major Irrigation Districts in Alberta, 1961

| District | $\begin{gathered} \text { Classified } \\ \text { Irrigable } \\ \text { Area } \end{gathered}$ | Area Actually Irrigated in 1961 |
| :---: | :---: | :---: |
|  | acres | acres |
| St. Mary and Milk Rivers Development. | 259,861 | 157,300 |
| Magrath Irrigation District.. | 7,885 | 5,000 |
| Raymond Irrigation District. | 19,058 | 13,000 |
| Taber Irrigation District. | 32,100 | 30,747 |
| Western Irrigation District. | 50,000 | 13,000 |
| Eastern Irrigation District. | 250,000 | 189,421 |
| Bow River Development- |  |  |
| Federal... | 94,783 | 71,140 |
| Provincial. | 35,217 | 9,463 |
| Mountain View Irrigation District | 3,600 | 2,759 |
| Leavitt Irrigation District. | 4,631 | 1,542 |
| Aetna Irrigation District. . | 8,303 | 1,800 |
| United Irrigation District. | 34,005 | 23,095 |
| Lethbridge Northern Irrigation District | 96,135 | 73,637 |
| Ross Creek Irrigation District. | 2,069 | 200 |
| Macleod Irrigation District. | 3,000 | - |
| Totals | 900,647 | 592,104 |

British Columbia.-About 20 p.c. of the arable land in British Columbia is under cultivation, and nearly all of the grazing area is being utilized. The $1,300,000$ acres of improved land give a ratio of approximately one acre per person. Within this arable area there exists an estimated 220,000 acres of irrigated land, and the total additional acreage of irrigable land in British Columbia is estimated at 400,000 acres. About three quarters of the irrigated area is made up of individual projects and the remainder is served by the larger irrigation projects listed in Table 5.

## 5.-Major Irrigation Projects in British Columbia, 1963

| Project | Water Supply | Potential Irrigable Area | Irrigated Area | Water Service Charge on Grade A Land | Locality |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Okanagan River............ | acres | acres | $\stackrel{\$}{\text { per acre }}$ |  |
| Provincial Irrigation <br> System <br> Southern Okanagan Lands <br> Project. |  |  |  |  |  |
|  |  | 7,770 | 4,770 | 12.50 | Okanagan Valley |
| Municipal Irrigation SystemsPenticton Municipality Summerland Municipality. |  |  |  |  |  |
|  | Penticton and Ellis Creeks.. Trout and Eneas Creeks..... | 2,067 3,439 | 1,967 3,396 | $\begin{gathered} 24.00 / 20.00 \\ 14.85 \end{gathered}$ | Okanagan Valley |
| Irrigation Districts- |  |  |  |  |  |
| Barriere... | Mission Creeks Barriere River | 90 181 | 89 129 | 24.50 4.50 | Okanagan Valley <br> North Thompson Valley |
| B.C. Fruitlands. | Jameson and North |  |  |  |  |
| Black Mountain | Thompson Rivers......... | 2,200 | 1,660 | 16.20 | " |
|  |  | 4,264 | 3,693 | 15.00 | Okanagan Valley |
| Black Sage................. | Okanagan River.............. | 184 | 174 | 17.00 |  |
| Blueberry Creek | Okanagan River............. | 132 | 66 | 15.00 | Columbia Valley |
| Brend Davy Lis... | Blueberry Creek <br> Osoyoos Lake. <br> Mission Creek | 94 469 | 94 416 | 15.93 | Okanagan Valley |
| Cawston. | Mission Creek ${ }_{\text {M }}$ Similkameen River............. | 400 | 375 | 14.00 |  |
| Chase | Chase Creek.................. | 639 | 639 | 2.50 | South Thompson |
| Covert.................... | 4th of July and Gibbs |  |  |  | Valley |
| East Creston............. |  | 280 | 280 | 8.00 | Kettle Valley |
|  | Arrow Creek <br> Haynes Creek and Osoyoos Lake. | 1,415 | 1,220 | 5.00 | Kootenay Valley |
|  |  | 174 | 170 | 36.00 |  |
| Ellison <br> Erickson | Kelowna Creek <br> Sullivan Creek | 760 | 662 | 6.95 |  |
|  |  | 95 | 95 | 5.00 | Kootenay Valley |

## 5.-Major Irrigation Projects in British Columbia, 1963-concluded

| Project | Water Supply | Potential Irrigable Area | Irrigated Area | Water Service Charge on Grade A Land | Locality |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | acres | acres | per acre |  |
| Irrigation Districts-concl. |  |  |  |  |  |
| Fairview Heights. . . . . . . | Similkameen River | 627 | 627 | 28.00 | Similkameen Valley |
| Glenmore. . . . . | Kelowna Creek and |  |  |  |  |
|  | Okanagan Lake... | 1,987 | 1,987 | 13.00 | Okanagan Valley |
| Grand Forks | Kettle River. | 2,500 | 2,328 | 6.00 | Kettle Valley |
| Heffley . . . . . . . . . . . . . . . . . | North Thompson River. . . | 1,653 | 1,653 | 2.64 | North Thompson Valley |
| Kaleden..................... . | Marron River, Shatford and Shingle Creeks | 542 | 542 | 18.00 | Okanagan Valley |
| Keremeos | Ashnola and Similkameen |  |  |  | Okanagan Valley |
|  | Rivers | 1,033 | 1,033 | 18.00 | Similkameen Valley |
| Lakeview. | Lambly Creek. . . . . . . . . . . . | 1,070 | 1,070 | 12.00 | Okanagan Valley |
| Malcolm Horie............ . | Joseph Creek. . . . . . . . . . . . . | 150 | 150 | 7.50 | Kootenay Valley |
| Naramata.................. | Naramata, Lequime and Robinson Creeks. | 1,087 | 973 | 24.75 | Okanagan Valley |
| North Canyon | Camp Run Creek............ | 1,433 | 394 | 1.50 | Kootenay Valley |
| Okanagan Falls. | Okanagan River............. | 233 | 230 | 11.00/30.00 | Okanagan Valley |
| Okanagan Mission. . . . . . . . | Bellevue Creek, Okanagan Lake. | 534 | 534 | 21.00 | " |
| Osoyoos..................... | Haynes, Long Joe, Nine Mile Creeks and Osoyoos Lake. | 243 | 243 | 25.00 | " |
| Oyama | Wood and Kalamalka Lakes | 362 | 362 | 22.00 | " |
| Peachland | Peachland Creek. | 550 | 444 | 13.00 | " |
| Renata. | Dog Creek | 122 | 122 | 7.00 | Columbia Valley |
| Robson | Norns Creek. | 262 | 250 | 6.00 |  |
| Scotty Creek............... | Scotty Creek.... . . . . . . . . . . | 844 | 823 | 4.50 | Okanagan Valley |
| Shuttleworth Creek....... | Shuttleworth Creek........ | 282 | 109 | 8.00 | O6 |
| Southeast Kelowna | Hydraulic and Klo Creeks.. | 3,459 | 3,459 | 16.00 | " |
| South Vernon | Vernon Creek. | 354 | 273 | 5.00 | " |
| Todd Hill.................. | South Thompson River..... | 145 | 118 | 15.00 | South Thompson Valley |
| Trout Creek | Trout Creek | 318 | 278 | 10.00 | Okanagan Valley |
| Vermilion. | Kindersley Creek............ | 300 | 300 | 6.25 | Columbia Valley |
| Vernon. | Coldstream Creek | 7,969 | 6,668 | 5.00 | Okanagan Valley |
| Vinsulla..................... | Knouff Creek.. | 298 | 175 | - | North Thompson Valley |
| Westbank | Powers Creek . . . . . . . . . . . . | 1,000 | 818 | 15.30 | Okanagan Valley |
| West Benc | Okanagan River. . . . . . . . . . . | 265 | 210 | 45.00 |  |
| Westside. | Goldie Creek.............. | 120 | 90 | 12.00 | Columbia Valley |
| Wilmer.................. | Wilmer and Bruce Creeks... | 241 | 109 | 6.00 |  |
| Winfield and Okanagan Centre | Vernon Creek | 1,889 | 1,827 | 6.00 | Okanagan Valley |
| Wyndel..................... | Duck Creek. | 507 | 507 | 4.00 | Kootenay Valley |
| Irrigation Companies- |  |  |  |  |  |
| wood Lake Water Company. $\qquad$ | Oyama Creek. . . . . . . . . . . . | 832 | 832 | 7.50 | Okanagan Valley |

## Section 4.-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 and through partial-coverage surveys. Results of the 1961 Census are summarized in Section 5 of this Chapter and are available in greater detail in Census publications issued by the Bureau. $\dagger$ A list of such publications is available on request.

The Bureau also 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,

[^122]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 federal Department of Agriculture and various provincial departments, as well as such agencies as the Board of Grain Commissioners and the Canadian Wheat Board, co-operate with the Bureau. 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, commercial production of most agricultural products being quite small. In the following Subsections details are given for 1962; figures are subject to revision.

Economic Activity in 1962 Related to Agriculture.-The continued upward trend in Canadian economic activity during 1962 is reflected in the gross national product which rose to $\$ 40,401,000,000,8$ p.c. higher than in 1961 . This expansion represented the largest year-to-year gain since 1956 when the economy was stimulated by an exceptionally high level of capital expenditure. Price increases were moderate in 1962; they accounted for less than 2 p.c. of the increase in gross national product, leaving a gain in volume of a little more than 6 p.c.

All the main components of gross national expenditure contributed to the increase in the aggregate. Consumer spending, which rose more than 5 p.c., was a major expansionary influence. Investment in fixed capital resumed its upward course with the bulk of the increased outlays being for machinery and equipment. With a near record crop in 1962, in contrast to a poor crop in 1961, there was a considerable accumulation of farm grain inventories in place of the liquidation of a year earlier. An increase in exports of nearly 8 p.c. reflected, in part, the lower exchange value of the Canadian dollar; imports also rose but not to the same extent. Government expenditure was up substantially, largely as a result of outlays at the provincial municipal level.

The salient developments on the income side were a 7-p.c. rise in labour income, an 11-p.c. increase in corporate profits and a sharp expansion in farm income largely as a result of the near record crop. Personal income rose at about the same rate as national income.

It is estimated that, for the year 1962, realized net income of farmers from farming operations, which includes inventory changes, amounted to $\$ 1,453,000,000,9.7$ p.c. above the estimate of $\$ 1,324,600,000$ for 1961 and 12 p.c. higher than the average of $\$ 1,297,100,000$ for the five-year period 1957-61. Total farm net income, which takes into account changes in inventories of grains and livestock, amounted to $\$ 1,630,300,000$. This is in contrast with the estimate of $\$ 1,044,000,000$ for 1961 and the average of $\$ 1,195,900,000$ for the 1957-61 period.

## Subsection 1.-Cash Income from the Sale of Farm Products, 1962

During 1962, cash income to Canadian farmers from farming operations reached an all-time high of $\$ 3,149,400,000$, an amount 6.6 p.c. above the previous record of $\$ 2,954,000,000$ established a year earlier and 13.4 p.c. above the 1960 estimate of $\$ 2,776,700,000$. These estimates include cash income 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, and deficiency payments made under the provisions of the Agricultural Stabilization Act.

The more important contributions to the gain in 1962 were made by increased returns from the deliveries of wheat, oats, cattle, calves, hogs and poultry products, larger participation payments on previous years' grain crops, and increased net advances on farmstored grains in Western Canada. Lesser contributions were made by rye, vegetables and dairy products and the main items for which income was lower were barley, rapeseed and tobacco. All provinces shared in the increase. On a percentage basis, the provincial gains amounted to: less than 1 p.c. for Nova Scotia; nearly 2 p.c. for New Brunswick; between 4 p.c. and 5 p.c. for Prince Edward Island, Quebec, Ontario, Manitoba and Alberta; 10 p.c. for British Columbia; and 14 p.c. for Saskatchewan.

In addition to cash income from farming operations, farmers received, during 1962, $\$ 70,300,000$ in the form of supplementary payments paid out under the provisions of the Prairie Farm Assistance Act and the Western Grain Producers' Acreage Payment Plan. This compared with approximately $\$ 35,800,000$ paid out under these legislative measures in 1961, most of it under the Prairie Farm Assistance Act. Thus, total farmers' income from farming operations and supplementary payments amounted to $\$ 3,219,700,000$ for 1962 compared with $\$ 2,989,700,000$ for 1961 , an increase of 7.7 p.c. over the latter year and an all-time high.

Field Crops.-Cash income to farmers from field crops, including Canadian Wheat Board payments and cash advances on farm-stored grain, amounted to $\$ 1,229,900,000$ in $1962,10.7$ p.c. above the $\$ 1,110,700,000$ estimated for 1961 , and accounted for 39.1 p.c. of the total farm cash income for the year, excluding supplementary payments. The gain in 1962 reflected higher income from sales of wheat and oats, larger participation payments on previous years' grain crops, and increased net advances on farm-stored grains in Western Canada.

During 1962, the Canadian Wheat Board paid out $\$ 181,100,000$ in participation payments on previous years' grains, 36 p.c. more than in the previous year. These payments arise out of the system of grain marketings in Western Canada whereby farmers, at the time of delivery, are given initial payments and certificates stating the quantities and grades delivered. The certificates entitle farmers to share any surpluses accumulated by the Board through subsequent sales of these grains and the farmers' share of these accumulated surpluses represents the Canadian Wheat Board payments included in estimates of farm income.

Marketings of wheat for the first nine months of 1962 lagged behind those for the first nine months of a year earlier as a result of the small 1961 crop. However, the large crop of 1962 and the availability of elevator space permitted farmers to deliver sufficient grain during the last quarter of 1962 to offset the earlier reduction in marketings and provide a total delivery figure for the year slightly above that for 1961. This, together with an increase on Mar. 1, 1962 of 10 cents per bushel in the initial delivery payment, resulted in a total income from wheat marketings of $\$ 530,800,000$, an amount 8.6 p.c. above that for 1961. An increase in oats marketings of nearly 50 p.c. during the year was reflected in cash income from this source of $\$ 35,300,000$ as against $\$ 24,700,000$ in 1961.

Another important contribution to income from field crops during 1962 was the net advances on farm-stored grains amounting to nearly $\$ 6,000,000$. This was a reverse of the situation in 1961 when repayments exceeded advances by $\$ 34,500,000$. Of those crops for which lower income was estimated in 1962, the most important were barley, rapeseed and tobacco. A substantial reduction in marketings accounted for most of the decline in cash receipts for barley and rapeseed, and reduced income from tobacco reflected very slow or entirely halted sales at Ontario auctions in the autumn.

Livestock and Animal Products.-During 1962, farmers in Canada received a record high return from the sale of livestock and animal products of an estimated $\$ 1,883,200,000$, an amount 4.2 p.c. above the previous all-time high of $\$ 1,807,800,000$ received in 1961. Income from this source represented 59.8 p.c. of the total farm cash income for the year, excluding supplementary payments.

Income in 1962 was higher for cattle, calves, hogs, and poultry and dairy products but lower for sheep and lambs. That from cattle and calves reached an all-time high of $\$ 677,900,000$, an amount 7.8 p.c. above the previous high of $\$ 628,800,000$ established in 1961. However, since marketings were practically unchanged from those of 1961, the increase in returns from this source was attributable entirely to higher prices. The increase in income from sales of hogs-from $\$ 317,700,000$ in 1961 to $\$ 329,000,000$ in 1962-resulted from increased prices and slightly higher marketings. Higher prices of poultry meat were responsible for much of the gain in income from poultry products-from $\$ 283,000,000$ to $\$ 294,800,000$ - and slight increases in both marketings and prices of dairy products brought income from this source to $\$ 538,800,000$, nearly $\$ 5,000,000$ over the 1961 level.

## 6.-Cash Income from the Sale of Farm Products, 1959-62



## 7.-Cash Income from the Sale of Farm Products, by Province, 1959-62

| Province | 1959 r | 1960 r | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$'000 |
| Prince Edward Island. | 28,307 | 29,159 | 23,857 | 25,005 |
| Nova Scotia... | 42,766 | 43,004 | 45,095 | 45,435 |
| New Brunswick | 43,759 | 50,032 | 42,227 | 42,986 |
| Quebec | 420,276 | 411,105 | 437,608 | 456, 921 |
| Mantario. | 855,542 | 869,285 | 890,065 | 931,168 |
| Saskatchewan | ${ }_{564}^{230,772}$ | 223,308 | 243,599 | 255,133 |
| Alberta....... | 564,179 481,141 | 550,375 473,257 | 600,212 534,084 | 684,725 556,927 |
| British Columbia | 124,448 | 127,198 | 137, 204 | 151,087 |
| Totals | 2,791,190 | 2,776,723 | 2,953,951 | 3,149,387 |

Net Income of Farm Operators from Farming Operations.-Two different estimates of farm net income from farming operations are prepared by the Agriculture Division. One is called realized net income and is obtained by adding together farm 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 end of the year. The latter estimate is the one used to calculate the contribution of agriculture to national income.*

It is estimated that for 1962 realized net income of farmers from farming operations amounted to $\$ 1,453,000,000$, a figure 9.7 p.c. above the estimate of $\$ 1,324,600,000$ for 1961 , and 12 p.c. higher than the average of $\$ 1,297,100,000$ for the five-year period 1957-61. The record high cash income from farm products and the substantial gain in supplementary payments in 1962 more than offset the continued rise in farm operating expenses and depreciation charges; income in kind remained practically unchanged. Increases were estimated for all provinces except Nova Scotia and New Brunswick. On a percentage basis, the provincial gains amounted to: less than 1 p.c. for Quebec; between 6 p.c. and 7 p.c. for Manitoba and Alberta; approximately 9 p.c. for Prince Edward Island and Ontario; and 18 p.c. and 19 p.c. for British Columbia and Saskatchewan, respectively.

For 1962, total farm net income was estimated at $\$ 1,630,300,000$ compared with the estimate of $\$ 1,044,000,000$ for 1961 , and an average of $\$ 1,195,900,000$ for the five-year period 1957-61. Although cash income from farm products and supplementary payments contributed substantially to the higher total farm net income in 1962, most of the gain can be attributed to a significant increase in farm-held inventories of grains in Western Canada between the beginning and the end of the year, as a result of high production. Although that part of farm net income which is represented by inventories is not readily available for spending, it forms the basis of cash advances in Western Canada and it is part of total production for which estimated total expenses were incurred during the year.

Farm cash income, the most important component of farm net income, and supplementary payments are discussed above. Income in kind, which includes the value of agricultural products consumed in homes on farms where produced and the imputed rental value of farm dwellings, was estimated at $\$ 342,600,000$ for 1962, a figure practically unchanged from that of a year earlier. Increases in the imputed rental value of farm dwellings and the value of the consumption of meat almost entirely offset the reduction in the value of other products consumed.

The value of inventory change is obtained by calculating the change in the quantity of grain and the numbers of livestock on farms between the beginning and the end of the year and valuing the differences at average annual prices. The value of inventory change at the end of 1962 was estimated at $\$ 177,300,000$ as compared with minus $\$ 280,700,000$ at the end of the previous year. The estimate for 1962 reflects an increase in the numbers of cattle and calves on farms and a significant rise in the amount of farm-stored grains resulting from the large crops harvested in that year. Although the livestock population increased between the beginning and end of 1961, the gain was far more than offset by the small 1961 crop and the resulting depletion of farm-held grain inventories.

Farm operating expenses and depreciation charges include farm business costs incurred by farmers regardless of whether they are paid for in cash or accumulated as new debt. As far as possible they exclude outlays for goods and services obtained directly from other

[^123]farmers. All subsidy payments are taken into account so that the estimates represent only the net amounts paid by farmers. During 1962 the total of these expenses and depreciation charges reached a high of $\$ 2,109,300,000,5$ p.c. above the $\$ 2,007,800,000$ estimated for 1961. With few exceptions, higher expenditures were recorded for each of the items of goods and services included in the estimates of farm operating expenses. The item for which the greatest increase in expenditure in absolute terms occurred was feed and seed; from $\$ 370,000,000$ in 1961 this outlay rose to $\$ 393,900,000$ in 1962 , largely as a result of higher prices of feed. The next most important increase in expenditure was estimated for farm rent which rose from $\$ 54,900,000$ to $\$ 78,800,000$, reflecting the substantially larger grain crops produced in Western Canada in 1962 and the consequent higher share-rent payments made in this area.

## 8.-Net Income of Farm Operators from Farming Operations, 1959-62

(Exclusive of Newfoundland)
Note.-Includes estimated rental value of farm homes, supplementary payments made under the provisions of the Prairie Farm Assistance Act, payments under the Western Grain Producers' Acreage Payment Regulations and, in 1960, payments under the federal-provincial unthreshed grain assistance policy.

| Item | 1959 r | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$'000 |
| 1. Cash income | 2,791,190 | 2,776,723 | 2,953,951 | 3,149,387 |
| 2. Income in kind | 344,464 | 351,168 | 342,702 | 342,590 |
| 3. Supplementary payments | 22,087 | 77,204 | 35,766 | 70,313 |
| 4. Realized gross income (Items $1+2+3$ ) | 3,157,741 | 3,205,095 | 3,332,419 | 3,562,290 |
| 5. Operating and depreciation charges. | 1,884,578 | 1,916,358 | 2,007,771 | 2,109,293 |
| 6. Realized net income (Items 4-5) | 1,273, 163 | 1,288,737 | 1,324,648 | 1,452,997 |
| 7. Value of inventory changes | -73,800 | 51,627 | -280,657 | 177,313 |
| 8. Total gross income (Items 4+7) | 3,083,941 | 3,256,722 | 3,051,762 | 3,739,603 |
| Totals, Net Income (Items 8-5) | 1,199,363 | 1,340,364 | 1,043,991 | 1,630,310 |

## 9.-Net Income of Farm Operators from Farming Operations, by Province, 1959-62

Nore.- Includes estimated rental value of farm homes, supplementary payments made under the provisions of the Prairie Farm Assistance Act, payments under the Western Grain Producers' Acreage Payment Regulations and, in 1960, payments under the federal-provincial unthreshed grain assistance policy.

| Province | 1959 r | 1960 r | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$'000 |
| Newfoundland. | - | - | - 0 | - |
| Prince Edward Island | 12,218 | 13,355 | 6,507 | 6,372 |
| Nova Scotia. | 14,883 | 15,041 | 13,041 | 10,893 |
| New Brunswick | 16,639 | 23,224 | 10,781 | 10,523 |
| Quebec. | 191,848 | 185, 688 | 179,073 | 179, 668 |
| Ontario.. | 316,252 | 331,792 | 332,156 | 347, 237 |
| Manitoba..... | 107,833 | 115,933 | 64,569 | 186,167 |
| Saskatchewan | 240,862 | 372,981 | 137,792 | 503,795 |
| Alberta......... | 242,781 | 229, 200 | 241,129 | 317,847 |
| British Columbia | 56,047 | 53,152 | 58,943 | 67,808 |
| Totals. | 1,199,363 | 1,340,364 | 1,043,991 | 1,630,310 |

## Subsection 2.-Volume of Agricultural Production

This Subsection presents the results of the first large-scale revision of the index of farm production since it was published in August 1949 on the time and weight base of $1935-39=100$. The construction of the new index was started in 1948 to measure the change taking place in the total annual physical production of agriculture in each of the
provinces (excluding Newfoundland) and Canada; it is intended that the revised index will continue to serve this purpose. The revisions just completed include: a change to a weight base of $1947-51=100$ and a time base of $1949=100$; the introduction of all revised data available since the establishment of the index; and an increase in the number of commodities included.

During the period 1935-62, the output of agricultural products has moved upward. Farm production during the past ten years has averaged nearly 30 p.c. above that for the base year 1949 and between 45 p.c. and 50 p.c. above the average for the pre-war period 1935-39 inclusive. The importance of the items included in the index has gradually changed. Livestock production has increased in importance until its percentage contribution to total production is now only slightly below that of grains, the long-time leading contributor. Although dairy production has increased over the years, the rate of increase has been less than that for many other important products with the result that its contribution to total production in percentage terms is less than it was during the pre-war period. Production of poultry products has risen quite significantly in recent years and this is reflected in the greater proportional contribution of these commodities to total agricultural output.

The index for 1962 is estimated at 151.4, the highest recorded for the new series; this compares with the previous high point of 141.4 reached in 1942 and the high peaks of 140.8 in 1952 and 140.3 in 1956. The record established in 1962 can be attributed to the coincidence of large grain crops in Western Canada and high-level outputs of livestock, poultry products and dairy products.

## 10.-Index Numbers of Physical Volume of Agricultural Production, by Province, 1935-62

( $1949=100$. Exclusive of Newfoundland)
Note.-For a description of the revised index, methods 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 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1935. | 58.8 | 124.8 | 71.4 | 90.4 | 86.6 | 57.9 | 86.5 | 90.7 | 65.3 | 83.3 |
| 1936 | 66.4 | 123.5 | 80.0 | 95.1 | 77.8 | 57.6 | 63.2 | 72.1 | 68.1 | 73.5 |
| 1937 | 64.7 | 131.1 | 80.2 | 98.4 | 89.5 | 93.5 | 25.3 | 85.0 | 72.2 | 74.2 |
| 1938. | 66.3 | 126.2 | 72.0 | 92.6 | 90.0 | 90.6 | 82.5 | 133.8 | 74.4 | 94.2 |
| 1939. | 68.6 | 122.8 | 76.9 | 102.7 | 94.0 | 102.5 | 137.3 | 134.7 | 78.7 | 111.2 |
| 1940. | 67.9 | 116.2 | 85.5 | 106.1 | 88.6 | 107.1 | 127.9 | 156.1 | 82.7 | 111.9 |
| 1941. | 61.7 | 104.3 | 73.4 | 90.3 | 87.4 | 102.6 | 84.1 | 104.5 | 69.6 | 89.7 |
| 1942. | 79.7 | 123.4 | 85.1 | 106.6 | 102.6 | 138.9 | 197.3 | 192.8 | 80.5 | 141.4 |
| 1943 | 67.7 | 115.9 | 100.9 | 100.5 | 77.8 | 115.6 | 99.5 | 100.4 | 79.6 | 94.0 |
| 1944. | 77.6 | 134.8 | 102.7 | 110.2 | 95.5 | 112.2 | 148.9 | 129.9 | 96.8 | 117.3 |
| 1945. | 76.9 | 96.6 | 79.7 | 86.4 | 85.6 | 91.0 | 97.8 | 99.7 | 89.2 | 91.3 |
| 1946 | 75.1 | 118.0 | 88.4 | 90.9 | 93.7 | 111.9 | 115.5 | 129.3 | 104.1 | 106.3 |
| 1947. | 80.5 | 101.4 | 90.6 | 97.5 | 90.3 | 102.8 | 101.9 | 123.5 | 94.0 | 100.5 |
| 1948. | 83.7 | 103.0 | 94.5 | 103.6 | 95.8 | 115.8 | 107.2 | 122.6 | 92.3 | 105.4 |
| 1949. | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1950. | 91.9 | 102.1 | 96.0 | 108.0 | 98.7 | 111.0 | 128.8 | 115.9 | 92.0 | 110.0 |
| 1951. | 77.2 | 97.1 | 82.1 | 110.6 | 101.6 | 112.7 | 154.6 | 148.7 | 92.9 | 121.6 |
| 1952. | 102.3 | 108.5 | 91.3 | 116.2 | 112.5 | 124.0 | 200.6 | 168.8 | 104.0 | 140.8 |
| 1953. | 102.0 | 104.2 | 92.1 | 113.3 | 105.1 | 110.0 | 174.5 | 160.4 | 108.2 | 130.1 |
| 1954. | 98.5 | 109.6 | 85.1 | 110.9 | 102.9 | 91.0 | 90.8 | 122.0 | 108.2 | 103.2 |
| 1955. | 100.3 | 114.4 | 97.4 | 124.6 | 108.3 | 103.6 | 164.0 | 146.7 | 106.5 | 127.7 |
| 1956 | 101.2 | 115.5 | 103.2 | 127.2 | 113.9 | 132.2 | 184.1 | 165.3 | 113.7 | 140.3 |
| 1957. | 107.9 | 113.9 | 98.1 | 128.0 | 118.9 | 106.8 | 119.7 | 133.3 | 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 |
| 1960. | 98.5 | 117.0 | 96.8 | 134.5 | 128.7 | 126.2 | 162.3 | 150.4 | 131.8 | 138.7 |
| 1961. | 99.2 | 122.5 | 98.1 | 143.3 | 136.8 | 87.7 | 78.2 | 149.3 | 144.7 | 121.2 |
| 1962. | 97.0 | 125.4 | 95.0 | 152.3 | 140.9 | 155.7 | 166.2 | 162.0 | 152.0 | 151.4 |

## Subsection 3.-Field Crops

A wide range of growing conditions occurred throughout Canada during the 1962 season. At planting time, soil moisture reserves were extremely low over most areas of the Prairie Provinces, with the principal exceptions of eastern Manitoba and northern Alberta where excessive rainfall delayed seeding operations and continued throughout the season. In contrast, a large area of Saskatchewan and parts of southern Alberta remained dry. However, in most areas rainfall was frequent, temperatures were below average and crop outturns better than anticipated. Many crops were slow in maturing and much unfavourable weather between mid-August and mid-September resulted in some reduction in quality but the loss caused by early frosts was small. This spell of adverse weather was followed by exceptionally favourable harvesting conditions and late crops ripened well. Most of the harvest was taken off in dry condition.

Ontario and Quebec experienced hot spring weather followed by near drought conditions but these, in turn, were followed by timely rains. With the exception of first-cut hay, most crop yields were excellent. In the Maritimes, excessive moisture during the growing and harvesting season resulted in late maturity of crops and caused much difficulty and loss at harvest time, especially of hay. In British Columbia, generally cool weather prevailed during the spring months, crops developed well and most yields were above those of the previous season.

Substantial declines in production more than offset larger opening stocks of each grain except barley, so that total estimated domestic supplies of the five major grains were 22 p.c. lower in 1961-62 than in 1960-61, amounting to $1,556,900,000$ bu. compared with $1,983,600,000$ bu. Farmers' marketings of wheat, oats, barley, rye and flaxseed amounted to $408,232,000 \mathrm{bu}$. in 1961-62, a decrease of 25 p.c. from the comparable total of $545,703,000 \mathrm{bu}$. in 1960-61. Larger clearances of wheat and increased exports of oats and rye were reflected in total shipments of the five major grains and their products in 1961-62 amounting to $420,735,000 \mathrm{bu}$. of grain equivalent, a figure relatively unchanged from both the 1960-61 total of $419,324,000 \mathrm{bu}$. and the ten-year average (1950-51-1959-60) of $422,641,000 \mathrm{bu}$.

Disappearance of these grains into domestic channels in 1961-62 was estimated at $599,166,000 \mathrm{bu}$. as against $713,691,000 \mathrm{bu}$. in 1960-61. Despite this reduction, while exports were relatively unchanged, the effect of substantially reduced domestic supplies was reflected in a $37-$ p.c. decline in carryover stocks-from 850,548,000 bu. at July 31, 1961 to $537,006,000$ bu. at the same date in 1962. During the season, however, total production of the five major grains was estimated at $1,245,000,000 \mathrm{bu}$. and, as a result, total domestic supplies for the $1962-63$ crop year were placed at $1,782,000,000$ bu., 14 p.c. higher than the 1961-62 total of $1,557,000,000 \mathrm{bu}$.

The 1962 potato crop amounted to $45,064,000 \mathrm{cwt}$. compared with $44,108,000 \mathrm{cwt}$. in 1961; a 6-p.c. decrease in acreage more than offset a record average yield per acre of 157.5 cwt. New Brunswick retained its position as the largest potato-growing province, the average yield per acre in that province reaching an all-time high of 206.0 cwt . Production of corn for grain, the bulk of which is grown in Ontario, amounted to a next-to-record $32,025,000$ bu. in 1962, both acreage and average yield per acre exceeding its 1961 level. Production of tame hay and fodder corn at $26,945,000$ tons reached an all-time high in 1962, resulting mainly from a record outturn of hay well distributed across the country. The soybean crop, all of which is grown in Ontario, amounted to $6,608,000 \mathrm{bu}$. compared with $6,631,000 \mathrm{bu}$. in the previous season, a 4-p.c. increase in seeded acreage generally offsetting a 4-p.c. decline in the average yield per acre. Rapeseed production, primarily reflecting a $43-$ p.c. decline in acreage, dropped from the record 1961 level of $561,000,000 \mathrm{lb}$. to $318,000,000 \mathrm{lb}$. in 1962.

## 11.-Acreages, Yields and Prices of Principal Field Crops 1960-6?, with Average for 1955-59

(Exclusive of Newfoundland)

| Crop and Year | Area | Yield per Acre | $\begin{aligned} & \text { Pro- } \\ & \text { duction } \end{aligned}$ | Average Price | Total <br> Value ${ }^{1}$ | Crop and Year | Area | Yield per Acre | Production | Average Price | Total <br> Value ${ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { '000 } \\ \text { acres } \end{gathered}$ | bu. | $\begin{aligned} & \text { '000 } \\ & \text { bu. } \end{aligned}$ | \$ per bu. | \$'000 |  | $\begin{gathered} \text { '000 } \\ \text { acres } \end{gathered}$ | bu. | '000 <br> bu. | \$ per bu. | \$'000 |
| Wheat- |  |  |  |  |  | Mixed Grains- |  |  |  |  |  |
| Av. 1955-59. | 22.730 | 20.5 | 465,618 | 1.31 | 608, 018 | Av. 1955-59. | 1.513 | 42.6 | 64,427 | 0.81 | 52,374 |
| 1960. | 24,538 | 21.1 | 518,379 | 1.57 | 812,838 | 1960 | 1,366 | 43.1 | 58,935 | 0.83 | 48,930 |
| 1961 | 25,316 | 11.2 | 283,394 | 1.72 | 485, 324 | 1961. | 1,556 | 39.2 | 61,310 | 0.89 | 54,775 |
| 1962. | 26,893 | 20.7 | 557,554 | 2 | , 2 | 1962 | 1,522 | 47.4 | 72.186 |  | , 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 |
| 1960 | 9,620 | 41.4 | 398,505 | 0.68 | 269,885 | 1960. | 2,508 | 9.0 | 22,477 | 2.75 | 61, 871 |
| 1961 | 8,543 | 33.2 | 283,965 | 0.75 | 212,795 | 1961 | 2,075 | 6.9 | 14,318 | 3.33 | 47,612 |
| 1952 | 10,591 | 46.6 | 493,610 |  |  | 1962 | 1,415 | 11.1 | 15,685 | 2 |  |
| Barley- |  |  |  |  |  | Potatoes- |  | cwt. | '000 cwt. 40,297 | \$ per cwt. |  |
| 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 |
| 1960 | 6,857 | 28.2 | 193,473 | 0.80 | 155,161 | $1960 \ldots . .$ | 292 | 146.4 | 42,696 | 1.99 | 85, 023 |
| 1961. | 5,529 | 20.4 | 112,640 | 1.05 | 118,810 | 1961........ | 306 | 144.3 | 44,108 | 1.40 | 61,933 |
| 1962. | 5,287 | 31.4 | 165,888 | 2 | 2 | 1962. . . . . . | 286 | 157.5 | 45,064 | 2 | 2 |
| Rye- |  |  |  |  |  | Tame Hay- |  | ton | '000 tons | \$ per ton |  |
| Av. 1955-59. | 577 | 16.2 | 9,362 | 0.92 | 8,568 | Av. 1955-59. | 11,291 | 1.72 | 19,412 | 15.30 | 296,922 |
| 1960. | 561 | 18.2 | 10,221 | 0.87 | 8,846 | 1960 | 12,106 | 1.78 | 21,595 | 14.76 | 318.695 |
| 1961. | 561 | 11.6 | 6,519 | 1.07 | 6,983 | 1961 | 12,229 | 1.70 | 20,812 | 15.63 | 325,327 |
| 1962....... | 668 | 18.9 | 12,644 | 2 | 2 | 1962 | 12,370 | 1.82 | 22,536 | 2 | 2 |

[^124] going to press; will be published in one of the regularly scheduled crop reports and in the Quarterly Bulletin of Agricultural Statistics (Catalogue No. 21-003).
12.-Acreages, Production and Values of Principal Field Crops, by Province, 1961 and 1962, with Average for 1955-59
(Exclusive of Newfoundland)

| Field Crop and Province | Area |  |  | Total Production |  |  | Gross Farm Value ${ }^{1}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { Average } \\ 1955-59 \end{gathered}$ | 1961 | 1962 | $\underset{\text { Average }}{\text { 1955-59 }}$ | 1961 | 1962 | $\begin{gathered} \text { Average } \\ 1955-59 \end{gathered}$ | 1961 |
|  | $\begin{aligned} & \text { '000 } \\ & \text { acres } \end{aligned}$ | '000 acres | $\begin{aligned} & \text { '000 } \\ & \text { acres } \end{aligned}$ | '000 bu. | $\begin{aligned} & \text { '000 } \\ & \text { bu. } \end{aligned}$ | '000 | \$'000 | \$'000 |
| Wheat.................. | 22,730 | 25,316 | 26,893 | 465,618 | 283,394 | 557,554 | 608,018 | 486,324 |
| Prince Edward Island... |  | 4 | 5 1 | 99 <br> 31 <br> 6 | $\begin{array}{r}114 \\ 42 \\ \hline\end{array}$ | 145 38 | $\begin{array}{r}164 \\ 50 \\ \hline\end{array}$ | 192 71 |
| New Brunswick | 2 | 2 | 3 | 62 | 62 | 72 | 104 | 104 |
| Quebec.... | 15 | 11 | 10 | 350 | 250 | 267 | 565 | 422 |
| Ontario- Winter | 560 | 561 | 450 | 19,182 | 19,981 | 15,795 | 26,511 | 28,773 |
| Spring | 18 | 20 | 18 | ${ }_{397}$ | ${ }_{4} 46$ | ${ }^{15} 4$ | , 547 | 671 |
| Manitoba | 2,325 | 2,914 | 3,118 | 54,000 | 34,000 | 82,000 | 73,128 | 59,840 |
| Saskatchewa | 14,494 | 16,082 | 17,388 | 274,000 | 137,000 | 344,000 | 358,466 | 239,750 |
| Alberta. | 5,253 | 5,633 | 5,807 | 116,200 | 89,000 | 112,000 | 146,824 | 153,080 |
| British Columbia | 58 | 87 | 94 | 1,298 | 2,479 | 2,800 | 1,660 | 3,421 |
| Oats. | 9,716 | 8,543 | 10,591 | 374,764 | 283,965 | 493,610 | 238,638 | 212,795 |
| Prince Edward Island... | 92 | 98 | 97 | 4,014 | 4,524 | 5,100 | 2,983 | 3,845 |
| Nova Scotia | 42 | 38 | 37 | 1,891 | 1,579 | 1,450 | 1,756 | ${ }_{3}^{1,516}$ |
| New Brunswick | 122 | 104 | 102 | 5,081 | 4,077 | 4,700 | 3,925 38 38 | 3,384 45,865 |
| Quebec. | 1,271 1,644 | 1,299 1 | 1,267 1,848 | 44,582 78 7856 | 50,401 89,879 | 55,114 100,346 | 38,017 57,774 | 42,802 |
| Ontario. | 1,644 1,557 | 1,794 1.300 | 1,848 1,794 | 78,756 57,200 | 89,879 24,000 | 100,346 89,000 | 57,774 32,544 | -15,120 |
| Saskatche | 2,537 | 1,492 | 2,712 | 86,600 | 19,000 | 110,000 | 47,724 | 12,160 |
| Alberta | 2,362 | 2,330 | 2,646 | 92,400 | 86,000 | 123,000 | 51,352 | 55,040 |
| British Columbia | 89 | 88 | 88 | 4,240 | 4,505 | 4,900 | 2,583 | 3,063 |

${ }^{1}$ Values for 1962 not available at time of going to press; see footnote 2, Table 11.
12.-Acreages, Production and Values of Principal Field Crops, by Province, 1961 and 1962, with Average for 1955-59-continued

| Field Crop and Province | Area |  |  | Total Production |  |  | Gross Farm Value ${ }^{1}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { Average } \\ 1955-59 \end{gathered}$ | 1961 | 1962 | $\begin{gathered} \text { Average } \\ 1955-59 \end{gathered}$ | 1961 | 1962 | $\begin{gathered} \text { Average } \\ 1955-59 \end{gathered}$ | 1961 |
|  | ’000 <br> acres | $\begin{gathered} \text { '000 } \\ \text { acres } \end{gathered}$ | $\begin{aligned} & \text { '000 } \\ & \text { acres } \end{aligned}$ | '000 | $\begin{aligned} & \text { '000 } \\ & \text { bu. } \end{aligned}$ | '000 | \$'000 | \$'000 |
| Barley.................. | 8,971 | 5,529 | 5,287 | 237,926 | 112,640 45 | 165,8888 | 187,661 | 118,810 52 |
| Prince Edward Island... |  |  |  | 43 | 45 | 258 | 44 <br> 59 | 52 49 |
| Nova Scotia : ........... | 2 | 1 | 1 | 53 | 41 | 47 126 | 59 | $\stackrel{49}{ }$ |
| New Brunswick. ........ | 5 | 3 | 3 19 | 144 | 105 | 126 | 153 | 1276 |
| Quebec................. | $\stackrel{30}{ }$ | 21 | 19 80 | 1416 3874 | +3,342 | 718 3639 | 1,026 | 3,509 |
| Ontario................ | 102 1,639 | 655 | 629 | 38,400 | 9,000 | 21,000 | 32,198 | 9,450 |
| Saskatchewan | 3,485 | 1,839 | 1,629 | 87,400 | 20,000 | 48,000 | 68,312 | 21,000 |
| Alberta.. | 3,642 | 2,867 | 2,839 | 105,200 | 77,000 | 89,000 | 80,526 | 81,620 |
| British Columbia. | 65 | 63 | 80 | 1,896 | 2,365 | 3,100 | 1,422 | 2,128 |
| Fall Rye. | 430 | 472 | 570 | 7,380 | 5,903 | 11,384 | 6,802 | 6,322 |
| Quebec. | 7 | 4 | 4 | 147 | 86 | 82 | 173 | 99 |
| Ontario | 76 | 62 | 63 | 1,708 | 1,540 | 1,512 | 1,783 | 1,679 |
| Manitoba | 69 | 78 | 108 | 1,270 | 870 | 2,740 | 1,148 | 940 |
| Saskatchewan | 191 | 177 | 215 | 2,670 | 1,250 | 4,200 | 2,372 | 1,362 |
| Alberta. | 85 | 149 | 179 | 1,540 | 2,100 | 2,800 | 1,292 | 2,184 |
| British Columbia. | 2 | 2 | 2 | 45 | 57 | 50 | 35 | 58 |
| Spring Rye | 147 | 89 | 97 | 1,982 | 616 | 1,260 | 1,766 | 661 |
| Manitoba | 8 | 2 | 3 | 112 | 16 | 60 | 102 | 17 |
| Saskatchewan | 114 | 62 | 64 | 1,520 | 400 | 800 | 1,365 | 436 |
| Alberta. | 25 | 25 | 30 | 350 | 200 | 400 | 299 | 208 |
| All Rye. | 577 | 561 | 668 | 9,362 | 6,519 | 12,644 | 8,568 | 6,983 |
| Quebec. | 7 | 4 | 4 | 147 | 86 | 82 | 173 | 99 |
| Ontario | 76 | 62 | 63 | 1,708 | 1,540 | 1,512 | 1,783 | 1,679 |
| Manitoba | 77 | 80 | 111 | 1,382 | 886 | 2,800 | 1,250 | 957 |
| Saskatchewan | 305 | 239 | 279 | 4,190 | 1,650 | 5,000 | 3,737 | 1,798 |
| Alberta. | 110 | 174 | 209 | 1,890 | 2,300 | 3,200 | 1,591 | 2,392 |
| British Columbia | 2 | 2 | 2 | 45 | 57 | 50 | 35 | 58 |
| Peas. | 77 | 66 | 50 | 1,264 | 1,040 | 827 | 2,721 | 2,313 |
| Quebec. | 3 | 2 | 2 | 55 | 35 | 35 | 217 | 144 |
| Ontario | 6 | 3 | 2 | 105 | 59 | 51 | 260 | 151 |
| Manitoba | 51 | 47 | 32 | 747 | 700 | 500 | 1,281 | 1,470 |
| Saskatchew | 3 | 2 | 3 | 46 | 33 | 46 | 107 | 58 |
| Alberta..... | 8 | 9 | 8 | 179 | 131 | 134 | 499 | 317 |
| British Columbia....... | 6 | 4 | 3 | 133 | 82 | 61 | 357 | 173 |
| Beans.. | 68 | 66 | 65 | 1,167 | 1,325 | 1,423 | 4,420 | 5,171 |
| Quebec. | 1 | 1 | 1 | 23 | 15 | 17 | 100 | 62 |
| Ontario | 66 | 65 | 64 | 1,143 | 1,310 | 1,406 | 4,320 | 5,109 |
| Soybeans. | 218 | 212 | 221 | 6,256 | 6,631 | 6,608 | 12,379 | 14,920 |
| Ontario | 245 | 212 | 221 | 6,220 | 6,631 | 6,608 | 12,307 | 14,920 |
| Buckwheat.............. | 114 | 58 | 45 | 2,248 | 1,217 | 1,122 | 2,510 | 1,390 |
| New Brunswick | 5 | 3 | 4 | 144 | 96 | 117 | 164 | 111 |
| Quebec. | 39 | 18 | 14 | 926 | 452 | 361 | 1,149 | 542 |
| Ontario | 35 | 24 | 18 | 774 | 526 | 434 | 839 | - 573 |
| Manitoba | 35 | 13 | 10 | 404 | 143 | 210 | 359 | 164 |
| Mixed Grains. | 1,513 | 1,566 | 1,522 | 64,427 | 61,310 | 72,186 | 52,374 | 54,775 |
| Prince Edward Island. | 58 | 52 | 51 | 2,580 | 2,548 | 2,600 | 2,262 | 2,472 |
| Nova Scotia. | 10 | 8 | 8 | 415 | 357 | 304 | 423 | 393 |
| New Brunswick | 6 | 7 | 7 | 249 | 267 | 315 | 230 | 267 |
| Quebec. | 176 | 109 | 96 | 6,281 | 4,316 | 4,205 | 6,790 | 4,748 |
| Ontario | 902 | 718 | 740 | 43,427 | 38,034 | 41,662 | 35,003 | 33,090 |
| Manitoba. | 87 | 157 | 124 | 2,631 | 2,857 | 5.000 | 1,802 | 2,600 |
| Saskatchewan........... | 62 | 136 | 125 | 1,599 | 1,469 | 4,400 | 1,067 | 1,190 |
| Alberta................ | 209 | 374 | 367 | 7,057 | 11,257 | 13,500 | 4,647 | 9,794 |
| British Columbia........ | 4 | 4 | 4 | 187 | 205 | 200 | 149 | 221 |
| Flaxseed. | 2,593 | 2,085 | 1,415 | 22,544 | 14,318 | 15,685 | 60,441 | 47,612 |
| Ontario. | 18 | 21 | 21 | 238 | 381 | 362 | 643 | 1,204 |
| Manitoba............. | 662 1,411 | 748 | 703 | 5,040 | 4,300 | 8,200 | 13,604 | 14,190 |
| Saskatchewan ........... | 1,411 493 | 941 362 | 389 299 | 11,560 5,620 | 5,600 4,000 | 4,100 3,000 | 30,788 15,184 | 18,816 13,280 |
| British Columbia. | 8 | 3 | 2 | -86 | 47 | ${ }^{23}$ | 15, 223 | ${ }_{122}$ |

[^125]12.-Acreages, Production and Values of Principal Field Crops, by Province, 1961 and 1962, with Average for 1955-59-concluded

| Field Crop and Province | Area |  |  | Total Production |  |  | Gross Farm Value ${ }^{1}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { Average } \\ & \text { 1955-59 } \end{aligned}$ | 1961 | 1962 | $\begin{aligned} & \text { Average } \\ & 1955-59 \end{aligned}$ | 1961 | 1962 | $\begin{gathered} \text { Average } \\ 1955-59 \end{gathered}$ | 1961 |
|  | '000 acres | $\begin{aligned} & \text { '000 } \\ & \text { acres } \end{aligned}$ | $\begin{aligned} & \text { '000 } \\ & \text { acres } \end{aligned}$ | '000 lb. | '000 lb. | '000 lb. | \$'000 | \$'000 |
| Sunflower Seed | 36 | 34 | 23 | 20,058 | 24,107 | 17,360 | 849 | 1,052 |
| Manitoba. | 32 | 30 | 20 | 16,103 | 21,350 | 15,360 | 719 | 961 |
| Alberta.. | - | 3 | 2 | - | 2,757 | 2,000 | - | 91 |
| Rapeseed. | 389 | 710 | 404 | 275,378 | 561,000 | 318,000 | 8,774 | 20,179 |
| Manitoba | 19 | 29 | 26 | 13,498 | 18,000 | 23,000 | 458 | 648 |
| Saskatchewan | 328 | 374 | 167 | 231,066 | 280,000 | 131,000 | 7,349 | 9,800 |
| Alberta................. | 42 | 307 | 212 | 30,814 | 263,000 | 164,000 | 967 | 9,731 |
| Mustard Seed............ | 95 | 121 | 121 | 74,701 | 37,500 | 72,900 | 2,822 | 1,355 |
| Manitoba............... | 2 | 11 | 10 | 209 | 4,100 | 7,200 | 10 | 184 |
| Saskatchewan | - | 41 | 60 |  | 17,100 | 35,700 | - | 470 |
| Alberta. | 95 | 69 | 52 | 74,493 | 16,300 | 30,000 | 2,812 | 701 |
|  |  |  |  | '000 bu. | '000 bu. | '000 bu. |  |  |
| Shelled Corn. | 514 | 400 | 421 | 30,718 | 29,208 | 32,025 | 35,554 | 35,334 |
| Ontario. | 507 | 396 | 418 | 30,539 | 29,085 | 31,893 | 35,353 | 35,193 |
| Manitoba. | 7 | 4 | 3 | 178 | 123 | 132 | 201 | 141 |
|  |  |  |  | '000 cwt. | '000 cwt. | '000 cwt. |  |  |
| Potatoes................. | 305 | 306 | 286 | 40,297 | 44,108 | 45,064 | 77,504 | 61,933 |
| Prince Edward Island... | 44 | 46 | 39 | 7,534 | 7,623 | 6,475 | 11,750 | 6,937 |
| Nova Scotia : . . . . . . . . | 10 | 8 | 7 | 1,433 | 1,053 | 932 | 2,860 | 1,727 |
| New Brunswick......... | 46 | 54 | 50 | 8,662 | 10,162 | 10,300 | 12,988 | 9,044 |
| Quebec. . | 93 | 80 | 72 | 9,813 | 0,516 | 9,079 | 20,441 | 14,750 |
| Ontario.................. | 54 | 52 | 50 | 7,112 | 9,819 | 9,581 | 15,497 | 15,383 |
| Manitoba | 16 | 20 | 23 | 1,274 | 767 | 2,622 | 2,504 | 1,802 |
| Saskatchew | 14 | 12 | 13 | 881 | 357 | , 975 | 2,283 | 1,071 |
| Alberta. | 18 | 21 | 22 | 1,683 | 2,545 | 3,100 | 3,738 | 5,395 |
| British Columbia........ | 10 | 12 | 11 | 1,905 | 2,266 | 2,000 | 5,443 | 5,824 |
|  |  |  |  | '000 tons | '000 tons | '000 tons |  |  |
| Field Roots.............. | 36 | 27 | 26 | 391 | 288 | 282 | 8,419 | 4,850 |
| Prince Edward Island... | 6 | 4 | 3 | 80 | 40 | 37 | 1,358 | 770 |
| Nova Scotia. ........... | 3 | 2 | 2 | 51 | 28 | 29 | 1,284 | 553 |
| New Brunswick......... | 3 | 2 | 2 | 32 | 17 | 18 | 1804 | ${ }_{980}$ |
| Quebec... | 9 | 7 | 12 | 68 160 | 19 154 | 49 149 | 1,805 3,168 | 2,215 |
| Ontario... | 15 | 12 |  |  |  |  |  |  |
| Tame Hay............. | 11,291 | 12,229 | 12,370 | 19,412 | 20,812 | 22,536 | 296,922 | 325,327 |
| Prince Edward Island... | 201 | 179 | 180 | 356 | 331 | 298 | 4,597 | 4,634 <br> 7 <br> 124 |
| Nova Scotia | 296 | 234 | 228 | ${ }_{6}^{613}$ | 512 | 465 | 10,549 | 7,424 |
| New Brunswick.......... | 374 | 287 | 282 | 696 | 545 | 545 | 9,849 |  |
| Quebec. | 3,464 | 3,312 | 3,344 | 5,962 | 6,094 | 6,320 | 92,154 | 01,410 |
| Ontario. | 3,278 | 3,281 | 3,249 | 6,433 | 7,678 | 6,368 2 | 90,040 14,741 | 103,039 15,820 |
| Manitoba................. | 713 | 1,004 | 1,045 1,020 | 1,239 | 904 694 | 2,090 1,550 | 14,741 14,812 | 13,186 |
| Alberta.... | 1,829 | 2,477 | 2,626 | 2,521 | 3,171 | 4,000 | 41,202 | 63,420 |
| British Columbia. | 351 | 403 | 396 | 777 | 883 | 900 | 18,978 | 18,764 |
| Fodder Corn............. | 375 | 360 | 367 | 3,637 | 4,054 | 4,409 | 17,527 | 21,949 |
| Quebec. | 68 | 55 | 51 | 626 | 581 | 627 | 3,997 | 3,486 |
| Ontario.. | 282 | 269 | 272 | 2,854 | 3,296 | 3,457 | 12,409 | 16,941 |
| Manitoba | 21 | 31 | 38 | 108 | 125 | 260 | 708 | 1,188 |
| Saskatchewan... | 2 | 2 | 2 | 5 | 2 | ${ }_{59}^{6}$ | 65 349 | 34 300 |
| British Columbia. . | 3 | 3 | 4 | 44 | 50 | 59 | 349 | 300 |
| Sugar Beets.............. | 87 | 85 | 85 | 1,098 | 1,106 | 1,106 | 15,521 | 14,515 |
| Quebec.................... | 6 | 8 | 11 | 63 | 113 | 147 | 953 | 1,642 |
| Ontario. | 24 | 16 | 13 | 329 | 279 | 229 | 3,998 | 3,229 |
| Manitoba | 21 | 21 | 22 | 208 | 188 | 197 | 2,918 | 2,430 7,214 |
| Alberta................. | 37 | 40 | 40 | 493 | 525 | 533 | 7,652 | 7,214 |

[^126]13.-Acreages and Production of Grain in the Prairie Provinces, 1956-62

| Grain | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Acreages |  |  |  |  |  |  |
|  | $\begin{aligned} & \text { '000 } \\ & \text { acres } \end{aligned}$ | '000 acres | $\begin{aligned} & \text { '000 } \\ & \text { acres } \end{aligned}$ | '000 acres | '000 acres | '000 acres | ’000 acres |
| Wheat. | 22,064 | 20,881 | 21,480 | 23,970 | 23,900 | 24,629 | 26,313 |
| Oats... | 7,422 | 5,633 | 5,810 | 5,626 | 6,344 | 5,122 | 7,152 |
| Barley. | 8,181 | 9,209 | 9,104 | 7,700 | 6,680 | 5,361 | 5,097 |
| Rye... | ${ }^{452}$ | 455 | 431 | 458 | 490 | 493 | 599 |
| Flaxseed........ | 3,010 | 3,462 | 2,526 | 2,026 | 2,481 | 2,051 | 1,391 |
|  | Production |  |  |  |  |  |  |
|  | '000 bu. | '000 bu. | '000 bu. | '000 bu. | '000 bu. | '000 bu. | '000 bu. |
| Wheat. | 551,000 | 371,000 | 372,000 | 430,000 | 498,000 | 260,000 | 538,000 |
| Oats.. | 343,000 | 171,000 | 186,000 | 191,000 | 244,000 | 129,000 | 322,000 |
| Barley. | 262,000 | 209,000 | 231,000 | 209, 000 | 187,000 | 106,000 | 158,000 |
| Rye.... | 6,350 34,600 | 6,300 | 5,600 | 6,760 | 8,560 | 4,836 | 11,000 |
| Flaxseed. | 34,600 | 18,900 | 22,000 | 16,900 | 22,000 | 13,900 | 15,300 |

Stocks of Grain in Canada.-Table 14 shows the stocks of Canadian grain on hand in Canada and in the United States on July 31 for the years 1960-62, 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.

## 14.-Carryover of Canadian Grain as at July 31, 1960-62, with Averages for 1959-54 and 1955-59

Nore.-Figures for individual years before 1960 will be found in the corresponding table of previous editions of the Year Book.

| Grain and Year | Total in Canada and United States | Total Canada | InCommercialStorageinCanada | $\begin{aligned} & \text { On Farms } \\ & \text { in } \\ & \text { Canada } \end{aligned}$ | Prairie Provinces |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | On Farms | $\underset{\substack{\text { Country } \\ \text { Elevators }}}{\text { In }}$ |
| Wheat | bu. | bu. | bu. | bu. | bu. | bu. |
| Av. 1950-54. | 304,088,145 | 303,087,359 | 227,189,959 | 75, 897,400 | 73,600,000 | 113,508,787 |
| Av. 1955 | 607,664,667 | 607,347, 244 | 401, 923,244 | 215, 024,000 | 211,600,000 | 235,770, 759 |
| 1960 r | 599, 588, 136 | 599,588, 136 | 455, 888,136 | 143, 700,000 | 142,000,000 | 260,945,004 |
|  | 607,840,667 | 607,840,667 | 437,390,667 | 170,450,000 | 168,000,000 | 244, 893, 302 |
| 1962. | 391,058,273 | 391, 058,273 | 331,888, 273 | 59,170,000 | 56,000,000 | 160,966,460 |
| Oats- |  |  |  |  |  |  |
| Av. 1950-54.. | 103,723, 676 | 102,717,439 | 34,956,239 | 67,761,200 | 55,500,000 | 20,442,787 |
| Av. 1955-59 r | 140,636,549 | 140,451,508 | 43,511,508 | 96,540,000 | 78, 800,000 | 28, 289, 209 |
| 1960 | 100, 827,492 | 100, 827,492 | 20, 827,492 | 80,000,000 | 56,000,000 | 15,278, 425 |
| 1961 | 115, 153,740 | 115, 153, 740 | 21, 453,740 | 93,700,000 | 75,000,000 | 11,192,401 |
| 1962 | 79,066,164 | 79,066,164 | 22,166, 164 | 56,900,000 | 36,000,000 | 14,029,060 |
|  |  |  |  |  |  |  |
| Av. 1950-54.. | 82,186,470 | 82,028, 552 | 44, 888,752 | 37,139, 800 | 36,200,000 | 24,153,330 |
| Av. 1955-59 \% | 118, 306,634 | 118, 183, 588 | 60,532,588 | 58, 251,000 | 56,000,000 | 37,528,726 |
| 1960 r 1961 | 128, 469,650 | 128, 469, 650 | 58, 469,650 | $70,000,000$ | 68,000,000 | 42,758,000 |
| 1961 r | 112,557, 260 | 112,262,633 | 52,457,260 | 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 |
|  |  |  |  |  |  |  |
| Av. 1950-54.. | 11,656,052 | 11,000,586 | 6,136,186 | 4,864,400 | 4,786,000 | 2,031,544 |
| Av. 1955-59 r | 13,557, 828 | 13,327,663 | 5, 788,663 | 8,159,000 | 7,820,000 | 2,327,160 |
| 1960. | 6,753,391 | 6,581,640 | 2,781,640 | $3,800,000$ | $3,600,000$ | 1,864,827 |
|  | 7,417,007 | 7,417,007 | 4,817,007 | 2,600,000 | 2,400,000 | 1,931,297 |
| Flaxseed- |  |  |  |  |  |  |
| Av. 1950-54.. | 3,273,720 | 3,273,720 | 2,285,920 | 987,800 | 965,000 |  |
| Av. 1955-59. | 5,068,048 | 5,068,048 | 3,752,448 | 1,315,600 | 1,296,000 | 913, 866 |
| 1960 r | 4,824,392 | 4,824,392 | 4,064,392 | 760,000 | 750,000 | 1,191,891 |
| 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 | 1,266,994 |

## Subsection 4.-Livestock and Poultry

Livestock.-Two main features of the livestock industry in 1962 as compared to 1961 were higher prices, especially for cattle and hogs, and larger domestic supplies of feed because of a better grain crop in Western Canada. As a result, there was a substantial increase in the value of livestock marketed through commercial channels. The estimated value of total sales to public stockyards, direct shipments to packing plants and direct on export amounted to $\$ 910,400,000$, an increase of $\$ 76,900,000$ or 9 p.c. over 1961. The higher prices more than offset the reduction in marketings of cattle, sheep and lambs.

Cattle and calves on farms at June 1, 1962 were estimated at 12,075,000, an increase of 1.2 p.c. over the 1961 Census total of $11,933,700$ and an all-time high. There was an increase of 3.4 p.c. in Eastern Canada but a decrease of 0.7 p.c. in the west. Beef cow numbers continued their advance as did steers and calves but other classes decreased slightly. Between 1955 and 1961 total cattle numbers increased about 9 p.c., beef cows increased 24 p.c. and milk cows decreased slightly. Total sheep and lambs at June 1, 1962 were estimated at $1,433,000$ head, down 7.4 p.c. from the June 1961 Census total of $1,548,200$. In the five years between censuses, sheep numbers decreased by 25.7 p.c. in Eastern Canada but increased by 23.1 p.c. in the western provinces. Hog numbers in Canada at June 1, 1962 at 4,973,000 were down 6.7 p.c. from the June 1961 Census total of $5,331,200$; a decrease of 22.5 p.c. in Western Canada was partly compensated for by an increase of 8.1 p.c. in the eastern provinces. Horse numbers continued to decline and were estimated at 477,200 at June 1, 1962, 6.5 p.c. below the year-earlier Census total of 510,600 . These comparisons relate only to nine provinces, being exclusive of Newfoundland and the Territories.
15.-Livestock on Farms, by Province, as at June 1, 1961 and 1962

| Province and Item | $1961{ }^{1}$ | 1962 | Province and Item | $1961{ }^{1}$ | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. |  | No. | No. |
| Newfoundland- |  |  | Manitoba- |  |  |
| Horses. | 1,152 | . | Horses. | 50,798 | 46,000 |
| Milk cows ${ }^{2}$ | 2,760 |  | Milk cows ${ }^{2}$ | 195,869 | 188,000 |
| Other cattle | 4,560 |  | Other cattle | 799,691 | 794,000 |
| Sheep. | 15,320 |  | Sheep. | 81,325 | 76,000 |
| Swine. | 1,554 | . | Swine | 431,462 | 331,000 |
| Prince Edward Island- |  |  | Saskatchewan- |  |  |
| Horses. | 7,867 | 7,000 | Horses. | 110,314 | 98,000 |
| Milk cows ${ }^{2}$ | 39,589 | 38,500 | Milk cows ${ }^{2}$ | 241, 113 | 229,000 |
| Other cattle | 81,470 | 82,500 | Other cattle | 1,879,994 | 1,851,000 |
| Sheep. | 23,926 | 22,000 | Sheep. | 188,961 | 174,000 |
| Swine. | 54,873 | 49,000 | Swine. | 640,801 | 429,000 |
| Nova Scotia- |  |  | Alberta- |  |  |
| Horses... | 8,917 | 8,000 | Horses. | 113,222 | 109,000 |
| Milk cows ${ }^{2}$ | 64,047 | 62,000 | Milk cows ${ }^{2}$ | 287,932 | 280,000 |
| Other cattle | 99,643 | 101,000 | Other cattle | 2,591,467 | 2,583,000 |
| Sheep. | 64,654 | 58,000 | Sheep. | 496,882 | 445,000 |
| Swine. | 46,856 | 52,000 | Swine. | 1,469,969 | 1,200,000 |
| New Brunswick- |  |  | British Columbia- |  |  |
| Horses... | 9,317 | 8,200 | Horses. . | 23,907 | 25,000 |
| Milk cows ${ }^{2}$ | 67,306 | 64,000 | Milk cows ${ }^{2}$ | 91,889 | 92,000 |
| Other cattle | 92,853 | 92,000 | Other cattle | 369,887 | 394,000 |
| Sheep. | 53,896 | 50,000 | Sheep. . | 102,816 | 98,000 |
| Swine. | 47,126 | 45,000 | Swine. | 41,628 | 42,000 |
| Quebec- |  |  | Yukon and N.W.T.- |  |  |
| Horses. | 97,430 | 91,000 | Horses..... | 233 | .. |
| Milk cows ${ }^{2}$. | 1,006,744 | 1,032,000 | Milk cows ${ }^{2}$ | 16 | . |
| Other cattle | 908,486 | 924,000 | Other cattle | 190 | $\cdots$ |
| Sheep. | 194,665 | 171,000 | Sheep. | 3 | . |
| Swine.. | 912,125 | 970,000 | Swine. | 2 | .. |
| Ontario- |  |  | Totals- |  |  |
| Horses.... | 88,864 | 85,000 | Horses. | 512,021 | 2,97,200 |
| Milk cows ${ }^{2}$ | 992,396 | 970,000 | Milk cows ${ }^{2}$. | 2,989,661 | 2,955,500 |
| Other cattle | 2,123,282 | 2,298,000 | Other cattle | $\mathbf{8 , 9 5 1 , 5 2 3}$ $\mathbf{1 , 5 6 3 , 5 3 4}$ | 9,119,500 |
| Sheep. | 341,086 $1,686,340$ | 339,000 $1,855,000$ | Sheep. | 1,563,534 | $\mathbf{1 , 4 3 3 , 0 0 0}$ $\mathbf{4 , 9 7 3 , 0 0 0}$ |

[^127]16.-Average Value per Head of Farm Livestock, by Province, 1961 and 1962
(Exclusive of Newfoundland and the Yukon and Northwest Territories)

| Province and Item | 1961 ${ }^{\text {r }}$ | 1962 | Province and Item | 1961 ${ }^{\text {r }}$ | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ |  | \$ | \$ |
| Prince Edward Island- |  |  | Manitoba- |  |  |
| Horses............... | 120 | 122 | Horses | 115 | 115 |
| All cattle...... | 112 | 115 | All cattle.... | 1156 195 | 145 |
| Other cattle........... | 84 | 87 | Other cattle. | 122 | 130 |
| Sheep.. | 14 | 14 | Sheep.. | 15 | 14 |
| Swine.. | 26 | 28 | Swine. | 25 | 26 |
| Nova Scotia- |  |  | Saskatchewan - |  |  |
| Horses. | 139 | 151 | Horses... | 95 | 99 |
| All cattle. | 121 | 123 | All cattle. | 134 | 139 |
| Milk cows ${ }^{1}$ | 171 | 171 | Milk cows ${ }^{\text {d }}$ | 198 | 205 |
| Other cattle. | 88 | 94 | Other cattle | 125 | 131 |
| Sheep.. | 14 | 15 | Sheep..... | 15 | 14 |
| Swine.. | 28 | 27 | Swine.. | 23 | 27 |
| New Brunswick- |  |  | Alberta- |  |  |
| Horse..... | 167 | 174 | Horses... | 103 | 105 |
| All cattle.. | 115 | 113 | All cattle. | 133 | 138 |
| Milk cows ${ }^{\text {1 }}$ | 163 | 158 | Milk cows ${ }^{1}$ | 206 | 210 |
| Other cattle. | 80 | 82 | Other cattle. | 125 | 130 |
| Sheep.... | 15 | 14 | Sheep.. | 14 | 14 |
| Swine.................. | 28 | 27 | Swine.. | 25 | 26 |
| Quebec- |  |  | British Columbia- |  |  |
| Horses. | 195 | 209 | Horses. | 122 | 125 |
| All cattle. | 128 | 134 | All cattle. | 137 | 137 |
| Milk cows ${ }^{1}$ | 174 | 182 | Milk cows ${ }^{1}$ | 215 | 200 |
| Other cattle | 77 | 80 | Other cattle. | 117 | 123 |
| Sheep.. | 13 | 14 | Sheep.. | 17 | 18 |
| Swine.. | 28 | 28 | Swine. | 28 | 23 |
| Ontario- |  |  | Totals- |  |  |
| Horses. | 163 | 165 | Horses. | 133 | 139 |
| All cattle.. | 155 | 157 | All cattle. . | 138 | 142 |
| Milk cows ${ }^{1}$. | 228 | 229 | Milk cows ${ }^{1}$ | 199 | 203 |
| Other cattle. | 120 | 127 | Other cattle | 117 | 123 |
| Sheep........ | 18 | 19 | Sheep. | 15 | 16 |
| Swine......... | 30 | 31 | Swine. | 27 | 28 |

${ }^{1}$ Cows and heifers, two years old or over, kept for milk purposes.
The federal 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 1953 are given in Table 17. 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 17 are fairly inclusive. The slaughtering and meat packing industry is dealt with in its proper relation to all other manufacturing enterprises in Chapter XIV of this volume. On a gross value basis it normally ranks among the four largest manufacturing industries in Canada but it owes its importance to the value of raw products obtained from the farmer and the rancher rather than to the value added by the manufacturing process.

There were slightly fewer cattle slaughtered in inspected establishments in 1962 than in 1961, the number being down by 0.7 p.c. Slaughterings of calves, on the other hand, were up 2.8 p.c. and of hogs 3.1 p.c., but sheep and lambs registered the considerable decline of 10.5 p.c.

Price movements in 1962 are indicated by the annual average calculation of prices on the Toronto, Montreal, Winnipeg and Edmonton markets as shown in Table 44, p. 472.

## 17.-Livestock Slaughtered at Inspected Establishments 1953-62, and by Month 1961 and 1962

(Exclusive of Newfoundland)


Poultry.-Poultry on farms and their values are given in Table 18; production and consumption of poultry meat are included in Table 19.

## 18.-Numbers and Values of Poultry on Farms, by Province, as at June 1, 1960-62

Note.-Figures given in this table for 1960 and 1961 have been revised since the publication of the 1962 Year Book; figures on a comparable basis are available from DBS for the years 1957-59.

| Province and Year | $\begin{gathered} \text { Hens } \\ \text { and } \\ \text { Chickens } \end{gathered}$ |  | Turkeys |  | Geese |  | Ducks |  | $\stackrel{\text { All }}{\text { Poultry }}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | Value | No. | Value | No. | Value | No. | Value | No. | Value |
|  | '000 | \$'000 | '000 | \$'000 | '000 | \$'000 | '000 | \$'000 | '000 | \$'000 |
| Newfoundland............ | . | . | . | . | . | . | . | . | . | - |
| Prince Edward Is.. . ${ }_{1961}^{1960}$ | 588 509 | 563 493 | 20 | 105 60 | 7 | 23 20 | 5 3 | 10 5 | 620 529 | 701 578 |
| 1962 | 440 | 436 | 10 | 52 | 6 | 22 | 2 | 4 | 458 | 514 |
| Nova Scotia......... 1960 | 2,037 | 2,393 | 32 | 161 | 2 | 9 | 1 | 2 | 2,072 | 2,565 |
| 1961 | 2,185 | 2,520 | 44 | 239 | 2 | 7 | 1 | 3 | 2,232 | 2,769 |
| 1962 | 2,015 | 2,361 | 38 | 189 | 1 | 4 | 1 | 2 | 2,055 | 2,556 |
| New Brunswick..... 1960 | 1,054 | 1,251 | 25 | 134 | 2 | 8 | 2 | 5 | 1,083 | 1,398 |
| 1961 | 1,040 | 1,213 | 34 | 189 | 2 | 6 | 1 | 2 | 1,076 | 1,410 |
| 1962 | 1,070 | 1,276 | 25 | 144 | 1 | 4 | 1 | 3 | 1,097 | 1,427 |
| Quebec.............. 1960 | 11,485 | 11,098 | 630 | 3,112 | 9 | 32 | 52 | 105 | 12,176 | 14,347 |
| Quebec............. 1961 | 12,935 | 12,021 | 732 | 3,572 | 7 | 27 | 57 | 116 | 13,731 | 15,736 |
| 1962 | 12,680 | 12,603 | 625 | 2,719 | 8 | 28 | 54 | 104 | 13,367 | 15,454 |
| Ontario.............. 1960 | 24,808 | 23,568 | 2,200 | 10,714 | 89 | 310 | 118 | 224 | 27,215 | 34,816 |
| 1961 | 24,708 | 23,500 | 2,745 | 13,204 | 70 | 254 | 122 | 236 | 27,645 | 37,194 |
| 1962 | 23,485 | 22,594 | 2,800 | 12,544 | 68 | 240 | 150 | 279 | 26,503 | 35,657 |
| Manitoba........... 1960 | 6,400 | 4,439 | 880 | 2,957 | 77 | 192 | 49 | 71 | 7,406 | 7,659 |
| 1961 | 6,267 | 4,624 | 1,145 | 3,915 | 84 | 224 | 38 | 57 | 7,534 | 8,820 |
| 1962 | 5,465 | 4,068 | 970 | 3,356 | 70 | 182 | 25 | 38 | 6,530 | 7,644 |
| Saskatchewan....... 1960 | 7,060 | 4,406 | 1,000 | 3,240 | 40 | 108 | 58 | 89 | 8,158 | 7,843 |
| 1961 | 6,925 | 4,632 | 1,245 | 4,406 | 45 | 129 | 56 | 92 | 8,270 | 9,259 |
| 1962 | 5,850 | 3,988 | 860 | 2,993 | 40 | 118 | 45 | 77 | 6,795 | 7,176 |
| Alberta............. 1960 | 8,820 | 5,966 | 915 | 3,395 | 85 | 230 | 85 | 134 | 9,905 | 9,725 |
| 1961 | 9,205 | 6,420 | 1,184 | 4,783 | 90 | 252 | 93 | 150 | 10,572 | 11,605 |
| 1962 | 8,370 | 6,010 | 820 | 3,223 | 80 | 241 | 80 | 137 | 9,350 | 9,611 |
| British Columbia. . . 1960 | 5,009 | 5,248 | 454 | 2,438 | 10 | 40 | 25 | 54 | 5,498 | 7,780 |
| 1961 | 5,610 | 5,679 | 528 | 2,496 | 10 | 34 | 27 | 49 | 6,174 | 8,258 |
| 1962 | 5,540 | 6,102 | 500 | 2,775 | 9 | 35 | 25 | 49 | 6,074 | 8,961 |
| Totals......... . 1960 | 67,261 | 58,932 | 6,156 | 26,256 | 321 | 952 | 395 | 694 | 74,133 | 86,834 |
| 1961 | 69,384 | 61,102 | 7,668 | 32,864 | 314 | 953 | 397 | 710 | 77,764 | 95,629 |
| 1962 | 61,915 | 59,438 | 6,648 | 27,995 | 283 | 874 | 383 | 693 | 72,229 | 89,000 |

## 19.-Production and Domestic Disappearance of Poultry Meat, 1960-62

(Eviscerated weight)

| Item | Net <br> Production | Total Supply | Domestic Disappearance | Per Capita Consumption |
| :---: | :---: | :---: | :---: | :---: |
|  | '000 lb. | '000 lb. | '000 lb. | lb. |
| 1960r |  |  |  |  |
| Fowl and chickens. | 357,939 | 387,061 | 372,077 | 20.8 |
| Turkeys.. | 107,644 | 124,128 | 113,548 | 6.4 |
| Geese.. | 2,801 | 2,930 | 2,794 | 0.2 |
| Ducks. | 4,092 | 6,056 | 5,773 | 0.3 |
| Totals, 1960.. | 472,476 | 520,175 | 494,192 | 27.7 |
| 1961 |  |  |  |  |
| Fowl and chickens. | 416,387 | 441,548 | 420,147 | 23.0 |
| Turkeys.. | 143,831 | 158,936 | 138,807 | 7.6 |
| Gucke... | 2,944 4,041 | 3,016 5,722 | 2,809 | 0.2 |
|  |  |  |  |  |
| Totals, 1951. | 567,203 | 609,222 | 566,964 | 31.1 |

19.-Production and Domestic Disappearance of Poultry Meat, 1960-62-concluded

| Item | Net Production | Total Supply | Domestic Disappearance | Per Capita Consumption |
| :---: | :---: | :---: | :---: | :---: |
| 1962 | '000 lb. | '000 lb. | '000 lb. | lb . |
| Fowl and chickens. | 411,513 | 437,638 | 425,899 | 22.9 |
| Turkeys. | 147,155 | 169,833 | 143,137 | 7.7 |
| Geese... | 2,931 | 3,038 | 2,730 | 0.1 |
| Ducks. | 4,379 | 6,065 | 5,760 | 0.3 |
| Totals, 1962. | 565,978 | 616,574 | 577,526 | 31.0 |

## Subsection 5.-Dairying

Milk production in 1962 reached a new record at $19,303,000,000 \mathrm{lb} ., 0.3$ p.c. higher than in 1961. Only three provinces contributed to the increase-Quebec, Ontario and Manitoba -and most of it was utilized for fluid consumption. Of the total milk produced, 58.9 p.c. was used for factory-made dairy products, 30.8 p.c. was sold in fluid form and 10.3 p.c. was used for all purposes on farms.
20.-Production and Utilization of Milk, by Province, 1960-62

| Province and Year | $\stackrel{\text { Milk }}{\text { Used in Manufacture }}$ |  | Milk Otherwise Used |  |  | Total Milk Production |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | On Farms | $\xrightarrow[\text { Factories }]{\text { In }}$ | Fluid <br> Sales | Farm-Home Consumed | Fed on Farms |  |
|  | '000 lb. | '000 lb. | '000 lb. | '000 lb. | '000 lb. | '000 lb. |
| Newfoundland... | . | .. | . | . | . | . |
| Prince Edward Island......... 1960 | ${ }_{2}^{2,223}$ | 160,213 169,942 | 27,339 27 | 22,550 23,790 | 13,273 14,115 | 225,598 <br> 237 |
| 1961 1962 | 2,153 1,803 | 169,942 172,718 | 27,088 27,466 | 23,790 22,410 | 14,115 10,312 | 237,709 |
| Nova Scotia................... 1960 | 12,987 | 124,179 | 194,244 | 47,490 | 19,290 | 398,190 |
| 1961 | 12,191 | 133,437 | 196,865 | 42,690 | 17,512 | 402,695 |
| 1962 | 8,213 | 124,106 | 199,885 | 42,140 | 23,050 | 397,394 |
| New Brunswick............... 1960 | 19,141 | 195,549 | 157,370 | 40,570 | 27,180 | 439,810 |
| 1961 | 19,820 | 201,645 | 161,454 | 39,200 | 24,732 | 446,851 |
| 1962 | 15,256 | 189,773 | 165,968 | 39,250 | 24,264 | 434,511 |
| Quebec......................... . 1960 | 23,728 | 3,926,354 | 1,722,536 | 287,100 | 219,130 | 6,178,848 |
| 1961 | 19,984 | 4,252,715 | 1,753,629 | 281,400 | 233,520 | 6,541,248 |
| 1962 | 19,141 | 4,273,488 | 1,787,587 | 277,500 | 252,480 | 6,610,196 |
| Ontario........................ 1960 | 15,070 | 3,652,196 | 2,148,655 | 222,800 | 225,900 | 6,264,621 |
| 1961 | 10,086 | 3,868,549 | 2,162,011 | 215,900 | 249,700 | 6,506,246 |
| 1962 | 7,138 | 3,910,112 | 2,232,453 | 212,300 | 269,400 | 6,631,403 |
| Manitoba...................... . 1960 | 29,718 | 625,046 | 321,845 | 95,800 | 54,720 | 1,127,129 |
| 1961 | 25,342 | 640,668 | 320,388 | 86,040 | 56,510 | 1,128,948 |
| 1962 | 19,398 | 642,541 | 322,544 | 84,860 | 63,390 | 1,132,733 |
| Saskatchewan................ 1960 | 57,681 | 698,002 | 338,730 | 177,300 | 65,490 | 1,337,203 |
| 1961 | 52,182 | 705,801 | 343,645 | 170,400 | 72,470 | 1,344,498 |
| 1962 | 42,751 | 654,808 | 342,952 | 164,000 | 78,010 | 1,282,521 |
| Alberta....................... 1960 | 52,650 | 1,014,576 | 365,401 | 146,400 | 57,110 | 1,636,137 |
| 1961 | 43,664 | 1,097,169 | 369, 307 | 145,000 | 65, 250 | 1,720,390 |
| 1962 | 38,423 | 1,042,720 | 383,291 | 139,200 | 63,560 | 1,667,194 |
| British Columbia.............. 1960 | 9,734 | 329,692 | 475, 261 | 32,530 | 30,670 | 877,887 |
| 1961 | 8,424 | 363,878 | 479,500 | 31,710 | 33,790 | 917,302 |
| 1962 | 5,849 | 354,543 | 487,494 | 31,370 | 32,860 | 912,116 |
| Totals . . . . . . . . . . . . . . . . . 1960 | 222,932 | 10,725,807 | 5,751,381 | 1,072,540 | 712,763 | 18,485,423 |
| , 1961 | 193,846 | 11,433,804 | 5,813,887 | 1,036,130 | 767,599 | 19,245,266 |
| 1962 | 157,972 | 11,364,809 | 5,919,640 | 1,013,030 | 817,326 | 19,302,777 |

${ }^{1}$ Used in farm butter only.
21.-Farm Values of Milk Production, by Province, 1960-62

| Province and Year | Value of Milk <br> Used in Manufacture |  | Value ofMilkOtherwise Used |  |  | Value of Total Milk Production |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\underset{\text { Farms¹ }}{\text { On }}$ | $\underset{\text { Factories }}{\text { In }}$ | Fluid Sales | Farm-Home Consumed | Fed on <br> Farms ${ }^{2}$ |  |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Newfoundland...................... | . | . | . | . | . | . |
| Prince Edward Island......... . 1960 | 60 | 3,769 | 1,068 | 613 | 807 | 6,317 |
| Prince Edward Iskan........ 1961 | 58 | 3,976 | 1,065 | 649 | 877 | 6,625 |
| 1962 | 42 | 4,023 | 1,103 | 625 | 788 | 6,581 |
| Nova Scotia.................. 1960 | 333 | 3,080 | 9,258 | 1,425 | 915 | 15,011 |
| 1961 | 313 | 3,276 | 9,406 | 1,276 | 872 | 15,143 |
| 1962 | 204 | 3,059 | 9,455 | 1,256 | 996 | 14,970 |
| New Brunswick................ 1960 | 515 | 4,533 | 7,262 | 1,185 | 1,429 | 14,924 |
| 1961 | 534 | 4,696 | 7,377 | 1,152 | 1,383 | 15,142 |
| 1962 | 398 | 4,441 | 7,590 | 1,162 | 1,289 | 14,880 |
| Quebec........................ . 1960 | 639 | 99,128 | 72,526 | 8,871 | 17,071 | 198,235 |
| Quebe.... 1961 | 538 | 105, 678 | 73,830 | 8,611 | 18,660 | 207, 317 |
| 1962 | 474 | 105,582 | 75,126 | 8,436 | 19,635 | 209,253 |
| Ontario......................... 1960 | 406 | 89,592 | 95,434 | 6,550 | 12,663 | 204,645 |
| 1961 | 276 | 92,614 | 95,727 | 6,067 | 12,569 | 207,253 |
| 1962 | 186 | 95,632 | 98,592 | 5,966 | 13,514 | 213,890 |
| Manitoba...................... 1960 | 787 | 13,963 | 12,682 | 2,472 | 3,551 | 33,455 |
| 1961 | 671 | 14,281 | 13,140 | 2,211 | 3,615 | 33,918 |
| 1962 | 489 | 14,271 | 13,238 | 2,181 | 3,803 | 33,982 |
| Saskatchewan................. 1960 | 1,479 | 15,817 | 14,146 | 4,681 | 4,281 | 40,404 |
| 1961 | 1,338 | 15,918 | 14,504 | 4,482 | 4,469 | 40,711 |
| 1962 | 1,060 | 14,734 | 14,871 | 4,264 | 4,500 | 39,429 |
| Alberta. . . . . . . . . . . . . . . . 1960 | 1,350 | 23,791 | 15,781 | 3,836 | 4,337 | 49,095 |
| Aldan.................. 1961 | 1,120 | 25,588 | 16,005 | 3,857 | 5,227 | 51,797 |
| 1962 | 952 | 24,576 | 16,568 | 3,731 | 5,032 | 50,859 |
| British Columbia.............. 1960 | 241 | 8,734 | 26,834 | 1,021 | 1,090 | 37,920 |
| 1961 | 205 | 9,925 | 26,654 | 973 | 1,170 | 38,927 |
| 1962 | 138 | 9,051 | 27,254 | 947 | 1,131 | 38,521 |
| Totals................ 1960 | 5,810 | 262,407 | 254,991 | 30,654 | 46,144 | 600,006 |
| 1961 | 5,053 | 275,952 | 257,708 | 29,278 | 48,842 | 616,833 |
| 1962 | 3,943 | 275,369 | 263,797 | 28,563 | 50,688 | 622,365 |

${ }^{1}$ Used in farm butter only.
${ }^{2}$ Includes values of skim milk and buttermilk retained on farms.
Butter production in 1962 amounted to $372,201,000 \mathrm{lb}$., almost $8,000,000 \mathrm{lb}$. more than in the previous year. The 1962 total included $361,498,000 \mathrm{lb}$. of creamery butter, $6,751,000$ lb . of dairy or farm-made butter and $3,952,000 \mathrm{lb}$. of whey butter. The annual per capita consumption of creamery butter increased for the first time since 1956, moving from 15.81 lb . in 1961 to 17.26 lb . in 1962. Stocks on hand at the end of the year totalled $135,538,000$ lb., the largest carryover on record; combined with the butter equivalent of butter oil stocks, the carryover was $238,138,000 \mathrm{lb}$.

Factory cheese production in 1962 was estimated at $130,178,000 \mathrm{lb}$., 0.9 p.c. lower than in 1961. Peak cheese production occurred in 1942 when the output was $207,431,000 \mathrm{lb}$. and peak exports in 1945 when they amounted to $135,409,000 \mathrm{lb}$. Exports of cheese, mostly cheddar, in 1962 amounted to $27,252,000 \mathrm{lb}$. compared with $19,508,000 \mathrm{lb}$. in 1961.
22.-Production of Butter and Cheese, by Province, 1960-62

| Province and Year | Butter |  |  |  | Cheese |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Creamery | Dairy | Whey | Total | Factory ${ }^{\text {l }}$ |
|  | '000 lb. | '000 lb. | '000 lb. | '000 lb. | ' 000 lb . |
| Newfoundland......... | - | . | . | . | - |
| Prince Edward Island..................... $1960{ }_{196}$ | 5,237 5,808 | 95 92 | 18 16 | $\mathbf{5 , 3 5 0}$ $\mathbf{5 , 9 1 6}$ | 1,028 |
| 1962 | 5,927 | 77 | $\stackrel{16}{24}$ | $\mathbf{5 , 9 1 6}$ 6,028 | 876 891 |
| Nova Scotia. . . . . . . . . . . . . . . . . . . . . . . . 1960 | 3,613 | 555 | - | 4,168 | - |
| ${ }_{1962}^{1961}$ | 3,926 3,926 3,773 | 521 351 | - | 4,447 4,124 | - |
| New Brunswick. ........................... . 1960 | 7,238 | 818 | - | 8,056 | 705 |
| $1961{ }^{\text {r }}$ | 7,571 | 847 | - | 8,418 | 562 |
| 1962 | 6,981 | 652 | - | 7,633 | 503 |
| Quebec..................................... 1960 | 123,731 | 1,014 | 291 | 125,036 | 42,164 |
| ${ }_{1962}^{1961}$ | 139,330 | 854 | 985 | 141,169 | 50,297 |
| 1962 | 144,527 | 818 | 1,329 | 146,674 | 50,049 |
| Ontario................................... 1960 | 85,396 | 644 | 2,649 | 88,689 | 75,018 |
| 1961 r | 95,036 | 431 | 2,861 | 98,328 | 75, 835 |
| 1962 | 101,286 | 305 | 2,594 | 104,185 | 75,152 |
| Manitoba................................. . 1960 | 24,778 | 1,270 | - | 26,048 | 487 r |
| $1961{ }^{\text {r }}$ | 25,278 | 1,083 | - | 26,361 | 551 |
| 1962 | 25,605 | 829 | - | 26,434 | 631 |
| Saskatchewan.............................. 1960 | 28,012 | 2,465 | - | 30,477 | 292 |
| $1961{ }^{\text {r }}$ | 28,387 | 2,230 | - | 30,617 | 30 |
| 1962 | 27,256 | 1,827 | - | 29,083 | - |
| Alberta.................................... 1960 | 37,338 | 2,250 | 7 | 39,595 | 1,808 |
| 1961 r | 40,917 | 1,866 | 7 | 42,790 | 1,831 |
| 1962 | 38,928 | 1,642 | 5 | 40,575 | 1,735 |
| British Columbia. . . . . . . . . . . . . . . . . . . 1960 |  | 416 | - | 5,476 | 969 \% |
|  | 5,880 | 360 | - | 6,240 | 1,168 |
| 1962 | 7,215 | 250 | - | 7,465 | 979 |
| Totals. . . . . . . . . . . . . . . . . . . . . 1960 | 320,403 | 9,527 | 2,965 | 332,895 | 122,7452 |
| 1961 r | 352,133 | 8,284 | 3,869 | 364,286 | 131,408 ${ }^{2}$ |
| 1962 | 361,498 | 6,751 | 3,952 | 372,201 | 130,178 ${ }^{2}$ |

${ }^{1}$ Factory-made cheese includes cheddar and other cheese made from whole milk and cream.
${ }^{2}$ Amounts for "other cheese" are included in Quebec, Ontario and Alberta figures but, as fewer than three firms reported in the other provinces, data cannot be included except in the Canada total.

The output of concentrated whole milk, normally only slightly in excess of domestic requirements, was 1.4 p.c. above those requirements in 1962 . Exports dropped off 13.8 p.c. from the 1961 total and per capita consumption increased 2.5 p.c. Skim milk powder production at $192,389,000 \mathrm{lb}$. was $20,640,000 \mathrm{lb}$. below the peak production in 1961. Exports declined from $53,090,000 \mathrm{lb}$. in 1961 to about $35,689,000 \mathrm{lb}$. in 1962 and domestic disappearance at $133,422,000 \mathrm{lb}$. in 1962, was 13.0 p.c. below the record high established the previous year.

## 23.-Production of Concentrated Milk Products, 1958-62

(Exclusive of Newfoundland)

| Product | 1958 | 1959 | 1960 | 1961 r | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | '000 lb. | '000 lb. | '000 lb. | '000 lb. | '000 lb. |
| Concentrated Whole Milk Products. | 361,884 | 362,984 | 404,325 | 393,805 | 363,605 |
| Condensed milk. | 14,194 | 14,553 | 14,420 | 14,814 | 16,338 287 |
| Evaporated milk | 305,267 | 302,697 | 316,950 | 321,994 | 287,395 23,310 |
| Whole milk powder......... | 19,713 21 | 20,872 21,163 | 45,829 20,178 | 25,622 22,474 | 24,306 |
| Partly skimmed evaporated | 21,1591 | 21,699 | 6,948 | 8,901 | 12,256 |

For footnote, see end of table.
23.-Production of Concentrated Milk Products, 1958-62-concluded

| Product | 1958 | 1959 | 1960 | 1961 r | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | '000 lb. | '000 lb. | '000 lb. | '000 lb. | '000 lb. |
| Concentrated Milk By-products. | 224,433 | 220,260 | 209,898 | 269,244 | 260,062 |
| Condensed skim milk.. | 3,444 | 3,814 | 2,602 | 1,918 | 1,822 |
| Evaporated skim milk | 10,028 | 7,662 | 2,769 | 6,210 | 5,816 |
| Skim milk powder. | 185,625 | 176,437 | 171,969 | 213,029 | 192,389 |
| Powdered buttermilk | 8,028 | 7,740 | 8,179 | 9,833 | 10,400 |
| Whey powder. | 12,820 | 16,599 | 11,037 | 19,730 | 18,152 |
| Casein. | 3,430 | 4,924 | 8,000 | 14,024 | 22,197 |
| Other milk by-products ${ }^{2}$. | 1,058 | 3,084 | 5,342 | 4,500 | 9,286 |
| Totals. | 586,317 | 583,244 | 614,223 | 663,049 | 623,667 |

[^128]21.-Production of Ice Cream Mix, by Province, 1960-62

| Province | 1960 | 1961 | 1962 | Province | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Newfoundland. <br> P. E. Island. <br> Nova Scotia <br> New Brunswick <br> Quebec. <br> Ontario. | '000 gal. | '000 gal. | '000 gal. |  | '000 gal. | '000 gal. | '000 gal. |
|  | $\begin{array}{r} 126 \\ 876 \\ 840 \\ 5,022 \\ 7,677 \end{array}$ | $\because 124$8835485,2667,878 | $\begin{array}{r} 133 \\ 910 \\ 555 \\ \mathbf{5 , 2 4 6} \\ 8,121 \end{array}$ | Manitoba... | 1,063 | 1,156 | 1,212 |
|  |  |  |  | Saskatchewan | 1,139 | $1,189 \mathrm{r}$ | 1,160 |
|  |  |  |  | Alberta... | 1,862 | 2,016 | 2,054 |
|  |  |  |  | British Columbi | 2,175 | 2,361 | 2,398 |
|  |  |  |  | To | 20,480 | 21,421 ${ }^{\text {r }}$ | 21,789 |

The estimated consumption of fluid milk and cream, on a milk basis, amounted to $5,397,413,000$ pt. in 1962 , which was $87,322,000$ pt. higher than the 1961 estimate. Daily average consumption per capita was 0.82 pt., the same as in 1961. The estimated consumption of milk and cream is given by province in Table 25 and the domestic disappearance of all dairy products in Table 26.
25.-Estimated Consumption of Milk and Cream (expressed as Milk), by Province, 1960-62

| 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............... . 1960 | 323,755 | 0.98 |
|  |  |  | 1961 | 315,061 | 0.94 |
| Prince Edward Island.... ${ }_{1961}^{1960}$ | 38,674 39,440 | 1.03 | 1962 | 315,817 | 0.93 |
| 1962 | 38,663 | 1.00 | Saskatchewan........... 1960 | 400,023 | 1.20 |
|  |  |  | 1961 | 398,485 | 1.18 |
| Nova Scotia............. ${ }_{1961}^{1960}$ | 187,391 | 0.71 | 1962 | 392,986 | 1.16 |
| 1962 | 185,702 187,616 | 0.69 0.69 | Alberta................. . 1960 |  |  |
|  |  |  | Alberta................. 1961 | 398,687 | 0.82 |
| New Brunswick. ......... 1960 | 153,442 | 0.70 | 1962 | 405,032 | 0.81 |
| 1961 | 155,546 | 0.71 |  |  |  |
| 1962 | 159,083 | 0.72 | British Columbia....... 1960 | 393,636 | 0.67 |
| Quebec.................. . 1960 | 1,557,857 | 0.83 | 1961 1962 | 396,286 402,220 | 0.67 0.66 |
| Quebec................. 1961 | 1,577,542 | 0.82 | 1962 |  |  |
| 1962 | 1,600,841 | 0.82 |  |  |  |
| Ontario................... . 1960 | 1,838,337 | 0.83 | Totals............... 1960 | 5,289,860 | 0.83 |
| 1961 | 1,843,342 | 0.81 | 1961 | 5,310,091 | 0.82 |
| 1962 | 1,895,155 | 0.82 | 1962 | 5,397,413 | 0.82 |

26.-Domestic Disappearance of Dairy Products, 1960-62

| Product | 1960 |  | 1961 r |  | 1962 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Total | $\begin{gathered} \text { Per } \\ \text { Capita } \end{gathered}$ | Total | $\begin{gathered} \mathrm{Per} \\ \text { Capita } \end{gathered}$ | Total | $\underset{\text { Capita }}{\text { Per }}$ |
|  | '000 lb. | lb . | '000 lb. | lb . | '000 lb. | lb. |
| Milk and Cream | 6,823,921 | 393.20 | 6,850,017 | 385.27 | 6,962,670 | 384.68 |
| Milk | 5,762,614 | 332.05 | 5,784,201 | 325.32 | 5,861,685 | 323.85 |
| Cream as milk | 1,061,307 | 61.15 | 1,065,816 | 59.95 | 1,100,985 | 60.83 |
| Cream as product | 208,425 | 12.01 | 210,390 | 11.83 | 220,333 | 12.17 |
| Butter. | 302,395 | 16.98 | 300,316 | 16.47 | 331,276 | 17.8! |
| Creamery | 289,889 | 16.27 | 288,309 | 15.81 | 320,442 | 17.26 |
| Dairy. | 9,527 | 0.54 | 8,284 | 0.46 | 6,751 | 0.36 |
| Whey. | 2,979 | 0.17 | 3,723 | 0.20 | 4,083 | 0.22 |
| Cheese. | 128,523 | 7.21 | 136,123 | 7.47 | 149,854 | 8.07 |
| Cheddar | 50,597 | 2.84 | 52,624 | 2.89 | 60,633 | 3.27 |
| Process. | 55,176 | 3.10 | 57,467 | 3.15 | 64,310 | 3.46 |
| Other | 22,750 | 1.27 | 26,032 | 1.43 | 24,911 | 1.34 |
| Concentrated Whole Milk Products ${ }^{\text {2 }}$. | 359,548 | 20.18 | 349,883 | 19.18 | 358,499 | 19.30 |
| Evaporated | 314,735 | 17.67 | 300,715 | 16.49 | 302,132 | 16.27 |
| Condensed. | 14,253 | 0.80 | 14,735 | 0.81 | 16,107 | 0.87 |
| Powdered | 4,899 | 0.28 | 3,278 | 0.18 | 2,820 | 0.15 |
| Concentrated Milk By-products ${ }^{3}$. . . . . | 159,289 | 8.94 | 200,605 | 11.00 | 189,329 | 10.20 |
| Evaporated | 2,767 | 0.16 | 6,227 | 0.34 | 5,814 | 0.31 |
| Condensed. | 2,562 | 0.14 | 1,979 | 0.11 | 1,840 | 0.10 |
| Powdered | 122,749 | 6.89 | 153,277 | 8.40 | 133,422 | 7.18 |
| All Dairy Products in Terms of Milk- |  |  |  |  |  |  |
| Butter | 7,006,335 | 393.30 | 6,910,277 |  | , 656,316 |  |
| Cheese ....... | 1, $23.51,317$ | 70.24 46.88 | $\begin{aligned} 1,320,410 \\ 802,922 \end{aligned}$ | 72.40 44.02 | 1,451,395 | 78.16 44.02 |
| Concentrated | 835,137 | 46.88 |  |  |  |  |
| Grand Totals ${ }^{4}$ | 16,613,030 | 942.71 | 16,563,643 | 917.87 | 17,413,673 | 947.47 |

[^129]
## Subsection 6.-Fruits and Vegetables

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 rather than in the predominantly tree-fruit producing area of the Okanagan 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 lands in these areas. Individuals who harvest the wild berries may undertake to burn the land from time to time for weed control and to effect pruning, dusting is often carried out to control insects, and bees are sometimes introduced to achieve better pollination. A large percentage of the crop is frozen and exported. Some blueberries are picked for sale in other provinces but no statistics of this trade are available. 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.

Canning and processing industries have developed in the fruit growing districts and, although the importance of the processing market varies with different fruits, it provides a valuable outlet for substantial proportions of most Canadian-grown fruit crops.

Tables 27 and 28 show the estimated commercial production of fruit, by kind, for the years 1960-62 and by province for 1957-62.
27.-Estimated Commercial Production and Farm Value of Fruit, 1960-62

| Kind of Fruit and Year | Quantity | Weight | Farm Value | Kind of Fruit and Year | Quantity | Weight | Farm Value |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | '000 bu. | '000 lb. | \$'000 |  | '000 bu. | '000 lb. | \$'000 |
| Apples- |  |  |  | Cherries (sour)- |  |  |  |
| 1960... | 14,914 | 671,130 | 23,147 | 1960........ | 254 | 12,700 | 1,326 |
| 1961. | 16,521 | 743,445 | 23,077 | 1961. | 526 | 26,300 | 2,307 |
|  | 18,069 | 813,115 | . | 1962. |  | 10,80 | . |
| Pears- |  |  |  | Strawberries- | '000 qt. |  |  |
| 1960. | 1,528 | 76,400 | 3,209 | 1960. | 26,114 | 33,880 | 5,734 |
| 1961. | 1,477 | 73,850 | 3,101 | 1961. | 23,022 | 30,112 | 5,318 |
| 1962. | 1,681 | 84,050 | .. | 1962. | 20,768 | 27,198 | .. |
| Plums and Prunes- |  |  |  | Raspberries- |  |  |  |
| 1960..... | 467 | 23,350 | 970 | 1960 | 11,899 | 16,760 | 3,126 |
| 1961. | 578 | 28,900 | 1,257 | 1961. | 9,469 | 13,103 | 2,587 |
| 1962 | 412 | 20,600 | .. | 1962. | 8,048 | 11,320 | .. |
| Peaches- |  |  |  | Loganberries- | '000 lb. |  |  |
| 1960. | 2,362 | 118,100 | 6,137 | 1960. | 1,095 | 1,095 | 163 |
| 1961. | 3,074 | 153,700 | 6,674 | 1961. | 1,203 | 1,203 | 167 |
| 1962. | 2,348 | 117,400 | , | 1962 | 1,112 | 1,112 | .. |
| Apricots- |  |  |  | Grapes- |  |  |  |
| 1960..... | 305 | 15,270 |  | 1960.... | 113,167 | 113,167 | 4,899 |
| 1961.. | 265 | 13,250 | 626 | 1961. | 85,237 | 85,237 | 4,325 |
| 1962 | 306 | 15,300 | .. | 1962 | 88,592 | 88,592 | .. |
| Cherries (sweet)- |  |  |  | Blueberries- |  |  |  |
| 1960.. | 201 | 10,050 | 1,893 | 1960. | 19,604 | 19,604 | 2,383 |
| 1961. | 306 | 15,300 | 2,403 | 1961. | 18,063 | 18,063 | 1,823 |
| 1962. | 423 | 21,150 | .. | 1962. | 18,219 | 18,219 | $\therefore$ |

## 28.-Value of Commercial Fruit Produced, by Province, 1959-61 with Average for 1955-59

(Farm value for unpacked fruit)

| Province | $\begin{aligned} & \text { Average } \\ & 1955-59 \end{aligned}$ | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$'000 |
| Newioundland..................................... | 81 | 105 | 197 | 235 |
| Prince Edward Island.............................. | 259 | 221 | 394 | 396 |
| Nova Scotia. | 2,255 | 2,404 | 2,913 | 4,154 |
| New Brunswick........................................ | 1,062 | 1,124 | 1,370 | 1,404 |
| Quebec............................................... | 5,972 | 6,924 | 6,930 | 5,769 |
| Ontario.............................................. | 19,096 | 19,132 | 24,150 | 24,088 |
| British Columbia..................................... | 12,416 | 13,554 | 17,877 | 17,721 |
| Totals................. | 41,141 | 43,464 | 53,831 | 53,767 |

Vegetables.-Estimates of acreage and production of commercial vegetables in Canada are prepared for all provinces except Newfoundland, Prince Edward Island and Saskatchewan. The Province of 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.
29.-Estimated Commercial Acreage of Vegetables, by Province, 1960-62, with Average for 1955-59

| Province | Av. 1955-59 | 1960 r | 1961 r | 1962p |
| :---: | :---: | :---: | :---: | :---: |
|  | acres | acres | acres | acres |
| Nova Scotial. . | 4,082 | 2,600 | 2,850 | 2,740 |
| New Brunswick ${ }^{\mathbf{1}}$. . | 1,654 | 5,200 | 5,920 | 8,808 |
| Quebec. | 57,404 | 63,660 | 64,890 | 68,620 |
| Ontario. | 107,566 | 108,800 | 106,346 | 99,850 |
| Manitoba ${ }^{2}$. | 4,148 | 3,330 | 3,530 | 3,530 |
| Alberta ${ }^{2}$. | 11,846 | 15,280 | 16,060 | 16,050 |
| British Columbia. | 15,776 | 15,140 | 16,950 | 16,820 |
| Totals... | 202,476 | 214,010 | 216,546 | 216,418 |

[^130]
## 30.-Estimated Commercial Acreage and Production of Vegetables, 1959-61, with Average for 1955-59

| Vegetable | Av. 1955-59 = |  | 1959 r |  | 1960 ${ }^{\text {r }}$ |  | 1961 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Area | Production | Area | Production | Area | Production | Area | Production |
|  | acres | '000 lb. | acres | '000 lb. | acres | '000 lb. | acres | '000 lb. |
| Asparagus... | 3,800 | 7,491 | 3,930 | 7,564 | 3,730 | 6,967 | 3,750 | 6,992 |
| Beans ${ }^{\text {a }}$ | 10,740 | 42,777 | 11,170 | 37,529 | 11,650 | 43,157 | 15,950 | 60,631 |
| Beets...... | 3,634 | 52,533 | 3,610 | 58,061 | 2,550 | 44,606 | 2,690 | 49,022 |
| Cabbage... | 6,912 | 121,768 | 7,450 | 120, 163 | 6,810 | 127,136 | 6,700 | 128,379 |
| Carrots. | 10,372 | 195,813 | 12,510 | 245,315 | 11,350 | 283,416 | 11,770 | 274,512 |
| Cauliflower | 2,502 | 25,157 | 2,830 | 25,265 | 2,830 | 30,240 | 2,720 | 27,260 |
| Celery... | 2,008 | 46,667 | 1,380 | 42,964 | 1,220 | 38,968 | 1,290 | 45,805 |
| Corn..... | 48,318 | 280,912 | 54,070 | 317,161 | 55,740 | 330,974 | 58,410 | 388,144 |
| Lettuce. | 5,346 | 56,844 | 6,110 | 57,364 | 5,680 | 67,460 | 4,790 | 53,766 |
| Onions. | 6,298 | 116,977 | 7,470 | 142,785 | 7,700 | 173,491 | 7,950 | 154,234 |
| Peas ${ }^{2}$ | 49,340 | 109,147 | 40,230 | 89,696 | 45,670 | 100,781 | 48,850 | 111,696 |
| Spinach. | 1,142 | 12,629 | 1,230 | 14,970 | 1,210 | 12,485 | 1,120 | 11,570 |
| Tomatoes.... | 47,796 | 691,454 | 41,230 | 738,903 | 39,340 | 867,658 | 32,480 | 786,612 |

${ }^{1}$ Estimates apply only to that portion of the crop grown for processing in Quebec, Ontario, Manitoba and Alberta in 1958; in Ontario, Manitoba and Alberta in 1959, 1960 and 1961.

2 Estimates apply only to that portion of the crop grown for processing in all provinces for which estimates are made except British Columbia.

## Subsection 7.-Other Principal Farm Products

Tobacco.-The chief tobacco growing area of Canada is located in southern Ontario in the counties adjacent to Lake Erie; most of the cigarette tobacco comes from this district. In Ontario as a whole, 122,287 acres of flue-cured or Bright Virginia type tobacco were harvested in 1961. This is the most important type grown in Canada although dark air-cured and fire-cured tobacco as well as cigar tobacco are grown on a limited scale. The only other important production comes from Quebec. In 1961, 5,439 acres of flue-cured tobacco, 4,418 acres of cigar tobacco and 1,224 acres of pipe tobacco were harvested in that province. Recently, small acreages have been successfully grown in Prince Edward Island, Nova Scotia and Manitoba.

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 . The figure for 1961 was 2,012.

31.-Acreage, Production and Value of the Commercial Crop of Leaf Tobacco, by Province, 1957-61

| Year | Quebec |  |  | Ontario |  |  | Other Provinces |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Har- vested Area | Production | Value | Harvested Area | Production | Value | Harvested Area | Production | Value |
|  | acres | '000 lb. | 5 | acres | '000 lb. | \$ | acres | '000 lb. | \$ |
|  | 9,786 | 8,333 | 2,854,000 | 126,961 | 156,488 | 75,716,000 | 40 | 44 | 19,000 |
| 1958..... | 9,517 | 8,901 | 3,255,000 | 124,557 | 188,364 | 86, 333,000 | 52 | 37 | 15,000 |
| 1959. | 10,275 | 11,736 | 4,722,000 | 117,801 | 158,120 | 85,660,000 | 57 | 48 | 21,000 |
| 1960. | 11,598 | 13,914 | 5,399,000 | 124,321 | 200, 201 | 109,272,000 | 43 | 52 | 28,000 |
| 1981. | 11,081 | 11,900 | 4,156,000 | 126,718 | 197,664 | 101,059,000 | 118 | 157 | 80,000 |

## 32.-Acreage, Production and Value of the Commercial Crop of Leaf Tobacco, by Main Type, 1957-61


${ }^{1}$ Includes other types not specified.
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 largely 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 Sugar Shipments 1955-62

| Year | Sugar Beets |  |  |  |  | Beet Sugar <br> (All Types) |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Harvested Area | $\begin{aligned} & \text { Yield } \\ & \text { per } \\ & \text { Acre } \end{aligned}$ | Total Yield | Average Price per Ton | Total Value | Shipments | Value |
|  | acres | tons | tons | \$ | \$'000 | '000 lb. | \$'000 |
| 1955. | 81,908 | 11.98 | 981,014 | 13.42 | 13,170 | 239,576 | 20,376 |
| 1956. | 78,786 | 11.33 | 892,872 | 17.33 | 15,470 | 274,807 | 23,969 |
| 1957. | 83,743 | 12.58 | 1,053,564 | 13.24 | 13,948 | 243,246 | 24,486 |
| 1958.. | 97,800r | $13.55{ }^{\text {r }}$ | 1,324,870r | 14.47 | 19,177 ${ }^{\text {r }}$ | 300,296 | 27,213 |
| 1959. | 90,453 | 13.70 | 1,239,518 | 12.78 | 15,842 | 307,380 | 23,155 |
| 1960... | $86,128^{\text {r }}$ | 12.76r | 1,098,673 | 14.36 | 15,778 | 298,111 | 21,185 |
| 1961...... | 84,927r | 13.02 | 1,105,708r | 13.13 | 14,515 | 283,675 | 21,535 |
| 1962..... | 85,019 | 12.69 | 1,078,563 | . |  | . | . |

Eggs.-The net production of eggs in 1962 amounted to $434,200,000$ doz., $4,277,000$ doz. more than in 1961. The number of layers was about the same in both years but the rate of lay was 197 eggs per layer in 1961 and 199 per layer in 1962. The farm value of eggs to producers was slightly lower in 1962 than in the previous year, being 35.2 cents compared with 35.7 cents. According to hatchery statistics compiled by the Canada Department of Agriculture, 7.1 p.c. fewer egg-production type chicks were hatched in 1962 than in 1961 and the broiler chick hatch was 4.8 p.c. lower; this was the first time in the history of the broiler industry that there was a year-to-year decrease in the hatch of broiler chicks. On the other hand, the number of broiler-type turkey poults hatched was 14.1 p.c. higher than in 1961, although the hatch of turkeys for mature weights was 9.4 p.c. lower.

## 34.-Production, Utilization and Value of Farm Eggs, by Province, 1961 and 1962

| Province | 1961 |  |  |  | 1962 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Average Number of Layers | Average <br> Produc- <br> tion per 100 <br> Layers | Net Eggs Laid ${ }^{1}$ | Total Value (Sold and Used) | Average Number of Layers | Average Production per 100 <br> Layers | Net Eggs Laid ${ }^{1}$ | Total Value (Sold and Used) |
|  | '000 | No. | '000 doz. | \$'000 | '000 | No. | '000 doz. | \$'000 |
| Prince Edward Island. | ${ }^{292}$ | 17,109 | 4,156 | 1,364 | - 270 | 17,931 | 3,975 17 |  |
| Nova Scotia... | 1,123 | 19,923 | 18,513 | 7,854 | 1,052 | 20,379 | 17,718 | 7,288 |
| New Brunswick | 545 | 18,598 | 8,373 | 3,712 | 570 | 19,522 | 9,154 | 3,956 |
| Quebec. | 4,112 | 19,695 | 66,785 | 26,838 | 4,362 | 19,678 | 70,844 | 27,319 |
| Ontario | 10,428 | 20,822 | 179,516 | 65,547 | 10,604 | 20,808 | 182,384 | 64,767 |
| Manitoba | 2,355 | 18,394 | 35,840 | 10,079 | 2,355 | 18,992 | 36,998 | 10,424 |
| Saskatchewan. | 2,272 | 17,351 | 32,435 | 8,846 | 2,086 | 17,711 | 30,351 | 8,747 |
| Alberta | 2,793 | 18,408 | 42,387 | 13,632 | 2,566 | 18,669 | 39,370 | 12,951 |
| British Columbia | 2,454 | 20,656 | 41,918 | 15,468 | 2,540 | 20,667 | 43,406 | 15,907 |
| Totals | 26,374 | 19,743 | 429,923 | 153,340 | 26,405 | 19,921 | 434,200 | 152,686 |

${ }^{1}$ Total laid less loss.
Wool.-Canada's wool requirements are met largely by imports which amounted to $54,308,000 \mathrm{lb}$. (greasy basis) in 1962 and $54,430,000 \mathrm{lb}$. in 1961 . Exports amounted to $3,972,000 \mathrm{lb}$. in 1962 and $5,067,000 \mathrm{lb}$. in 1961. The apparent domestic consumption of wool shown in Table 35 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. Differences in wool utilization from year to year are therefore probably less marked than is indicated by these figures.
35.-Production and Apparent Consumption of Wool, 1958-62

| Item | 1958 r | 1959 r | 1960 ${ }^{\text {r }}$ | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Shorn Wool- |  |  |  |  |  |
| Yield per fleece. . . . . . . . . . . . . . . . . . . . . . . . . lb. | 7.3 | 7.6 | 7.7 | 7.8 | 8.0 |
| Total yield shorn.................................. . 000 lb lib. | 6,107 | 6,256 | 6,370 | 6,169 | 5,808 |
| Price per pound ${ }^{1} \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots .$. | 49.7 | 45.9 | 47.9 | 50.2 | 48.8 |
| Total value of shorn wool.......................... $\$^{\prime} 000$ | 3,038 | 2,869 | 3,052 | 3,094 | 2,833 |
| Total pulled wool................................... . 000 lb l | 1,279 | 1,487 | 1,387 | 1,287 | 1,361 |
| Total wool production........................... " | 7,386 | 7,743 | 7,757 | 7,456 | 7,169 |
| Apparent consumption........................... " | 45,593 | 54,233 | 53,581 | 56,819 | 57,505 |

[^131]Honey.-Honey statistics have been compiled on an all-Canada basis since 1924; the $45,145,000-\mathrm{lb}$. production of 1948 was the largest recorded crop. Output in 1961 was $35,030,000 \mathrm{lb}$. and in $1962,30,491,000 \mathrm{lb}$. The decrease in 1962 was attributed to unfavourable weather conditions in the Maritimes and in Western Canada. The number of active beekeepers was considerably below the 1961 total. Bees are kept in some of the fruit growing districts mainly for purposes of pollination.

Honey is produced commercially in all provinces except Newfoundland, about 35 p.c. of the output being accounted for by Ontario.

To facilitate storage, shipment and uniformity of quality, considerable quantities of Canadian honey are pasteurized. Beekeepers' marketing co-operatives are active in several provinces.
36.-Honey and Beeswax Production 1960-62, with Average for 1955-59

| Item | Av. 1955-59 ${ }^{\text {r }}$ | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: |
| Honey - |  |  |  |  |
| Total production..................................... 000 lb lb. | 28,078 | 32,224 | 35,030 | 30,491 |
|  | - 8 851 |  | 5, 104 |  |
|  | 4,961 18 | 5,179 16 | 5,351 15 | $\cdots$ |
| Beeswax- |  |  |  |  |
| Production............................................. ${ }^{\text {'000 lb. }}$ | 412 | 479 | 520 |  |
| Value................................................... §'000 | 204 | 215 | 235 | .. |
| Total Value, Honey and Beeswax................ \$’000 | 5,165 | 5,394 | 5,586 | .. |
| Beekeepers.......................................... No. | 14,186 | 12,570 | 11,663 | 10,520 |
| Bee colonies........................................... | 328,540 | 327,340 | 336,910 | 341,730 |

37.-Honey Production, by Province, 1960-62, with Average for 1955-59

| Province | Av. 1955-59 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: |
|  | '000 lb. | '000 lb. | '000 lb. | '000 lb. |
| Prince Edward Island. | 68 | 65 | 67 | 32 |
| Nova Scotia.. | 161 | 146 | 249 | 132 |
| New Brunswick | 87 | 86 | 85 | 77 |
| Quebec. . | 3,349 | 2,284 | 2,971 | 3,185 |
| Ontario... | 8,281 | 9,232 | 9,360 | 10,922 |
| Manitoba. | 5,297 | 6,380 | 6,670 | 5,051 |
| Saskatchewan. | 3,664 | 4,515 | 3,973 | 2,864 |
| Alberta. | 5,693 | 7,576 | 9,580 | 6,932 |
| British Columbia | 1,478 | 1,940 | 2,075 | 1,296 |
| Totals. | 28,078 | 32,224 | 35,030 | 30,491 |

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 Quebec, 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.
38.-Estimated Production of Maple Sugar and Maple Syrup, by Province, 1960-63, with Averages for 1955-59

| Province and Year | Maple Sugar |  |  | Maple Syrup |  |  | Total Value, Sugar and Syrup |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quantity | Average Price per lb. | Value | Quantity | Average Price per gal. | Value |  |
|  | lb. | cts. | \$ | gal. | \$ | \$ | \$ |
| Nova Scotis- |  |  |  |  |  |  |  |
| Av. $1955-59 . . . .$. | 13,000 14,000 | 63.6 64.0 | 8,000 9,000 | 5,000 3,000 | 5.54 | 27,000 17 | 35,000 26,000 |
|  | 14,000 | 63.0 | 9,000 | 4,000 | 5.41 | 22,000 | 31,000 |
| 1962 | 7,000 | 63.0 | 4,000 | 3,000 | 5.46 | 16,000 | 20,000 |
| 1963. | 11,000 | .. | .. | 4,000 | .. | .. | .. |
| New Brunswick- |  |  |  |  |  |  |  |
| Av. 1955-59.. | 69,000 | 57.4 | 40,000 | 12,000 | 4.98 | 62,000 | 102,000 |
| 1960. | 53,000 | 68.0 | 36,000 | 10,000 | 5.29 | 53,000 | 89,000 |
| 1961. | 42,000 | 59.0 | 25,000 | 13,000 | 5.33 | 69,000 | 94,000 |
| 1962. | 32,000 | 59.0 | 19,000 | 6,000 | 5.56 | 33,000 | 52,000 |
| 1963. | 32,000 | .. | .. | 8,000 | .. | .. | .. |
| Quebec $\sim$ |  |  |  |  |  |  |  |
| 1960...... | 310,000 | 47.1 | 146,000 | 2,253,000 | 3.86 | 8,697,000 | 8,843,000 |
| 1961. | 751,000 | 47.0 | 353,000 | 2,227,000 | 3.74 | 8,329,000 | 8,682,000 |
| 1962. | 695,000 | 49.1 | 341,000 | 2,426,000 | 3.69 | 8,952,000 | 9,293,000 |
| 1963. | 669,000 | .. | .. | 2,488,000 | .. | .. | .. |
| Ontario- |  |  |  |  |  |  |  |
| Av. 1955-59. 1960. | 14,000 13,000 | 58.3 63.0 | 8,000 8,000 | 267,000 250,000 | 4.73 5.21 | $1,261,000$ $1,302,000$ | $1,269,000$ $1,310,000$ |
| 1960 | 13,000 24,000 | 63.0 71.0 | 8,000 17,000 | 250,000 319,000 | 5.21 5.04 | $1,302,000$ $1,608,000$ | $1,310,000$ $1,625,000$ |
| 1962. | 16,000 | 65.0 | 10,000 | 311,000 | 5.08 | 1,579,000 | 1,589,000 |
| 1963. | 8,000 | .. | .. | 219,000 | .. | .. | .. |
| Totals-r |  |  |  |  |  |  |  |
| Av. 1955-59. | 658,000 | 47.3 | 311,000 | 2,410,000 | 3.79 | 9,137,000 | 9,448,000 |
| 1960. | 390,000 | 51.0 | 199,000 | 2,516,000 | 4.00 | 10,069,000 | 10,268,000 |
| 1961 | 831,000 | 48.6 | 404,000 | 2,563,000 | 3.91 | 10,028,000 | 10,432,000 |
| 1962 | 750,000 | 49.9 | 374,000 | 2,746,000 | 3.85 | 10,580,000 | 10,954,000 |
| 1963. | 720,000 | .. | .. | 2,719,000 | .. | .. |  |

Nursery Stock.-Statistics concerning the nursery industry in Canada for recent years are presented in Tables 39 and 40. 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 300 nurseries reported shipments in 1961. Wholesale value of nursery stock shipments of fruit trees, etc., amounted to $\$ 549,288$ in 1961 compared with $\$ 463,289$ in 1960 , and of ornamental species to $\$ 3,927,979$ in 1961 and $\$ 3,637,535$ in the previous year.
39.-Nursery Stock Shipments (Domestic), by Type, 1957-61

| Classification | 1957 | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Fruit Trees, etc.- | No. | No. | No. | No. | No. |
| Apple species........................ | 309,953 | 420,588 | 436,845 | 300,729 | 378,093 |
| Tender tree-fruit species.............. | 300,817 | 275,542 | 314,265 | 256,185 | 264,197 |
| Small fruit species. | 4,613,054 | 4,419,675 | 4,446,224 | 5,370,022 | 5,502,671 |
| Other species.. | 544,127 | 501,285 | 371,547 | 219,527 | 338,375 |
| Ornamental Species- |  |  |  |  |  |
| Rose bushes | 595,000 | 460,879 | 592,113 | 2,001,121 | 1,440,440 |
| Other ornamental shrubs and deciduous trees. | 4,185,953 | 3,548, 277 | 4,113,190 |  |  |
| Evergreen trees. ..................... | 1,362,406 | 1,329,200 | 1,631,726 | 1,292,029 | 1,759,369 |
| Ornamental climbe | -46,948 | 1,43,306 | 1,25,081 | 1,44,418 | 1,213,629 |
| Bulbs and tubers. | 5,061,270 | 3,783,225 | 10,315,900 | , | .. |
| Herbaceous perennials................ Hybrid teas on standards (roses)... | 890,595 | 785,748 . | 956,483 | ${ }^{\cdot} 6,167$ | ${ }^{\cdot}{ }_{29,009}$ |

40.-Acreage of Nursery Stock, by Province, 1959-61

| Province | 1959 |  | 1960 |  | 1961 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Fruit Species | Ornamental Species | Fruit Species | Ornamental Species | Fruit Species | Ornamental Species |
|  | acres | acres | acres | acres | acres | acres |
| Quebec ${ }^{1}$ | 256 | 779 2 | 67 480 | ${ }_{2} 168$ | 42 | 340 |
| Ontario ........... | 264 76 | 2,079 | 104 | 2,529 | ${ }_{93}$ | 3,250 |
| British Columbia. | 36 | 162 | 70 | 155 | 89 | 161 |
| Totals. | 632 | 3,472 | 721 | 3,382 | 738 | 4,350 |

${ }^{1}$ Includes the Maritime Provinces for which insufficient information was reported.
Greenhouse Operations.-Annual surveys have been made of greenhouse operations for 1955 and subsequent years. Data are 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 is 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.
41.-Greenhouse Operations, by Province, 1961, with Totals for 1957-61

| Province | Firms Reporting | Area |  |  | Value of Sales (Wholesale) |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Under Glass | Under Cloth | Open Field | Cut Flowers and Potted Plants | Vegetables | PlantsRooted Cuttings, etc., for Growing on | Total Sales |
|  | No. | sq. ft. | sq. ft. | acres | \$ | \$ | \$ | \$ |
| Newfoundland. | 4 | 33,870 | - | 0.7 | 1 | 1 | 1 | 1 |
| Prince Edward Island. | 2 | 4,400 |  | 0.5 | 41,953 | 1,925 | 9,864 | 53,742 |
| Nova Scotia.... | 36 | 476,385 | 14,750 | 42.7 | 496,070 | 110,447 | 16,415 | 622,932 |
| New Brunswick. | 23 | 170,285 | 8,600 | 21.5 | 285,642 |  | 13,399 | 299,041 |
| Quebec..... | 127 | 1,059,842 | 35,558 | 192.1 | 1,571,937 | 35,013 | 236,872 | 1,843,822 |
| Ontario. | 610 | 12,500,483 | 334,014 | 2,175.4 | 10,047,869 | 3,631,452 | 1,442,111 | 15,121,432 |
| Manitoba. | 28 | 200,840 | 7,410 | 68.8 | 160,885 | 1,734 | 100,095 | 262,714 |
| Saskatchewan... | 13 | 218,960 | 3,000 | 26.7 | 154,647 | 16,920 | 43,396 | 214,963 |
| Alberta. . | 50 | 1,694,470 | 26,800 | 77.1 | 1,480,973 | 144,624 | 269,282 | 1,894,879 |
| British Columbia. | 181 | 2,115,353 | 5,780 | 554.5 | 1,428,178 | 446,985 | 209,722 | 2,084,885 |
| Totals, 1961. | 1,074 | 18,474,888 | 435,912 | 3,160.0 | 15,668,154 | 4.389,100 | 2,341,156 | 22,398,410 |
| 1960. | 1,045 | 15,672,066 | 453,718 | 2,244.6 | 14,898,047 r | 4,015,284 | 2,502,170 | 21,416,501 ${ }^{\text {r }}$ |
| $1959 .$. | 1,191 | 15,788,177 | 590,372 | 1,928.4 | 16,948,269 | 3,421,308 | 2,191,411 | 22,560,988 |
| 1958. | 1,125 | 15,525,691 | 473,541 | 2,035.7 | 13,896,582 | 3,175,285 | 2,054,690 | 19,126,562 |
| 195\%.... | 1,269 | 15,441,256 | 422,621 | 1,815.2 | 13,393,838 | 3,116,221 | 1,922,208 | 18,432,267 |

${ }^{1}$ Included with Prince Edward Island.

## Subsection 8.-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 1962, certain
points should be considered. Western grain prices used in the construction of the index before Aug. 1, 1962 are final prices for all grains. For the remaining months of 1962, the western grain prices used in the index are initial prices. Subsequent participation payments made on the 1962 crops will be added to the prices currently used and the index revised upward accordingly.

## 42.-Average Index Numbers of Farm Prices of Agricultural Products, by Province, 1956-62, and Monthly Indexes for 1961 and 1962

( $1935-39=100$ )
Nots.-A description of this index, its coverage and the methods used will be found in DBS Quarterly Bulletin of Agricultural Statistics (Catalogue No. 21-003) for October-December 1946.


Monthly prices of grain and monthly prices of livestock are shown in DBS Quarterly Bulletin of Agricultural Statistics (Catalogue No. 21-003).
43.-Average Cash Prices per Bushel of Major Canadian Grains, Crop Years Ended July 31,
(Basis, in store Fort William-Port Arthur)

| Year Ended July 31- | Averages in Cents and Eighths per Bushel |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { Wheat, }{ }^{1,1} \\ & \text { No. } 1 \text { N. } \end{aligned}$ | Oats, 1 <br> No. 2 C.W. | Barley, ${ }^{1}$ No. 3 C.W. -6 Row | $\begin{gathered} \text { Rye, }{ }^{3} \\ \text { No. } 2 \text { C.W. } \end{gathered}$ | Flaxseed, ${ }^{3}$ No. 1 C.W. |
|  | cts. | cts. | cts. | cts. | cts. |
| 1953. | 185/6 | $80 / 3$ | 136/5 | 158/2 | 329 |
| 1954. | 186/2 | 73/2 | 109/7 | 99/1 | 283/6 |
| 1955. | 173 | 90/4 | 122/4 | 112/2 | 309/1 |
| 1956... | 174 | 83/5 | 114/3 | 110/1 | 360/1 |
| 1957.... | 168/1 | 80/6 | 116 | 119/7 | 298/4 |
| 1958.. | 162/3 | 76/3 | 111 | 106 | 303 |
| 1959.. | 166/2 | 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.. | 189/6 | 96/1 | 143/7 | 136/6 | 368/2 |

${ }^{1}$ Canadian Wheat Board daily fixed prices.
for the crop year $1952-53$ which are domestic sales only. ${ }^{2}$ International Wheat Agreement and domestic sales except
Winnipeg Grain Exchange daily closing cash quotations.
44.-Yearly Average Prices per 100 lb. of Canadian Livestock at Principal Markets, 1959-62

| Item | Toronto |  |  |  | Montreal |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1959 | 1960 | 1961 | 1962 | 1959 | 1960 | 1961 | 1962 |
|  | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ |
| Steers, good. | 25.10 | 22.65 | 22.75 | 25.75 | 24.67 | 22.95 | 22.80 | 26.15 |
| Steers, medium | 23.08 | 20.51 | 21.07 | 23.75 | 22.94 | 18.74 | 21.63 | 23.84 |
| Steers, common | 19.95 | 17.21 | 17.59 | 19.61 | 20.11 | 17.94 | 18.72 | 19.72 |
| Heifers, good. | 23.31 | 20.45 | 21.49 | 23.11 | 21.42 | 19.73 | 21.02 | 20.98 |
| Heifers, medium | 21.35 | 18.46 | 19.83 | 21.31 | 19.94 | 18.63 | 19.28 | 19.23 |
| Calves, fed, good | 25.24 | 22.69 | 23.17 | 24.45 | 20.64 | 20.92 | 21.10 | 21.36 |
| Cows, good. | 17.55 | 15.85 | 16.25 | 17.85 | 18.59 | 16.70 | 16.55 | 17.80 |
| Cows, medium | 16.37 | 14.80 | 15.05 | 16.20 | 16.90 | 15.42 | 15.40 | 16.39 |
| Bulls, good. | 20.31 | 17.65 | 19.12 | 19.60 | 20.23 | 19.16 | 19.14 | 19.75 |
| Feeder steers, good | 25.10 | 22.90 | 22.70 | 24.90 |  |  |  |  |
| Feeder steers, common | 21.28 | 19.14 | 18.47 | 21.94 | ${ }^{1}$ | 1 | ${ }^{1}$ | 1 |
| Calves, veal, good and choice. | 33.10 | 31.80 | 30.80 | 31.85 | 28.78 | 27.80 | 28.05 | 29.50 |
| Calves, veal, common and medium | 26.58 | 24.77 | 22.93 | 24.19 | 22.54 | 22.50 | 22.29 | 23.00 |
| Hogs, Grade B, dressed. | 23.80 | 23.75 | 27.30 | 28.60 | 23.90 | 24.55 | 27.65 | 28.15 |
| Lambs, good.... | 21.15 | 21.85 | 20.80 | 22.00 | 20.13 | 20.10 | 20.25 | 20.25 |
| Lambs, common. | 18.65 | 17.01 | 16.35 | 18.21 | 16.52 | 15.94 | 17.74 | 17.24 |
| Sheep, good. | 9.11 | 9.12 | 9.02 | 9.44 | 9.11 | 8.95 | 9.66 | 8.82 |
|  | Winnipeg |  |  |  | Edmonton |  |  |  |
|  | 1959 | 1960 | 1961 | 1962 | 1959 | 1960 | 1961 | 1962 |
|  | \$ | \$ | \$ | \$ | \$ | \$ | \$ | $\delta$ |
| Steers, good. | 23.85 | 21.70 | 21.40 | 24.85 | 22.67 | 20.46 | 20.70 | 23.70 |
| Steers, medium | 22.20 | 19.85 | 20.24 | 22.88 | 20.94 | 18.85 | 19.62 | 22.11 |
| Steers, common | 19.25 | 16.66 | 18.11 | 18.58 | 18.48 | 16.73 | 17.43 | 19.36 |
| Heifers, good. | 22.26 | 20.22 | 19.85 | 22.75 | 20.66 | 18.56 | 18.80 | 21.94 |
| Heifers, medium | 19.38 | 18.16 | 18.26 | 20.77 | 18.97 | 17.10 | 17.69 | 19.80 |
| Calves, fed, good | 23.49 | 20.57 | 20.04 | 23.28 | 21.75 | 18.96 | 19.23 | 21.62 |
| Cows, good. | 17.05 | 15.50 | 15.50 | 17.20 | 15.49 | 14.40 | 14.65 |  |
| Cows, medium | 15.83 | 14.32 | 14.52 | 15.88 | 14.54 | 13.21 | 13.49 16.44 | 14.39 17.10 |
| Bulls, good.......... | 18.37 22.90 | 16.69 21.00 | 17.46 21.45 | 18.12 24.40 | 16.99 22.62 | 15.10 20.16 | 16.44 20.75 | $\xrightarrow{17.45}$ |
| Feeder steers, common | 19.21 | 18.07 | 19.05 | 21.62 | 18.79 | 17.37 | 17.85 | 20.01 |
| Stock cows and heifers, good. | 20.18 | 17.55 | 17.78 | 20.17 | 18.21 | 15.45 | 15.94 | 18.49 |
| Stock cows and heifers, common | 17.35 | 15.24 | 14.67 | 16.25 | 14.97 | 13.30 | 13.53 | ${ }^{18.65}$ |
| Calves, veal, good and choice. | 31.75 | 30.45 | 30.35 | 33.35 | 24.65 | 23.94 | 25.35 | ${ }_{27}^{27.15}$ |
| Calves, veal, common and medium | 25.63 | 24.05 | 24.23 | 26.69 | 20.15 | 19.84 |  |  |
| Hogs, Grade B, dressed. | 21.30 | 21.65 | 24.85 | 25.65 | 20.46 17.54 | 20.63 17.33 | 23.80 16.55 | 25.40 17.00 |
| Lambs, good.... | 17.80 16.08 | 17.70 15.77 | 17.00 15.03 | 17.95 15.44 | 17.54 15.51 | 17.33 15.51 | 16.55 15.28 | 15.48 |
| Lambs, common | 16.08 4.63 | 15.77 4.63 | 15.03 3.78 | 15.44 4.49 | 15.51 8.69 | 15.51 8.96 | 10.28 9.44 | $\begin{array}{r}17.58 \\ \hline\end{array}$ |

${ }^{1}$ No sales reported.

## Subsection 9.-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 13 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 45 represents the official estimates of yearly supplies of food moving into consumption, expressed in pounds per capita, for the years 1956-60 as an average for comparison with the years 1960 and 1961.

## 45.-Per Capita Supplies of Food Moving into Consumption 1960 and 1961, with Average for 1956-60

| Kind of Food and Weight Base | Pounds <br> per Capita per Annum |  |  | Percentages of 1956-60 Average |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Average 1956-60 | 1960 r | 1961 | 1960 | 1961 |
| Cereals.....................................Retail wt. | 157.2 | 153.7 | 151.9 | 97.8 | 96.6 |
| Flour (including rye flour) ${ }^{1}$ | 139.6 | 135.2 | 134.1 | 96.8 | 96.1 |
| Oatmeal and rolled oats......................... | 5.0 | 4.8 | 5.0 | 96.0 | 100.0 |
| Pot and pearl barley............................. | 0.2 | 0.2 | 0.2 | 100.0 | 100.0 |
| Corn meal and flour.......................... " | 1.2 | 1.7 | 1.8 | 141.7 | 150.0 100.0 |
| Rice........ | 4.5 | 4.5 | 3.5 | 100.0 | 77.8 |
| Breakfast food. .................................... . | 6.7 | 7.2 | 7.2 | 107.5 | 107.5 |
| Potatoes.......................................Retail wt. | 143.6 | 144.1 | 145.0 | 100.3 | 101.0 |
| Potatoes, white................................. "/ | 143.0 | 143.6 | 144.6 | 100.0 | 101.1 |
| Potatoes, sweet. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 0.5 | 0.5 | 0.4 | 100.0 | 80.0 |
| Sugars and Syrups.....................Sugar content | 104.9 | 104.3 | 104.7 | 99.4 | 99.8 |
| Sugar.....................................Refined wt. | 97.1 | 96.6 | 97.7 | 99.5 | 100.6 |
| Maple sugar. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Retail wt. | 0.7 | 0.8 | 1.2 | 114.3 | 171.4 |
| Other........................................... ${ }^{\text {a }}$. | 11.1 | 10.7 | 8.8 | 96.4 | 79.3 |
| Starch........................................Retall wt. | 1.6 | 1.6 | 1.6 | 100.0 | 100.0 |
| Pulses and Nuts............................... Retall wt. | 10.4 | 10.0 | 10.2 | 96.2 | 98.0 |
|  | 3.3 | 2.9 | 2.8 | 84.8 | 84.8 |
| Dry peas....................................... ${ }_{\text {. }}$ | 1.5 | 1.4 | 1.3 | 93.3 | 86.7 |
| Peanuts...................................... Shelled wt. | 3.0 | 3.0 | 3.2 | 100.0 | 106.7 |
|  | 1.2 | 1.2 | 1.2 | 100.0 | 100.0 |
|  |  |  |  |  | 113.8 |
| Frult................................................. <br> Tomatoes and Citrus Fruit- | 241.1 | 240.2 | 235.1 | 99.6 | 97.5 |
| Tomatoes, fresh............................ Retail wt. | 17.3 | 17.6 | 18.0 |  |  |
| Tomato products ${ }^{\text {a }}$......................Net wt. canned | 18.6 | 19.9 | 20.7 | 107.0 | 111.3 |
| Citrus fruit, fresh............................. Retail wt. | 33.3 | 31.7 | 30.3 | 95.2 | 91.0 |
| Citrus fruit juice........................ Net wt. canned | 15.5 | 16.3 | 16.0 | 105.2 | 103.2 |
| Fresh.................................. Retail wt. | 67.3 | 64.7 | 66.6 | 96.1 |  |
| Canned............................. Net wt. canned | 15.7 | 16.0 | 16.7 |  | 108.0 |
| Dried............................... Processed wt. | 5.7 | 5.4 | 16.7 4.4 | 104.7 | 106.4 77.2 |
| Juice.................................. Net wt. canned | 5.4 | 6.1 | 4.4 | 113.0 | 81.5 |
| Frozen. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Retail wt. | 2.0 | 2.3 | 2.4 | 115.0 | 120.0 |

[^132]
## 45.-Per Capita Supplies of Food Moving into Consumption 1960 and 1961, with Average for 1956-60-concluded

| Kind of Food and Weight Base | Pounds <br> per Capita per Annum |  |  | Percentages of $1956-60$ Average |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { Average } \\ & 1956-60 \end{aligned}$ | 1960 ${ }^{\text {r }}$ | 1961 | 1960 | 1961 |
| Vegetables. . . . . . . . . . . . . . . . . . . . . . . . . . .Fresh equiv. | 105.8 | 110.6 | 109.0 | 104.5 | 103.0 |
| Fresh- Cabbage and greens | 19.7 | 19.4 | 18.9 | 98.5 | 95.9 |
|  | 14.2 | 16.9 | 14.8 | 119.0 | 104.2 |
| Legumes.................................... " | 2.5 | 1.9 | 2.3 | 76.0 | 92.0 |
| Other. | 38.4 | 41.4 | 41.9 | 107.8 | 109.1 |
| Canned...........................................etail wt. | 18.5 2.4 | 17.2 3.9 | 17.2 3.6 | 93.0 162.5 | 93.0 150.0 |
| Olls and Fats. . . . . . . . . . . . . . . . . . . . . . Fat content | 43.5 | 44.9 | 44.1 | 103.2 | 101.1 |
| Margarine.....................................Retail wt. | 8.4 | 9.4 | 10.1 | 111.9 | 120.2 |
| Lard......................................... " | 7.9 | 7.2 | 7.2 | 91.1 | 91.1 |
| Shortening..................................... | 9.4 | 9.4 | 9.1 | 100.0 | 96.8 |
| Salad and cooking oil........................... | 3.3 | 4.1 | 4.2 | 124.2 | 127.3 |
| Butter. | 19.0 | 17.0 | 16.4 | 89.5 | 86.3 |
| Eggs. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Fresh equiv. | 36.9 | 36.7 | 35.6 | 99.5 | 96.5 |
| Meat............................... Carcass wt. | 142.5 | 146.6 | 143.1 | 102.9 | 100.4 |
| Pork..................................... " | 52.2 | 55.3 | 53.5 | 105.9 | 102.5 |
| Beef. | 69.0 | 69.2 | 68.8 | 100.3 | 100.0 |
| Veal. | 8.3 | 7.6 | 8.2 | 91.6 | 98.8 |
| Mutton and lamb | 2.8 | 3.2 | 3.7 | 114.3 | 132.1 |
| Offal....................................... . Edible wt. | 5.1 | 4.0 | 4.6 | 74.8 | 90.2 |
| Canned meat......................... Net wt. canned | 5.6 | 7.5 | 5.4 | 133.9 | 96.4 |
| Poultry and Fish . . . . . . . . . . . . . . . . . . . . . Edible wt. | 33.3 | 33.3 | 35.7 | 100.0 | 107.2 |
| Hens and chickens ${ }^{4} . . . . . . . . . . . . . . . . .$. . Eviscerated wt. | 21.4 | 20.9 | 23.2 | 97.7 | 108.4 |
| Other poultry........................ | 7.2 | 6.9 | 8.2 | 95.8 | 113.9 |
| Fish and shell fish, fresh and frozen.......... Edible "wt. | 7.4 | 7.7 | 7.6 | 104.1 | 102.7 |
| Fish, cured (smoked, salted, pickled)........ ${ }^{\text {a }}$. | 1.8 | 1.8 | 1.7 | 100.0 | 94.4 |
| Fish and shellish, canned................ . ${ }^{\text {Net wt. canned }}$ | 4.1 | 3.1 | 3.1 | 75.6 | 75.6 |
| Milk and Cheese............................ Milk solids | 65.4 | 66.4 | 67.1 | 101.5 | 102.6 |
| Cheddar cheese ${ }^{5} . . . . . . . . . . . . . . . . . . . . . . . . . . . .$. Retail wt. | 5.6 | 5.9 | 5.9 | 105.4 | 105.4 |
| Other cheese. . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 1.2 | 1.3 | 1.4 | 108.3 | 116.7 |
| Cottage cheese.................................. " | 1.2 | 1.3 | 1.3 | 108.3 | 108.3 |
| Evaporated whole milk. ...................... | 17.9 | 17.7 | 16.5 | 98.9 | 92.2 |
| Condensed whole milk. | 0.8 | 0.8 | 0.8 | 100.0 | 100.0 |
| Whole milk powder. | 0.3 | 0.3 | 0.2 | 100.0 | 66.7 |
| Condensed skim milk | 0.2 | 0.1 | 0.1 | 50.0 | 50.0 |
| Skim milk powder. .1.......................... | 6.2 | 6.9 | 8.4 | 111.3 | 135.5 |
| Evaporated skim milk...................... " | 0.5 37.1 | 0.2 39.1 | 0.3 39.9 | 40.0 105.4 | 60.0 107.5 |
| Powdered buttermilk. | 0.5 | 0.4 | 0.5 | 80.0 | 100.0 |
| Fluid whole milk ${ }^{6}$. | 395.6 | 393.2 | 385.3 | 99.4 | 97.4 |
| Beverages .................. Primary distribution wt. | 9.6 | 9.6 | 9.6 | 100.0 | 100.0 |
| Tea...................... " " ${ }^{\text {a }}$, | 2.6 | 2.4 | 2.4 | 92.3 | 92.3 103.4 |
| Coffee................................ Green beans | 8.7 | 9.0 | 9.0 | 103.4 | 103.4 |

[^133]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 46. All estimates are on a carcass-weight basis except canned meats, which are in terms of product.
46.-Supply, Distribution and Disappearance of Meats and Lard, 1956-62


For footnotes, see end of table, p. 476.
46.-Supply, Distribution and Disappearance of Meats and Lard, 1956-62-concluded

| Item | 1956 ${ }^{\text {r }}$ | 1957 r | 1958 r | 1959 r | 1960 ${ }^{\text {r }}$ | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Canned Meats-concluded |  |  |  |  |  |  |  |
|  | 11,442 | 5,241 18,844 | 6,314 | 6,843 127,274 | 24,357 | 9,623 | 16,487 |
|  |  | 18,844 | 13,833 |  | 48,473 | 42,775 | 29,476 |
|  | $\begin{array}{r} 85,930 \\ 5.3 \end{array}$ | $\begin{array}{r} 85,493 \\ 5.1 \end{array}$ | $\begin{array}{r} 95,818 \\ 5.6 \end{array}$ | $\begin{array}{r} 75,039 \\ 4.3 \end{array}$ | $\begin{array}{r} 133,612 \\ 7.5 \end{array}$ | $\begin{array}{r} 99,108 \\ 5.4 \end{array}$ | $\begin{array}{r} 97,860 \\ 5.3 \end{array}$ |
| Offal- <br> Estimated production. $\qquad$ '000 lb. On hand, Jan. $\qquad$ Imports for consumption. ........... |  |  |  |  |  |  |  |
|  | 91,204 | 90,498 | 93,864 | 100,788 | 95,849 | 95,390 | 95,501 |
|  | 5,042 | 5,146 | 5,867 | 4,946 | 5,251 | 5,042 | 5,906 |
|  | 2,360 | 3,150 | 758 | 2,311 | 5,063 | 3,426 | 3,997 |
| Total Supply...................... | 98,606 | 98,794 | 100,489 | 108,045 | 106,163 | 103,858 | 105,404 |
| Exports. | 6,831 | 5,587 | 11,590 | 15,397 | 14,434 | 14,146 | 20,410 |
| Used for canning | 2,285 | 1,598 | 2,039 | 1,628 | 1,673 | 2,059 | 1,818 |
| On hand, Dec. 31 | 5,146 | 5,867 | 4,946 | 5,251 | 5,042 | 5,906 | 5,067 |
| Domestic Disappearance........ '000 lb. Per Captia Dibappearance..... lb. | $\begin{array}{r} 84,344 \\ 5.2 \end{array}$ | 85,742 5.2 | 81,914 4.8 | 85,769 4.9 | 85,014 4.8 | 81,747 4.5 | 78,109 4.2 |
| Lard-s |  |  |  |  |  |  |  |
| Estimated production............. 000 lb . | 125,881 | 111, 992 | 140,599 | 181,680 | 142,193 | 130,191 |  |
| On hand, Jan. 1.................. | 5,707 15,301 | 4,866 | ${ }_{5}^{6,823}$ | 8,608 2,736 | 7,663 20,903 | 5,949 25,145 | 6,921 24,784 |
| Imports for consumption. ......... | 15,301 | 28,015 | 5,224 | 2,736 | 20,903 | 25,45 |  |
| Total Supply. | 146,889 | 144,873 | 152,646 | 193,024 | 170,759 | 161,285 | 155,220 |
| Exports. | 320 |  | 475 | 9,217 | 1,667 | 912 | 32 6.197 |
| On hand, Dec. 31................. | 4,866 | 6,823 | 8,608 | 7,663 | 5,949 |  |  |
| Domestic Disappearance........ '000 lb. Per Captta Disappearance..... lb. | 141,703 8.8 | 138,042 8.3 | 143,563 8.4 | 176,144 10.1 | 163,143 9.1 | 153,452 8.4 | $\begin{array}{r} 148,991 \end{array}$ |

${ }^{1}$ Quantity 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 slaughter.

## Section 5.-Agricultural Statistics of the Census

This Section presents a limited amount of information from the 1961 Census of Agriculture. Details are contained in Vol. V of the 1961 Census of Canada and in a number of special and advance census reports. A list of these publications and their prices is available from the DBS on request.

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.
47.-Number of Farms, by Province, Censuses of 1956 and 1961

| Province or Territory | $\begin{gathered} 1956 \\ (1956 \\ \text { Definition) } \end{gathered}$ | $\begin{gathered} 1961 \\ (1961 \\ \text { Definition) } \end{gathered}$ | $\underset{1956-61}{\text { P.C. Change }}$ | $\begin{gathered} 1961 \\ \text { Definition })^{1} \end{gathered}$ | $\underset{1956-61}{\text { P.C. Change }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. |  | No. |  |
| Newfoundland............. | 2,387 | 1,752 | -26.6 | 3,358 | +40.7 |
| Prince Edward Island. | 9,432 | 7,335 | -22.2 | 8,025 | -14.9 |
| Nova Scotis....... | 21,075 | 12,518 | -40.6 | 18,264 | -13.3 |
| New Brunswick. | 22,116 | 11,786 | -46.7 | 18,331 | -17.1 |
| Quebec.. | 122,617 | 95,777 | -21.9 | 108,865 | -11.2 |
| Ontario. | 140,602 | 121,333 | -13.7 | 127,492 | -9.3 |
| Manitoba. | 49,201 | 43,306 | -12.0 | 44,264 | -10.0 |
| Saskatchewan. | 103,391 | 93,924 | $-9.2$ | 94,402 | $-8.7$ |
| Alberta.. | 79,424 | 73,212 | - 7.8 | 74,661 | $-6.0$ |
| British Columbis. | 24,748 | 19,934 | -19.5 | 23,946 | -3.2 |
| Yukon and Northwest Territories. | 22 | 26 | +18.2 | 26 | +18.2 |
| Canada | 575,015 | 480,903 | -16.4 | 521,634 | - 9.3 |

${ }^{1}$ See text 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.c. from $73,597,448$ acres to $69,147,625$ acres. Decreases in total farm area in the six eastern 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 48 shows, only Manitoba, Alberta and British Columbia reported more farm land under crops in 1961 and in 1956 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 acreage under summer fallow for Canada as a whole.
48.-Use of Farm Land, by Province, Censuses of 1956 and 1961

| Item | Newfoundland |  | Prince Edward Island |  | Nova Scotia |  | New Brunswick |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1956 | 1961 | 1956 | 1961 | 1956 | 1961 | 1956 | 1961 |
|  | acres | acres | acres | acres | acres | acres | acres | acres |
| Improved Land. . . . . . . | 24,234 | 20,455 | 645,492 | 579,558 | 629,874 | 497,521 | 951,291 | 734,107 |
| Under crops ${ }^{\text {a }}$. $\ldots . . . . .$. | 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 | 127,468 | 252,686 | 200,047 |
| Summer fallow........ | ${ }^{92}$ | 145 | 2,463 | 2,532 | 2;649 | 2,654 | 13,560 | 5,648 |
| Other........ | 2,435 | 3,294 | 22,705 | 18,001 | 49,566 | 38,285 | 67,766 | 45,864 |
| Unimproved Land..... | 47,580 | 34,106 | 419,971 | 380,599 | 2,145,768 | 1,732,874 | 2,030,158 | 1,465,568 |
| Woodland. | 26,919 | 19,802 | 334,226 | 296,759 | 1,566,071 | 1,362,869 | 1,703,702 | 1,230,861 |
| Other. | 20,661 | 14,304 | 85,745 | 83,840 | 579,697 | 370,005 | 326,456 | 234,707 |
| Totals, Farm Area.. | 71,814 | 54,561 | 1,065,463 | 960,157 | 2,775,642 | 2,230,395 | 2,981,449 | 2,199,675 |

[^134]48.-Use of Farm Land, by Province, Censuses of 1956 and 1961-concluded

| Item | Quebec |  | Ontario |  | Manitoba |  | Saskatchewan |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1956 | 1961 | 1956 | 1961 | 1956 | 1961 | 1956 | 1961 |
|  | acres | acres | acres | acres | acres | acres | acres | acres |
| Improved Land . . . . . . . | 8,629,835 | 7,864,176 | 12,572,157 | 12,032,924 | 11,453, 783 | 11,963,994 | 40,506,000 | 43,117,813 |
| Under crops ${ }^{1} . . . . . . .$. | 5,549,524 | 5,213,302 | 8,219,407 | 7,990,358 | 7,686,013 | 7,688,728 | $24,480,501$ | 23,923,192 |
| Pasture (improved)... | 2,642,764 | 2,312,950 | 3,470,688 | 3,295,609 | 594,902 | 719,819 | 1,128,001 | 1,394,280 |
| Summer fallow........ | 67,082 370 | 46,344 | 333, 973 | 244,842 | 2,827,551 | 3,230,095 | 14,193,468 | 17,179,572 |
| Other. | 370,465 | 291,580 | 548,089 | 502, 115 | 345,317 | 325,352 | 704,030 | 620,769 |
| Unimproved Land | 7,280,293 | 6,334,316 | 7,307,489 | 6,545,583 | 6,478,034 | 6,205,957 | 22,287,979 | 21,297,705 |
| Woodland........ | 4,877,803 | 4,501,305 | 3,338,870 | 3,257,589 | 1,566,494 | 1,490,673 | 2,379,043 | 2,194,920 |
| Other. | 2,402,490 | 1,833, 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 | 19,879,616 | 18,578,507 | 17,931,817 | 18,169,951 | 62,793,979 | 61,415,518 |
|  | Alberta |  | British Columbia |  | $\begin{aligned} & \text { Yukon } \\ & \text { and } \\ & \text { N.W.T. } \end{aligned}$ |  | Canada |  |
|  | 1956 | 1961 | 1956 | 1961 | 1956 | 1961 | 1956 | 1961 |
|  | acres | acres | acres | acres | acres | acres | acres | acres |
| Improved Land | 23, 746,113 | 25,288,527 | 1,166,752 | 1,303,263 | 712 | 1,088 | 100,326,243 | 103,403,426 |
| Under crops ${ }^{1} . . . . . . . .$. | 14,850,171 | 15,614,839 | 689,749 | 788,896 | 230 | 526 | 62,944,176 | 62,435, 534 |
| Pasture (improved)... | 1,279,894 | 1,670,391 | 320,251 | 354,830 | 245 | 492 | 10,057,819 | 10,247,896 |
| Summer fallow... | 7,091,264 | 7,449,758 | 87,479 | 81,785 | 44 | 11 | 24,619,625 | 28,243,386 |
| Other.......... | 524,784 | 553,539 | 69,273 | 77,752 | 193 | 59 | 2,704,623 | 2,476,610 |
| Unimproved Land | 22,221,282 | 21,940,126 | 3,372,129 | 3,203,289 | 3,765 | 7,502 | 73,597,448 | 69,147,625 |
| Woodland | 2,891,128 | 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 | 4,477 | 8,590 | 173,923,691 | 172,551,051 |

${ }^{1}$ Includes field, vegetable, fruit and nursery crop land.
Economic Classification of Farms.-Value of sales was the main criterion used for the economic classification of farms. Commercial farms were defined as farms reporting sales of agricultural products valued at $\$ 1,200$ or more for a 12 -month period (excluding institutional-type farms); these were subdivided into seven classes based on the value of agricultural products sold.

Small-scale farms were divided into two groups: part-time farms included those with sales of agricultural products of $\$ 250$ to $\$ 1,199$ and for which the operator reported (a) 100 days or more of off-farm work (excluding exchange work) or (b) income received by the operator and his family from all other sources (excluding income from investments) greater than the income received from the sale of agricultural products; other small-scale farms were farms with reported agricultural sales of $\$ 250$ to $\$ 1,199$ and the farm operator (a) worked off the farm less than 100 days and (b) reported the value of agricultural sales greater than the income received from other sources. Residential and other small farms included those with value of agricultural products sold of less than $\$ 250$, and institutional farms, etc. included experimental farms, community pastures, Indian reserve farms and institutional-type farms, regardless of the amount of sales of agricultural products.

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|  | 369 | 9 | － | 82 | 98 | 29I |  |  |
| $098{ }^{\text {c }} 85$ | 290＇ 28 | 4 | ！ | 117＇ゅ | $8{ }^{\text {817 }}$＇L | 619＇t | 1ヵ1＇8 |  |
| 108＇9ち | L78＇88 | 9 | ${ }^{1}$ | ${ }^{162} L^{\prime}$＇${ }^{\text {c }}$ | ${ }^{081}{ }^{\circ}{ }^{6}$ | E86＇${ }^{\text {¢ }}$ | ${ }^{\text {96 }}$＇6I | ．．．．．．．．．．．．．．．．．．．．．．．．．．．．дәчіо |
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| \＆z6＇9z | ${ }^{\text {¢ } 69 ' \% ~}{ }^{\text {c }}$ | － |  | L9I＇1 | 029 | 920＇s | $878^{\prime} \mathrm{Z}$ |  |
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| $926^{\prime} 9$ | 8LL＇81 | 899＇\％ | $\dagger 9 \square^{\text {¢ }}$ | IL\＆＇6 | 87ち＇¢I | 688‘「I | 281＇81 |  |
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| 689＇ 11 | 0L3＇6z | 782＇6 | LSO＇gI | 886 ＇08 | 101＇切 | 088＇\＆8 | 8ちL＇${ }^{\text {c }}$ |  |
| $\left.\begin{array}{l}189 \\ 667^{\prime} \mathrm{J}\end{array}\right\}$ | 176 | $\left.\begin{array}{l}988 \\ 898\end{array}\right\}$ | 899 |  | 86L＇\＆ | $\left.\begin{array}{l}\text { 099 } \\ \mathbf{2 9 6}\end{array}\right\}$ | 888 |  |
| 186＊9 ${ }^{\text {c }}$ | $991 \times$ | IL6＇「 ${ }^{\text {a }}$ | 00\％＇「1 |  | I99＇t | 698＇z | 888 | 666 ＇万1－000＇01 |
|  | 6z7＇¢I | 996، 8 | ${ }^{988} 8^{\circ} \mathrm{L}$ | 106＇¢8 | ¥L9＇$¢$ | 198＇11 | L16، 2 | 666 ＇6－000＇9 |
| LZZ＇ 81 | 99干＇II | L67＇9 | 728＇9 | 7㸬＇II | 788＇91 | 299＇8 | 268＇8 | 666＇\％－092＇ 8 |
| 890＇LI | 03L＇03 | 86L＇9 | 250＇6 | ¢EI＇91 | L゙ぐ「も | 899＇tI | $909{ }^{\text {c }}$／ | 6 LL ＇ 8 － $00 \mathrm{~g}^{\prime}$＇ 2 |
| 682＇81 | 98\％＇\＆\＆ | $986^{\prime} 6$ | ¥78＇ 71 | $829.0 z$ | でL＇ 68 | 0L9＇\＆ | 20币＇98 | $665^{\prime} \mathrm{z}$ \＄－002＇1 \＄ |
| 988＇ 78 | 8FL＇ 78 | 7\％9＇\＆ | 978＇$\angle 8$ | ¢ヵ\＆＇06 | 618＇901 | L6ゅ＇ 79 | 889＇02 |  |
| ${ }^{\circ} \mathrm{N}$ | ${ }^{\circ} \mathrm{N}$ | ${ }^{\circ} \mathrm{N}$ | ${ }^{\circ} \mathrm{O}$ | ${ }^{\circ} \mathrm{N}$ | ${ }^{\circ} \mathrm{N}$ | ${ }^{\circ} \mathrm{N}$ | ${ }^{\circ} \mathrm{ON}$ |  |
| 196I | 1961 | 1961 | I961 | 1961 | 1961 | 196I | L961 |  |
| ивмәчә | ${ }^{88} 8^{88} 5$ | 8qo\％ | 88 K | оبฺ¢ | ${ }_{0}$ | əəq | วัช |  |
| 982＇「I | 185＇9\％ | 819「\％I | ¢19＇8\％ | 988＇2 | 281＇01 | \％ef＇I | 9\％9＇8 | stusen IIV＇stefoll |
| $8{ }^{87}$ | 形， | \＆¢ | 61 | 8 |  | 8 |  |  |
| ¢g9＇\％ | ¢¢L＇8 | 966＇\％ | L9L＇L | ¢¢8 | 2LE＇I | ¢99 | ¢97＇6 |  |
| $686{ }^{\prime}$ I | L26＇8 | 980＇z | 208＇8 | 091 ＇I | 981＇${ }^{\text {\％}}$ | 688 | 628 | ．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．лачъ0 |
| 0st＇z | 780＇9 | 997＇ 6 | 298＇s | $86 L$ | Iz8＇I | 988 | 929 |  |
| 029 ＇9 | LZL＇81 | 629＇L | ¢ $76{ }^{\text {＇} 91}$ | 908＇ 6 | 888＇ஏ | $96 z^{\prime}$ I | 9\％7＇\＆ |  |
| E\＆I | 78 | 091 | \＃2I |  | 61 | 28 |  | ләло 10000 ＇¢ 9 |
|  | 8 |  | ， |  |  | 46 | 18 | 666＇£も－000＇¢I |
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| 986 | LLL | 986 | 069 | 968 | 0 栭 | 92 | 49 |  |
| 0 F 9 | $\pm 02$ | 989 | 189 | 102 | 989 | 18 | 67 |  |
| 196 | 869＇【 | z76 | \＆g\％＇！ | 926 | $608^{\prime}$＇ | 18 | 09 |  |
| 800＇ 6 | でも＇も | 8z6＇ 1 | 09L＇ 8 | ¢¢9＇I | $868{ }^{\prime}$ | 9LI | $\pm 06$ | $665^{\prime} \mathrm{z}$ \＄－007＇I \＄ |
| 9II＇s | ¥02＇L | 686＇ஏ | 029＇9 | 08G＇ஏ | ¢98＇s | 995 | 107 |  |
| ${ }^{\circ} \mathrm{N}$ | ${ }^{\circ} \mathrm{oN}$ | ${ }^{\circ} \mathrm{ON}$ | ${ }^{\circ} \mathrm{N}$ | ${ }^{\circ} \mathrm{N}$ | ${ }^{\circ} \mathrm{N}$ | ${ }^{\circ} \mathrm{N}$ | ${ }^{\circ} \mathrm{N}$ |  |
| 196I | I961 | 196I | 1961 | 1961 | 1961 | 196I | 1961 |  |
| צotusun | ${ }^{\text {c }}{ }^{\text {mə }}$ N | ${ }^{8!700} \mathrm{~S}$ | ${ }^{810} \mathrm{~N}$ | $\underset{\text { purisi }}{\text { puti }}$ |  | puripu | појмә ${ }^{\text {N }}$ |  |
|  |  |  |  |  |  |  |  |  |

Type of Commercial Farms.-Commercial farms in the 1961 Census (farms reporting $\$ 1,200$ or more sales of agricultural products) are classified by product type in Table 50. A criterion of 51 p.c. or more of total sales was used for this classification; for example, a farm was typed as a poultry farm if 51 p.c. or more of the total agricultural sales for the farm was obtained from the sale of poultry products, and a farm was classed as a dairy farm if 40 p.c. to 50 p.c. of total sales was obtained from dairy products, provided the sale of dairy products together with the sale of cattle and calves amounted to 51 p.c. or more of total sales.

## 50.-Commercial Farms classified by Type of Farm, by Province, Census 1961

| Type of Farm | New-foundland | Prince Edward Island | Nova Scotia | New <br> Brunswick | Quebec | Ontario |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. |
| Dairy.......................................... | 80 | 554 | 2,017 | 1,740 | 39,657 | 26,246 |
| Cattle, hogs, sheep (excl. dairy farms).......... | 55 | 1,039 | 969 | 799 | 7,034 | 37,154 |
| Poultry......................................... | 74 | 55 | 431 | 282 | 2,236 | 3,727 |
| Wheat.......................................... | - | - | - | - | - | 344 |
| Small grains (excl. wheat farms)................ | - | 8 | 1 | 16 | 185 | 4,436 |
| Field crops, other than small grains............. | 134 | 1,090 | 81 | 963 | 1,629 | 4,642 |
| Fruits and vegetables. | 23 | 48 | 310 | 132 | 1,659 | 5,027 |
| Forestry........................................ | 12 | 14 | 384 | 255 | 943 | 478 |
| Miscellaneous specialty . . . . . . . . . . . . . . . . . . . | 26 | 12 | 102 | 48 | 586 | 1,361 |
| Mixed. | 52 | 1,710 | 644 | 881 | 8,568 | 6,930 |
| Livestock combination. | 12 | 1,454 | 431 | 624 | 6,508 | 6,193 |
| Field crops combination................... | 1 | 65 | 8 | 51 | 294 | 588 |
| Other combinations......................... | 39 | 211 | 205 | 206 | 1,766 | 1,215 |
| Totals, Commercial Farms............. | 456 | 4,530 | 4,939 | 5,116 | 62,497 | 90,345 |
|  | Manitoba | Saskatchewan | Alberta | British Columbia | $\begin{aligned} & \text { Yukon } \\ & \text { and } \\ & \text { N.W.T. } \end{aligned}$ | Canada |
|  | No. | No. | No. | No. | No. | No. |
|  | 2,348 | 1,032 | 2,646 | 2,898 | 1 | 79,218 |
| Cattle, hogs, sheep (excl. dairy farms).......... | 5,933 | 7,582 | 23,844 | 2,121 | 2 | 86,532 |
| Poultry. | 802 | 330 | 646 | 1,378 | - | 9,961 |
| Wheat.......................................... | 9,199 | 55,660 | 12,021 | 171 | - | 77,395 |
| Small grains (excl. wheat farms)................ | 8,413 | 10,060 | 9,078 | 293 | - | 32,490 |
| Field crops, other than small grains............ | 388 | 74 | 934 | 453 | - | 10,388 |
| Fruits and vegetables......................... | 100 | 14 | 42 | 2,451 | - | 9,806 |
| Forestry....................................... | 13 | 8 | 35 | 168 | - | 2,310 |
| Miscellaneous specialty ......................... | 267 | 111 | 339 | 606 | - | 3,458 |
| Mixed. | 6,059 | 7,414 | 9,113 | 363 | - | 41,734 |
| Livestock combination. | 4.112 | 4,309 | 5,895 | 156 | - | 28,614 |
| Field crops combination. | 1,167 | ' 1,698 | 2,088 | 104 r | - | 6,998 |
| Other combinations......................... | 780 | 1,407 | 1,190 | 103 | - | 7,128 |
| $\therefore$ Totals, Commercial Farms............. | 33,522 | 82,285 | 58,698 | 10,902 | 3 | 353,293 |

Size of Farms.-Farms are classified by size and by province in Table 51. More than 56 p.c. of the farms of Canada contain less than 240 acres. Size, of course, varies greatly among the provinces; in Newfoundland almost 90 p.c. of the farms are under 70 acres; in the Maritime Provinces 80 p.c. are under 240 acres; in Quebec and Ontario 67 p.c. are between 70 and 240 acres; in the Prairie Provinces 43 p.c. contain from 70 to 399 acres and 54 p.c. 400 or more acres; and in British Columbia 88 p.c. are between 3 and 400 acres in size.

## 51.-Farms classified by Size and by Province, Census 1961

| Size of Farm | New-foundland | Prince Edward Island | Nova Scotia | New Brunswick | Quebec | Ontario |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. <br> 225 | No. | No. <br> 190 | No. | No. <br> 498 | No. <br> 1,738 |
| Under 3 acres. |  |  |  |  |  |  |
| 3 - 9 acres | 640 | 91 | 462 | 188 | 1,120 | 4,434 |
| 10 - 69 " | 677 | 1,414 | 2,440 | 1,556 | 12,722 | 19,181 |
| $70-239$ " | 184 | 5,106 | 6,567 | 7,088 | 68,825 | 76,112 |
| 240 - 399 " | 19 | 558 | 1,781 | 1,852 | 9,993 | 14,248 |
| 400 - 559 " | 4 | 86 | 634 | 625 | 1,940 | 3,699 |
| 560 - 759 " | 1 | 17 | 260 | 214 | 477 | 1,209 |
| 760-1,119 " | 1 | 9 | 112 | 99 | 135 | 500 |
| 1,120-1,599 " $\ldots \ldots . . . . .$. | - | 2 | 48 | 32 | 44 | 152 |
| 1,600 acres or over $\qquad$ <br> Totals, Census Farms. <br> Under 3 acres. $\qquad$ | 1 | 1 | 24 | 18 | 23 | 60 |
|  | 1,752 | 7,335 | 12,518 | 11,786 | 95,777 | 121,333 |
|  | Manitoba | Saskatchewan | Alberta | British Columbia | $\begin{gathered} \text { Yukon } \\ \text { and } \\ \text { N.W.T. } \end{gathered}$ | Canada |
|  | No. 209 | No. <br> 128 | No. 238 | No. <br> 1.229 | No. | No. |
|  |  |  |  |  |  |  |
| 3-9 acres. | 553 | 262 | 683 | 3,678 | 3 | 12,114 |
| 10 - 69 " | 1,909 | 829 | 1,813 | 7,903 | 5 | 50,449 |
| $70-239$ " | 10,460 | 10,860 | 15,408 | 3,541 | 8 | 204,159 |
| 240 - 399 " | 12,562 | 20,977 | 19,385 | 1,249 | 2 | 82,626 |
| 400 - 559 " | 7,628 | 17,665 | 11,763 | 720 | - | 44,764 |
| $560-759$ " | 5,065 | 15,676 | 8,421 | 518 | 2 | 31,860 |
| 760-1,119 " | 3,284 | 15,499 | 7,498 | 499 | 6 | 27,642 |
| 1,120-1,599 " | 1,133 | 7,445 | 3,969 | 266 | - | 13,091 |
| 1,600 acres or over. | 503 | 4,583 | 4,034 | 331 | - | 9,578 |
| Totals, Census Farms. | 43,306 | 93,924 | 73,212 | 19,934 | 26 | 480,903 |

Tenure and Age of Farm Operators.-The proportion of farm operators owning all or part of their land increased from 93 p.c. in 1951 to 94 p.c. in 1961, the highest proportion since the turn of the century. As a consequence, the percentage of farms operated entirely on a rented basis continued to decrease.

There was also a decrease in the proportion of farm operators in the younger age groups. Those under 35 years of age decreased from 22 p.c. in 1951 to 17 p.c. in 1961 and, conversely, the proportion of operators of from 45 to 54 years of age increased from 23 p.c. to 27 p.c. and the proportion of those 55 years of age or older increased from 30 p.c. to 32 p.c. in the same comparison.

## 52.-Tenure and Age of Farm Operators, Censuses of 1951 and 1961

| Tenure and Age | Newfoundland |  | Prince Edward Island |  | Nova Scotia |  | New Brunswick |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1951 | 1961 | 1951 | 1961 | 1951 | 1961 | 1951 | 1961 |
| Tenure of Operator- | No. | No. | No. | No. | No. | No. | No. | No. |
| Owner (incl. manager). | 3,283 | 1,574 | 9,510 | 6,326 | 22,209 | 11,309 | 25,189 | 10,538 |
| Tenant................ | 60 283 | 29 149 | 82 545 | 64 945 | - 291 | 85 | 316 | 115 |
| Age of Operator-1 |  |  |  |  |  |  |  |  |
| Under 25 years. | 79 | 30 | 225 | 172 | 372 | 132 | 532 | 132 |
| $25-34$ years.. | 450 | 145 | 1,457 | 867 | 2,705 | 951 | 3,873 | 1,046 |
| 35-44 " | 871 | 417 | 2,442 | 1,479 | 5,320 | 2,455 | 6,497 | 2,588 |
| 45-54 " | 831 | 528 | 2,317 | 1,936 | 5,239 | 3,389 | 5,978 | 3,274 |
| $55-59$ " | 371 | 211 | 1,092 | - 811 | 2,554 | 1,591 | 2,791 | 1,454 |
| $60-64$ " | 672 | 165 | 1,664 | $\left\{\begin{array}{r}761 \\ 607\end{array}\right.$ | 4,516 | $\left\{\begin{array}{l}1,387 \\ 1\end{array}\right.$ | 4,466 | $\left\{\begin{array}{l}1,204\end{array}\right.$ |
| 70 years or over | 350 |  | ) 927 | 607 702 | 2,771 | 1,081 <br> 1,532 | 2,231 | 1901 1,187 |
| Totals, Census Farms. | 3,626 | 1,752 | 10,137 | 7,335 | 23,515 | 12,518 | 26,431 | 11,786 |
|  | Quebec |  | Ontario |  | Manitoba |  | Saskatchewan |  |
|  | 1951 | 1961 | 1951 | 1961 | 1951 | 1961 | 1951 | 1961 |
|  | No. | No. | No. | No. | No. | No. | No. | No. |
| Owner (incl. manager). | 127,979 | 88,018 | 125,159 | 97,829 | 37,541 | 28,266 | 61,763 | 48,716 |
| Tenant... | 2,566 | 1,253 | 8,852 | 5,610 | 5,062 | 3,459 | 16,495 | 9,521 |
| Part owner, part tenant | 3,791 | 6,506 | 15,909 | 17,894 | 9,780 | 11,581 | 33,760 | 35,687 |
| Age of Operator-1 |  |  |  |  |  |  |  |  |
| Under $25-34$ years. | 4,728 26,496 | 2,508 14,617 | 3,749 22,136 | 2,349 15,564 | 1,860 10,972 | 1,167 6,130 | 6,189 24,745 | 3,342 14,705 |
| $35-44$ " | 36,860 | 25,187 | 35,699 | 28,074 | 14,067 | 11,132 | 28,311 | 24,315 |
| 45-54 " | 31,969 | 26,555 | 38,365 | 31,859 | 11,796 | 11,861 | 22,252 | 24,251 |
| 55-59 " | 12,791 | 10,483 | 16,658 | 14,796 | 4,966 | 4,775 | 10,101 | 9,694 |
| $\begin{array}{cc} 60-64 \\ 65-69 & " \end{array}$ | 16,260 | $\left\{\begin{array}{l}7,960 \\ 4,672\end{array}\right.$ | 22,985 | $\left\{\begin{array}{r}12,184 \\ 8,239 \\ 8,288\end{array}\right.$ | 6,831 | $\left\{\begin{array}{l}3,727 \\ 2,390\end{array}\right.$ | 15,993 | 7,089 5,328 |
| 70 years or over | 4,969 | 3,795 | 9,981 | 8,268 | 1,642 | 2,124 | 3,995 | 5,200 |
| Total, Census Farms. | 134,336 | 95,77\% | 149,920 | 121,333 | 52,383 | 43,306 | 112,018 | 93,924 |
|  | Alberta |  | British Columbia |  | $\begin{gathered} \text { Yukon } \\ \text { and } \\ \text { N.W.T. } \end{gathered}$ |  | Canada |  |
|  | 1951 | 1961 | 1951 | 1961 | 1951 | 1961 | 1951 | 1961 |
|  |  | No. | No. | No. |  | No. | No. | No. |
| Owner (incl. manager). | 53,482 | 43,765 | 22,763 | 16,469 | 4 | 14 | 488,882 | 352,824 |
| Tenant.. | 9,735 | 6,723 | 1,524 |  | - | 5 | 44,983 | 27,696 |
| Part owner, part tenant. | 21,098 | 22,724 | 2,119 | 2,633 | - | 7 | 89,226 | 100,383 |
| Age of Operator-1 |  |  |  |  |  |  |  |  |
| Under 25 years. | 3,630 | 2,313 | 395 3 |  | 二 | 5 | 21,759 112 | 12,354 |
| $25-34$ years. | 17,003 | 11,882 | 3,315 | 2,114 | 1 | 5 | ${ }_{157}^{113,152}$ | -68,026 |
| 35-44 45 | 21,050 19,802 | 18,639 18,739 | 6,185 6,508 | 4,645 5,512 | $\stackrel{1}{2}$ | 12 1 | 157,303 | 127,905 |
| $55-59$ " | 8,173 | 8,416 | 3,016 | 2,652 | 2 | 4 | 62,513 | 54,887 |
| $60-64$ " |  | 6,105 |  | $\{1,884$ |  | , | 30,146 | $\left\{\begin{array}{l}42,466 \\ 18411\end{array}\right.$ |
| $65-69$ " | 11,638 | 3,747 |  | \{ 1,329 |  |  | )0,14 | 28,411 |
| 70 years or over. | 2,748 | 3,371 | 1,803 | 1,589 | 1 | 2 | 31,418 | 27,911 |
| Totals, Census Farms. | 84,315 | 73,212 | 26,406 | 19,934 | 4 | 26 | 623,091 | 480,903 |

[^135]Farm Machinery and Electrification.-The numbers of most types of machinery on farms increased considerably between 1951 and 1961 as shown in Table 53. However, technological changes were reflected in a reduction in the numbers of such items as threshing machines and grain binders since these types of harvesting equipment are rapidly being replaced by combines.

The proportion of farms reporting electric power increased in all provinces during the same period, although the fact that there were fewer farms resulted in a decrease in the number reporting electric power in certain provinces. The most important increases occurred in Prince Edward Island where the proportion of farms reporting electric power was 22 p.c. in 1951, 40 p.c. in 1956 and 78 p.c. in 1961; in Newfoundland where the increase was from 38 p.c. in 1951 to 44 p.c. in 1956 and 66 p.c. in 1961; in Saskatchewan where the increase was from 16 p.c. in 1951 to 42 p.c. in 1956 and 66 p.c. in 1961; and in Alberta where it was from 25 p.c. to 52 p.c. and 72 p.c. for the same years.
53.-Farm Machinery, by Province, Censuses of 1951 and 1961

| Item and Year | $\begin{aligned} & \text { Newfound- } \\ & \text { land } \end{aligned}$ | Prince <br> Edward Island | Nova Scotia | New <br> Brunswick | Quebec | Ontario |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. |
| Automobiles....................... 1951 | $\begin{aligned} & 185 \\ & 323 \end{aligned}$ | 4,147 4,713 | 6,970 6,618 | 7,999 6,872 | 41,602 55,385 | $\begin{aligned} & 114,870 \\ & 110,773 \end{aligned}$ |
| Motor trucks. ..................... 1951 | 507 715 | 1,679 3,253 | 5,687 5,965 | 4,786 4,657 | 19,167 26,597 | $\begin{aligned} & 41,486 \\ & 62,812 \end{aligned}$ |
| Tractors........................... 1961 | 126 462 | $\mathbf{2 , 7 7 6}$ $\mathbf{5 , 7 1 3}$ | 4,307 7,074 | 5,221 | 31,971 70,697 | $\begin{aligned} & 105,204 \\ & 150,046 \end{aligned}$ |
| Grain combines................ ${ }_{1961}^{1951}$ | 2 | 18 644 | 16 154 | 211 770 | 420 3,046 | $\begin{aligned} & 10,031 \\ & 22,387 \end{aligned}$ |
| Threshing machines. . . . . . . . ${ }_{1961}^{1951}$ | 5 4 | 2,973 1,656 | 826 482 | 2,450 915 | 30,360 15,340 | $\begin{aligned} & 15,946 \\ & 16,843 \end{aligned}$ |
| Grain binders..................... 1961 | 4 | $\mathbf{5 , 9 5 6}$ 3,222 | 2,101 1,363 | 4,149 1,827 | $\begin{aligned} & 43,467 \\ & 33,647 \end{aligned}$ | $\begin{aligned} & 85,135 \\ & 43,802 \end{aligned}$ |
|  | Manitoba | Saskatchewan | Alberta | British Columbia | Yukon and N.W.T. | Canada |
|  | No. | No. | No. | No. | No. | No. |
| Automobiles........................ ${ }_{1961}^{1951}$ | $\begin{aligned} & 32,060 \\ & 34,619 \end{aligned}$ | $\begin{aligned} & 62,963 \\ & 72,152 \end{aligned}$ | $\begin{aligned} & 46,314 \\ & 52,167 \end{aligned}$ | $\begin{aligned} & 12,557 \\ & 14,322 \end{aligned}$ | 7 | $\begin{aligned} & 329,667 \\ & 357,951 \end{aligned}$ |
| Motor trucks. ...................... 1961 | $\begin{aligned} & 21,163 \\ & 31,806 \end{aligned}$ | $\begin{aligned} & 52,626 \\ & 82,669 \end{aligned}$ | $\begin{aligned} & 39,723 \\ & 71,508 \end{aligned}$ | $\begin{array}{r} 9,291 \\ 12,004 \end{array}$ | 7 26 | $\begin{aligned} & 196,122 \\ & 302,012 \end{aligned}$ |
| Tractors............................ 1951 | $\begin{aligned} & 50,984 \\ & 61,463 \end{aligned}$ | $\begin{aligned} & 106,664 \\ & 126,613 \end{aligned}$ | $\begin{array}{r} 79,282 \\ 102,624 \end{array}$ | $\begin{aligned} & 13,148 \\ & 16.974 \end{aligned}$ | 3 21 | $\begin{aligned} & 399,686 \\ & 549,789 \end{aligned}$ |
| Grain combines.................... 1951 | $\begin{aligned} & 15,268 \\ & 23,662 \end{aligned}$ | $\begin{aligned} & 42,997 \\ & 65,084 \end{aligned}$ | $\begin{aligned} & 20,852 \\ & 38,530 \end{aligned}$ | $\begin{array}{r} 687 \\ 1,331 \end{array}$ | - 1 | $\begin{array}{r} 90,500 \\ 155,611 \end{array}$ |
| Threshing machines............ ${ }_{1961}^{1951}$ | $\begin{aligned} & 9,425 \\ & 5,613 \end{aligned}$ | $\begin{aligned} & 19,221 \\ & 11,623 \end{aligned}$ | $\begin{aligned} & 14,768 \\ & 13,006 \end{aligned}$ | $\begin{gathered} 717 \\ 572 \end{gathered}$ | - 3 | $\begin{aligned} & 9,691 \\ & 66,057 \end{aligned}$ |
| Grain binders...................... ${ }_{1961}^{1951}$ | $\begin{aligned} & 31,410 \\ & 12,725 \end{aligned}$ | $\begin{aligned} & 70,584 \\ & 29,998 \\ & \hline \end{aligned}$ | $\begin{gathered} 57,930 \\ 32,476 \end{gathered}$ | $\begin{aligned} & 2,638 \\ & 1,509 \end{aligned}$ | 5 | $\begin{aligned} & 303,374 \\ & 160,575 \end{aligned}$ |

54.-Farm Electrification, by Province, Censuses of 1951, 1956 and 1961

| Province or Territory | 1951 |  | 1956 |  | 1961 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Farms <br> Reporting Electric Power | $\begin{gathered} \text { P.C. } \\ \text { of } \\ \text { oll Farms } \end{gathered}$ | Farms <br> Reporting Electric Power | $\begin{gathered} \text { P.C. } \\ \text { of } \\ \text { all Farms } \end{gathered}$ | Farms <br> Reporting Electric Power | $\begin{gathered} \text { P.C. } \\ \text { of } \\ \text { All Farms } \end{gathered}$ |
|  | No. |  | No. |  | No. |  |
| Newfoundland. | 1,383 | 38.1 | 1,059 | 44.4 | 1,152 | 65.8 |
| Prince Edward Island. | 2,226 | 22.0 | 3,748 | 39.7 | 5,728 | 78.1 |
| Nova Scotia. | 16,733 | 71.2 | 18,677 | 88.6 | 11,953 | 95.5 |
| New Brunswick | 15,938 | 60.3 | 19,328 | 87.4 | 11,371 | 96.5 |
| Quebec.. | 90, 209 | 67.2 | 108,015 | 88.1 | 93,197 | 97.3 |
| Ontario... | 110,595 | 73.8 | 125,310 | 89.1 | 115,453 | 95.2 |
| Manitoba. | 25,208 | 48.1 | 41,464 | 84.3 | 39,081 | 90.2 |
| Saskatchewan. | 18,213 | 16.3 | 43,778 | 42.3 | 61,626 | 65.6 |
| Alberta........................... | 20,709 | 24.6 | 40,937 | 51.5 | 52,936 | 72.3 |
| British Columbia................ | 18,168 1 | 68.8 25.0 | 20,279 9 | 81.9 40.9 | 17,370 15 | 87.1 57.7 |
| Canada | 319,383 | 51.3 | 422,604 | 73.5 | 409,882 | 85.2 |

Farm Capita1.-While the value of farm land and buildings in Canada increased by more than one half between 1951 and 1961 and the value of farm machinery and equipment increased by about one third, there was a slight decrease in the value of livestock and poultry on farms. Table 55 gives the value of farm capital by province for 1951 and 1961.
55.-Farm Capital, by Province, Censuses of 1951 and 1961


## Section 6.-International Crop Statistics

Tables 56 and 57 are based on estimates published in February and May 1963 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 1961 and 1962 with average for the years 1955-59, in the leading countries of the world.

## 56.-Estimated Acreages and Production of Wheat Harvested in 1961 and 1962 in Specified Countries, with Average for 1955-59

| Continent and Country | Acreages of Wheat |  |  | Production of Wheat |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { Average } \\ 1955-59 \end{gathered}$ | 1961 | 1962 | $\begin{gathered} \text { Average } \\ 1955-59 \end{gathered}$ | 1961 | 1962 |
|  | '000 | '000 | '000 | '000 bu. | '000 bu. | '000 bu. |
| North America ${ }^{1}$ | 74,130 | 78,970 | 72,680 | 1,606,000 | 1,570,000 | 1,702,000 |
| Canads. | 22,704 | 25,316 | 26,893 | 465,437 | 283,394 | 557,554 |
| Mexico | 2,214 | 2,016 | 2,160 | 44,615 | 50,450 | 51,800 |
| United States | 49,128 | 51,551 | 43,545 | 1,095,357 | 1,234,743 | 1,091,787 |
| Europe ${ }^{1}$. | 71,870 | 66,640 | 71,200 | 1,855,000 | 1,865,000 | 2,170,000 |
| Europe, West ${ }^{1}$ | 46,560 | 42,510 | 46,730 | 1,313,000 | 1,265,000 | 1,605,000 |
| Austria.. | 634 | 682 | 668 | 20,802 | 26,150 | 25,950 |
| Belgium-Luxembourg | 498 | 510 | 516 | 26,672 | 26,540 | 30,660 |
| Britain. | 2,098 | 1,827 | 2,256 | 101,720 | 96,100 | 132,000 |
| Denmark | 179 | 260 | 382 | 10,521 | 15,950 | 24,070 |
| Finland. | 314 | 586 | 706 | 7,514 | 16,930 | 15,500 |
| France. | 10,432 | 9,876 | 11,174 | 358,210 | 351,800 | 510,000 |
| Germany, West | 3,045 | 3,435 | 3,245 | 138,676 | 148,000 | 168,000 |
| Greece. | 2,704 | 2,637 | 2,689 | 57,762 | 58,560 | 62,540 |
| Ireland | 361 | 345 | 319 | 15,279 | 17,250 | 15,900 |
| Italy. | 12,145 | 10,721 | 11,429 | 329,880 | 305,000 | 350,000 |
| Netherlands | 250 | 304 | 326 | 14,446 | 17,450 | 23,000 |
| Norway. | 35 | 24 | 24 | 1,134 | 1,000 | 750 |
| Portugal | 2,009 | 1,606 | 1,631 | 24,286 | 15,700 | 20,300 |
| Spain.. | 10,728 | 8,700 | 10,300 | 165,400 | 123,680 | 180,000 |
| Sweden.... | 831 | 679 | 761 | 28,030 | 29,850 | 31,100 |
| Switzerland | 243 | 272 | 256 | 10,860 | 11,400 | 11,900 |
| Europe, East ${ }^{1}$ | 25,310 | 24,130 | 24,470 | 542,000 | 600,000 | 565,000 |
| Bulgaria. | 3,466 | 3,212 | 3,015 | 68,100 | 62,500 | 60,000 |
| Czechoslovakia | 1,818 | 1,589 | 1,500 | 54,500 | 60,000 | 53,000 |
| Germany, East | 1,026 | 932 | 939 | 42,160 | 38,200 | 40,200 |
| Hungary | 3,112 | 2,505 | 2,715 | 68,500 | 71,100 | 69,000 |
| Poland | 3,581 | 3,462 | 3,442 | 83,900 | 102,500 | 90,000 |
| Romania | 7,302 | 7,337 | 7,520 | 118,600 | 145,000 | 140,000 |
| Yugoslavia | 4,750 | 4,843 | 5,090 | 102,000 | 116,500 | 110,000 |
| U.S.S.R. (Europe and Asia)2. | 159,000 | 155,000 | 167,800 | 1,910,000 | 1,900,000 | 2,000,000 |
| Asial ${ }^{\text {a }}$.. | 142,010 | 138,170 | 145,010 | 1,895,000 | 1,865,000 | 2,020,000 |
| China |  |  |  | 900,000 | - 000 |  |
| Iran.. | 30,448 | 32,047 | - | - 350,950 | 103,000 | 434,000 99 |
| Iraq. | 2,540 | 3,200 | - | 27,118 | 30,000 | 38,000 |
| Israel. | 137 | 118 | - | 2,418 | 2,000 | - 00 |
| Japan. | 1,551 | 1,603 | 1,585 | 50,482 | 65,440 | 60,000 |
| Jordan..... | 638 |  | - | 5,458 | 5,100 | 4,000 |
| Kobanen Republic of | 317 | 310 | 330 | 4,469 | 6,200 | 6,000 |
| Pakistan. | 11,496 | 11,603 | 12,571 | 11,682 | 141,340 | 151,700 |
| Syria. | 2,540 | 2,100 |  | 25,392 | 16,500 | 45,000 |
| Turkey. | 16,990 | 15,500 | - | 232,000 | 225,000 | 245,000 |
| Africal | 17,600 | 16,850 | 16,590 | 195,000 | 160,000 | 210,000 |
| Algeria | 4,658 | 4,622 | 4,522 | 46,364 | 24,200 |  |
| Egypt. | 1,561 | 1,436 | 1,510 | 53,778 | 52,800 | 57,000 |
| Morocco. | 3,888 | 3,845 | 3,677 | 35,723 | 23,300 | 45,800 |
| Republic of South Africa | 2,908 2,906 | 2,000 3,100 | 2,100 $\mathbf{2 , 9 5 0}$ | 17,798 27,554 | 9,000 32,500 | 15,000 28,000 |

For footnotes, see end of table, p. 486.

## 56.-Estimated Acreages and Production of Wheat Harvested in 1961 and 1962 in Specified Countries, with Average for 1955-59-concluded

| Continent and Country | Acreages of Wheat |  |  | Production of Wheat |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { Average } \\ \text { 1955-59 } \end{gathered}$ | 1961 | 1962 | $\begin{aligned} & \text { Average } \\ & 1955-59 \end{aligned}$ | 1961 | 1962 |
|  | '000 | '000 | '000 | '000 bu. | '000 bu. | '000 bu. |
| South America ${ }^{1}$. | 18,680 | 16,030 | 15,890 | 323,000 | 265,000 | 265,000 |
| Argentina. | 11,598 | 10,374 |  | 225,676 | 190,000 | 190,000 |
| Brazil. | 2,386 2 | - 094 | -2,076 | 24,460 40 | 7,500 39,350 |  |
| Colombia | 2,030 | 2,094 395 | 2,076 | 40,597 5,288 | 39,350 5 | 42,000 5,500 |
| Peru. | 365 | 377 | 395 | 5,166 | 6,400 | 6,100 |
| Uruguay. | 1,604 | 1,077 | - | 18,950 | 13,650 | 6, |
| Oceania | 9,732 | 14,906 | 16,317 | 173,134 | 254,600 | 299,800 |
| Australia. | 9,629 | 14,723 | 16,122 | 168,320 | 246,000 | 290,000 |
| New Zealand | 103 | 183 | 195 | 4,814 | 8,600 | 9,800 |
| World Totals ${ }^{1}$. | 493,020 | 486,570 | 505,490 | 7,955,000 | 7,880,000 | 8,670,000 |

[^136]
## 5\%.-Estimated Production of Oats and Barley Harvested in 1961 and 1962 in Specified Countries, with Average for 1955-59

| Continent and Country | Oats |  |  | Barley |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { Average } \\ & 1955-59 \end{aligned}$ | 1961 | 1962 | $\begin{gathered} \text { Average } \\ 1955-59 \end{gathered}$ | 1961 | 1962 |
|  | '000 bu. | '000 bu. | '000 bu. | '000 bu. | '000 bu. | '000 bu. |
| North America ${ }^{1}$ | 1,660,000 | 1,300,000 | 1,531,000 | 671,000 | 517,000 | 605,000 |
| Canada | 375,000 | 283,965 | 493,610 | 238,000 | 112,640 | 165,888 |
| Mexico | 5,308 | 5,000 | 5,500 | 8,500 | 8,500 | 9,320 |
| United States | 1,278,145 | 1,011,398 | 1,031,743 | 424, 448 | 395,669 | 429,495 |
| Europe ${ }^{1}$. | 1,310,000 | 1,260,090 | 1,195, 000 | 1,050,000 | 1,305,000 | 1,450,000 |
| Europe, West ${ }^{1}$ | 935,000 | 860,000 | 835,000 | 800,000 | 1,012,000 | 1,160,000 |
| Austria.. | 23,740 | 23,100 | 22,900 | 17,110 | 23,500 | 25,580 |
| Belgium-Luxembourg | 34, 360 | 30,620 | 29,400 | 14,520 | 18,770 | 22,930 |
| Britain. | 163,310 | 127,540 | 120,000 | 148,200 | 232,100 129 | 152,500 |
| Finland. | 48, 160 | 64,830 | 42,500 | 15,010 | 16,800 | 12,400 |
| France. | 224,270 | 178,500 | 179,100 | 197,890 | 248,600 | 272,000 |
| Germany, West | 156,630 | 131,800 | 160,700 | 111,700 | 125,000 | 172,000 |
| Greece... | 11,000 | 10,550 | 10,740 | 10,950 | 10,800 | 12,100 |
| Ireland | 34,380 | 26,250 | 24,500 | 16,110 | 23,700 | 28,000 |
| Italy. | 37,490 | 40,300 | 41,100 | 13,240 | 12,800 | 13,100 19 |
| Netherlands | 32,140 | 29,710 | 31,650 | 12,970 13 | 17,690 19,640 | 19,500 17,800 |
| Norway. | 9,320 7,450 | 11,970 4,420 | 6,800 6,920 | 13,480 3,850 | 19,640 2,400 | 17,800 2,900 |
| Portugal | 7,450 37,000 | 4,420 34,100 | 6,920 35,100 | 3,850 82,470 | 2,400 80,100 | 98,750 |
| Sweden | 58,750 | 93, 300 | 74,360 | 26,760 | 45,500 | 44,800 |
| Switzerland | 3,850 | 3,270 | 3,170 | 3,430 | 4,200 | 5,200 |
| Europe, East ${ }^{1}$. | 375,000 | 400,000 | 360,000 | 250,000 | 293,000 | 290,000 |
| Bulgaria... | 11,340 | 13,000 | 12,500 | 18,770 | 20,000 | 18,000 |
| Czechoslovakia | 64,800 | 66,000 | 60,000 | 61,700 | 73,000 | 75,000 |
| Germany, East. | 66,740 | 59,000 | 57,000 | 37,760 | 43,500 | ${ }_{47,000}$ |
| Hungary | 14,080 | 9,600 | 8,000 | 37,280 53 | 45,200 61,500 | 59,000 |
| Poland... | 168,640 | 203,000 18,900 | 188,500 | 16,940 | 21,500 | 17,800 |
| Yugoslavia | 24,090 | 29,800 | 21,000 | 21,890 | 26,000 | 21,800 |

For footnote, see end of table.

## 5\%.-Estimated Production of Oats and Barley Harvested in 1961 and 1962 in Specified Countries, with Average for 1955-59-concluded

| Continent and Country | Oats |  |  | Barley |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { Average } \\ 1955-59 \end{gathered}$ | 1961 | 1962 | $\begin{gathered} \text { Average } \\ 1955-59 \end{gathered}$ | 1961 | 1962 |
|  | '000 bu. | '000 bu. | '000 bu. | '000 bu. | '000 bu. | '000 bu. |
| U.S.S.R. (Europe and Asia) ${ }^{2}$.. | 845,000 | 600,000 | 440,000 | 440,000 | 610,000 | 720,000 |
| Asia ${ }^{1}$ | 105,000 | 100,000 | 105,000 | 845,000 | 835,000 | 880,000 |
| China | 65,000 | - | - | 311,000 | - | - |
| Cyprus. | - | 二 | 二 | 3,046 125,356 | 131,630 | 143,100 |
| Iran.. | - | - | - | +42,530 | 46,000 | 43,500 |
| Iraq. | - | - | - | 44,992 | 41,850 | - |
| Israel | - | - | 12 | 2,949 | 2,000 | - |
| Japan. | 12,188 | 11,570 | 12,380 | 93,528 | 82,970 | 72,800 |
| Korea, Republic of | - |  | - | 36,260 | 47,200 | 44,000 |
| Pakistan |  |  | - | 6,620 | 6,300 | 6, 200 |
| Syria... | 456 25,406 | 200 30,000 |  | 16,064 139,000 |  | 27,500 147,000 |
| Turkey | 25,406 | 30,000 | 31,000 | 139,000 | 142,500 | 147,000 |
| Africal | 15,000 | 13,000 | 14,000 | 125,000 | 75,000 | 120,000 |
| Algeria | 4,840 | 1,500 | - | 34,000 | 15,000 | -7 |
| Egypt... | - 570 |  | 1700 | 6,090 | 6,100 | 7,500 |
| Morocco. | 1,570 | 1,000 | 1,790 | 55, 250 | 25,000 | 55,000 |
| Tunisia............... | 660 6,040 | -8,000 | 7,200 | 8,440 1,150 | 4,000 1,600 | 5,000 1,900 |
| South America ${ }^{\text {a }}$. | 77,000 | 65,000 | 50,000 | 76,000 | 65,000 | 50,000 |
| Argentina. | 64,620 | 48,900 | 32,500 | 50,510 | 36,740 | 16,500 |
| Chile.. | 7,970 | 7,610 | 7,750 | 4,932 | 5,200 | 5,200 |
| Colombia | - | - | - | 3,293 | 4,640 | 4,960 |
| Ecuador. | - | - | - | 3,928 | 3,230 | 3,800 |
| Peru... |  |  | - | 8,551 | 10,000 | 9,400 |
| Uruguay | 2,798 | 4,440 | 4,270 | 1,457 | 1,400 | 2,440 |
| Oceania | 66,060 | 70,890 | 68,990 | 48,372 | 46,870 | 40,640 |
| Australia | 63,630 | 68,910 | 66,780 | 45,400 | 43,230 | 37,100 |
| New Zealand | 2,430 | 1,980 | 2,210 | 2,972 | 3,640 | 3,540 |
| World Totals ${ }^{1}$ | 4,080,000 | 3,410,000 | 3,405,000 | 3,255,000 | 3,455,000 | 3,865,000 |

[^137]
# CHAPTER X.-FORESTRY* 

## CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing $p .1$ 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. At the same time, 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.

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 $3,200,000,000 \mathrm{cu}$. feet 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 30 p.c. of the value of Canada's export trade.

## Section 1.-Forest Regions $\dagger$

The forests of Canada cover a vast area in the north temperate climatic zone. Wide variations in physiographic, soil and climatic conditions cause marked differences in the

[^138]character of the forests in different parts of the country; hence, eight fairly well defined 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 forested 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 central portions as well as in 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 characteristic species are Engelmann spruce, alpine fir and lodgepole pine. There is a close relationship with the Boreal Region, from which the black and the white spruces and aspen intrude. There is also some entry of blue Douglas fir from the Montane Forest and western hemlock, 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 occur in Canada only on the southeast coast of Vancouver Island and the adjacent islands and mainland. These are species whose centres of population lie southward in the United States.

Acadian Forest Region.-Over the greater part of the Maritime Provinces, 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 formerly a more important forest constituent than at present, for 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 Forest 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.

## Section 2.-Forest Resources

The forested area of Canada is estimated at $1,713,755$ sq. miles, and about 56 p.c. of that area is capable of producing merchantable timber. Of this productive area, 719,919 sq. miles are now accessible for commercial operations and the remainder, at present beyond the reach of economical transportation facilities, contains much valuable timber that will be brought progressively into commercial development as demand requires its use and as transportation becomes available. The great areas of forest considered commercially non-productive are nevertheless of significant value to the country in the influence they exert on climate, moisture and soil. Table 1 shows the areas of productive and non-productive forest land in each province and territory. Forested land, classified by type of growth and by province, is given in Chapter I at p. 31.
1.-Productive and Non-productive Forest Land, by Province, 1962

| Province or Territory | Productive Forested Land |  |  | Nonproductive Forested Land | Total Forested Land |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Accessible | Potentially Accessible | Total |  |  |
|  | sq. miles | sq. miles | sq. miles | sq. miles | sq. miles |
| Newfoundland. | 28,216 | 5,661 | 33,877 | 53,915 | 87,792 |
| Prince Edward Island | ${ }^{812}$ | - | ${ }_{1512} 81$ | 122 | 934 |
| Nova Scotia. | 15,106 | - 7 | 15,106 | 1,283 | 16,389 |
| Quebec.... | 134,159 | 86,113 | 220, 272 | 157,860 | 16,326 378,132 |
| Ontario. | 130,633 | 35, 108 | 165,741 | -96,006 | 261,747 |
| Manitoba | 36,761 | 21,422 | 58,183 | 64,637 | 122, 820 |
| Saskatchewan | 25,503 | 15,505 | 41,008 | 76,730 | 117,738 |
| Alberta | 115,574 | 3,809 | 119,383 | 41,056 | 160,439 |
| British Columbia | 183,500 | 24,911 | 208,411 | 59,227 | 267,638 |
| Totals, Provinces.. | 694,019 | 192,608 | 886,627 | 551,328 | 1,437,955 |
| Yukon Territory . | 14,200 | 27,900 | 42,100 | 39,100 | 81,200 |
| Northwest Territories | 11,700 | 21,900 | 33,600 | 161,000 | 194,600 |
| Canada | 719,919 | 242,408 | 962,327 | 751,428 | 1,713,755 |

There are more than 150 tree species in Canada, of which 31 are conifers, commonly called 'softwoods'. About two thirds of these softwoods and 10 p.c. of the large number of deciduous or 'hardwood' species are of commercial importance. Approximately 82 p.c. of the volume of merchantable timber is made up of softwood species. The dominant species existing in each forest region are given in Section 1. Detailed information is contained in Department of Forestry Bulletin No. 61, Native Trees of Canada.*

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 compiles the National Forest Inventory. 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.

The predominant part played by pulp and paper, lumber and other forest product industries in the development of Canada has resulted in a widespread tendency to evaluate the forest in terms of timber alone. However, a growing realization of the economic importance of the forest for its non-commercial values, such as 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 forestry.

[^139]2.-Estimate of Standing Timber, by Type and Size and by Province and Region, 1962

| Province or Territory and Region | Coniferous |  |  | Broadleaved |  |  | Totals |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Large Material ${ }^{1}$ | Small Material ${ }^{2}$ | Total | Large Material ${ }^{1}$ | Small Material ${ }^{2}$ | Total | Large Material ${ }^{1}$ | $\begin{gathered} \text { Small } \\ \text { Material } \end{gathered}$ | Total |
|  | Million cu. ft . | '000 cords | Million cu. ft. | $\begin{aligned} & \text { Million } \\ & \text { cu. ft. } \end{aligned}$ | $\begin{aligned} & \text { '000 } \\ & \text { cords } \end{aligned}$ | $\begin{aligned} & \text { Million } \\ & \text { cu. ft. } \end{aligned}$ | $\begin{aligned} & \text { Million } \\ & \text { cu. ft. } \end{aligned}$ | $\begin{aligned} & \text { '000 } \\ & \text { cords } \end{aligned}$ | Million cu. ft. |
| Accessible |  |  |  |  |  |  |  |  |  |
| Newfoundland | 2,296 | 129,225 | 13,280 | 293 | 3,755 | 613 | 2,589 | 132,980 | 13,893 |
| Labrador | 1,101 | 63,348 | 6,485 | 83 | 2,185 | 270 | 1,184 | 65,533 | 6,755 |
| Island................ | 1,195 | 65,877 | 6,795 | 210 | 1,570 | 343 | 1,405 | 67, 447 | 7, 138 |
| Prince Edward Island.... |  | 672 |  | 12 | 460 | 52 | , 51 | 1,132 | 148 |
| Nova Scotia. | 2,149 | 50,824 | 6,469 | 1,529 | 20,988 | 3,313 | 3,678 | 71,812 | 9,782 |
| New Brunswick. | 4,265 | 89,569 | 11,878 | 2,626 | 26,772 | 4,901 | 6,891 | 116,341 | 16,779 |
| Totals, Atlantic Provinces...... | 8,749 | 270,290 | 31,723 | 4,460 | 51,975 | 8,879 | 13,209 | 322,265 | 40,602 |
| Quebec.. | 6,083 | 421,971 | 41,951 | 2,315 | 174,496 | 17,147 | 8,398 | 596,468 | 59,098 |
| Ontario. | 16,785 | 404,493 | 51,167 | 17,633 | 187,843 | 33,599 | 34,418 | 592,336 | 84,766 |
| Totals, Central Provinces............. | 22,868 | 826,463 | 93,118 | 19,948 | 362,340 | 50,746 | 42,816 | 1,188,803 | 143,864 |
| Manitoba. | 1,033 | 56,150 | 5,806 | 932 | 16,404 | 2,326 | 1,965 | 72,554 | 8,132 |
| Saskatchewan | 1,232 | 58,349 | 6,191 | 2,773 | 57,114 | 7,628 | 4,005 | 115,464 | 13,819 |
| Alberta................... | 12,343 | 196,238 | 29,023 | 11,937 | 132,818 | 23,227 | 24,280 | 329,057 | 52,250 |
| Totals, Prairie Provinces...... | 14,608 | 310,739 | 41,020 | 15,642 | 206,336 | 33,181 | 30,250 | 517,075 | 74,201 |
| British Columbia.. | 244,265 | 677,754 | 301,874 | 13,228 | 60,284 | 18,352 | 257,493 | 738,037 | 320,226 |
| Northwest Territories. | 400 | 36,000 | 3,460 | 360 | 18,500 | 1,933 | 760 | 54,500 | 5,393 |
| Yukon Territory...... | 400 | 25,500 | 2,568 | 70 | 6,300 | 1,605 | 470 | 31,800 | 3,173 |
| Totals, Accessible. | 291,290 | 2,146,746 | 473,763 | 53,708 | 705,735 | 113,696 | 344,998 | 2,852,481 | 587,459 |
| Totals, Potentially Accessible | 53,815 | 767,686 | 119,069 | 2,881 | 125,086 | 13,513 | 56,696 | 892,772 | 132,582 |
| Canada | 345,105 | 2,914,432 | 592,832 | 56,589 | 830,821 | 127,209 | 401,691 | 3,745,253 | 720,041 |

${ }^{1}$ Ten inches D.B.H. or over (suitable for saw timber).
${ }^{2}$ Four to nine inches D.B.H. (units of 85 cu . feet).

Tenure of Forest Land.-Corporations and private individuals own 9 p.c. of the productive forest land of Canada and 91 p.c. 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 22 p.c. 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 4 p.c. of the total accessible productive forest. These small wooded tracts, ranging in size from three or four acres to 200 or more acres, are among the most accessible forests in Canada. Also, the woodlots 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 Occupied Productive Forest Land, by Province, 1962
(Net area in sq. miles)

| Province or Territory | Provincial Crown Land |  |  | Federal Crown Land |  |  | Privately Owned Land |  |  | Total Occupied Productive Forest Land |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Leases and Licences | Permits and Sales | Total |  | $\left\lvert\, \begin{gathered} \text { Permits } \\ \text { and } \\ \text { Sales } \end{gathered}\right.$ | Total | Farm Woodlots | Other | Total |  |
| Newfoundland. | 25,975 | - | 25,975 | - | - | - | 31 | 1,716 | 1,747 | 27,722 |
| Labrador. | 19,219 | - | 19,219 | - | - | - | - |  |  | 19,219 |
|  | 6,756 | - | 6,756 | - | 3 | 3 | 31 | 1,716 | 1,747 | 8,503 |
| Prince Edward Islan <br> Nova Scotia. |  | 21 | $\overline{1,169}$ | - | $3{ }_{3}^{3}$ | 3 31 | 428 2,130 | 18181 9,551 | 809 11,681 | 812 12,881 |
| New Brunswick. | 10,403 | 21 | 10,403 | - | 358 | 358 | 1,923 | 10,686 | 12,609 | 23,370 |
| Quebec. | 75,939 | - | 75,939 | - | 225 | 225 | 7,030 | 12,278 | 19,308 | 95,472 |
| Ontario. | 83,073 | - | 83,073 | - | 1,269 | 1,269 | 5,086 | 11,105 | 16,191 | 100,533 |
| Manitobs. | 1,488 | 847 | 2,335 | - | 1,292 | 1,292 | 2,327 | 1,489 | 3,816 | 7,443 |
| Saskatchewan | 1,363 | 875 | 2,238 | 2 | 592 | . 592 | 3,338 | 2,492 | 5,830 | 8,660 |
| Alberta. | 7,109 | - | 7,109 | 294 | 1,338 | 1,632 | 3,317 |  | 3,317 | 12,058 |
| British Columbia. | 3,834 | 2,344 | 6,178 | - | 920 | 920 | 1,147 | 9,141 | 10,288 | 17,386 |
| Northwest Territo <br> Yukon Territory.. | - | - | - | 28 11 | 二 | 28 11 | - 1 | - | - | 28 12 |
| Canada | 210,332 | 4,087 | 214,419 | 333 | 6,028 | 6,361 | 26,758 | 58,839 | 85,597 | 306,377 |

## Section 3.-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 average annual rate and cause of depletion of reserves of merchantable timber during the ten years 1951-60, together with annual data for 1960 and 1961, are given in Table 4. Of the total depletion of the forests in the ten-year period, 92 p.c. was utilized and 8 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.) The average annual utilization of $3,223,029,000 \mathrm{cu}$. feet comprised 48 p.c. logs and bolts, 40 p.c. pulpwood, 10 p.c. fuelwood, and 2 p.c. miscellaneous products. About 5 p.c. of the total utilization was exported in the form of logs and bolts and pulpwood.

The accessible portion of the productive forests of Canada, covering an area of 719,919 sq. miles, constitutes 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 $587,459,000,000 \mathrm{cu}$. feet and the utilization in 1961 of $3,303,289,000 \mathrm{cu}$. feet therefore represented less than 1 p.c. of the accessible productive volume. However, it should be noted that utilization does not occur evenly throughout the accessible 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 a dominant position in the Canadian economy.

The more efficient utilization of cut timber is an important factor related to forest depletion, for there is little doubt that in the past too high a percentage of the sawn log was discarded. However, changes of great significance have taken place recently in the uses of wood, permitting the utilization of sizes, qualities and species previously considered unmerchantable. The development and manufacture of rayon, cellophane and other products of the cellulose industry have extended the use of wood and the increasing production of plastic-wood products, fibre board and laminated wood has resulted in greater use of inferior grades of wood and species of trees and therefore in the more complete utilization of forest resources and the elimination of much waste.

## 4.-Forest Utilization and Depletion, 1960 and 1961 compared with Ten-Year Average 1951-60

| Item | Usable Wood |  |  | Percentages of Total Depletion |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { Average } \\ 1951-60 \end{gathered}$ | 1960 | 1961 | $\begin{aligned} & \text { Average } \\ & \text { 1951-60 } \end{aligned}$ | 1960 | 1961 |
|  | M cu.ft. | M cu. ft. | M cu. ft. |  |  |  |
| Products UtilizedLogs and Bolts- |  |  |  |  |  |  |
| Domestic use. | 1,543,657 | 1,722,114 | 1,667,238 | 43.9 | 45.3 | 28.0 |
| Exported... | 7,352 | 5,898 | 17,753 | 0.2 | 0.1 | 0.3 |
| Domestic use. | 1,151,574 | 1,314, 138 | 1,217,439 | 32.8 | 34.6 | 20.5 |
| Exported. | 154,829 | 97,911 | 97,875 | 4.4 | 2.6 | 1.6 |
| Fuelwood. | 304,696 | 243,453 | 242,608 | 8.7 | 6.4 | 4.1 |
| Other products. | 60,921 | 47,951 | 60,376 | 1.7 | 1.3 | 1.0 |
| Totals, Utilization. | 3,223,029 | 3,431,465 | 3,303,289 | 91.7 | 90.3 | 55.5 |
| WastageBy forest fires. | 293,263 | 369,606 | 2,649,996 | 8.3 | 9.7 | 44.5 |
| Totals, Depletion. | 3,516,292 | 3,801,071 | 5,953,285 | 100.0 | 100.0 | 100.0 |

Forest Fire Statistics.-A record 8,655 forest fires burned in Canada during 1961. The area burned was nearly five times the annual average for the previous ten years. Volumes of timber lost in 1961 were about seven times greater than in 1960 and nine times more than average losses experienced between 1951 and 1960. Monetary losses were estimated at a record level of $\$ 69,000,000$ but this figure should be considered an approximation only since large portions of the area burned and timber damaged were in areas currently inaccessible for logging. Among the provinces, only Nova Scotia suffered less than average dollar losses and only Nova Scotia, Quebec and Alberta experienced smaller than average areas burned over.
5.-Forest Fire Losses, 1960 and 1961, compared with Ten-Year Average 1951-60

|  |  |
| ---: | :--- | ---: | ---: | ---: |

[^140]6.-Forest Fire Losses, by Province, ${ }^{1} 1960$ and 1961, compared with Ten-Year Average 1951-60

| Item | $\begin{gathered} \text { Average } \\ 1951-60 \end{gathered}$ | 1960r | 1961 |
| :---: | :---: | :---: | :---: |
| Newfoundland- |  |  |  |
| Forest fires........................................ No. | 194 | ${ }^{443}$ | ${ }^{3}{ }^{304}$ |
| Area burned......................................... acres | 19,177 | 70,750 | 1,047,914 |
| Fire fighting cost and damage.......................... \$ | 131,541 | 410,289 | 8,281,471 |
| Nova Scotia- <br> Forest fires | 310 | 605 | 460 |
| Area burned......................................... acres | 7,130 | 21,266 | 5,500 |
| Fire fighting cost and damage.......................... | 104,886 | 228,978 | 90,527 |
| New Brunswick- |  |  |  |
|  | 7,410 | 483 29,916 | 14,735 |
|  | 105,076 | 500,167 | 406,974 |
| Quebec- |  |  |  |
| Forest fires............................................ No. | 857 | 874 | 850 |
| Area burned. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . acres | 183,097 | 127,668 | 67,241 |
| Fire fighting cost and damage............................ \$ | 1,885,076 | 4,126,221 | 1,956,996 |
| Ontario- |  |  |  |
| Forest fires............................................ No. | 1,288 | 956 | 1,305 |
| Area burned......................................... acres | 96,977 | 31,386 | 1,184,728 |
| Fire fighting cost and damage........................... \& | 1,929,197 | 1,128,461 | 34,263,979 |
| Manitoba- |  |  |  |
| Forest fires............................................ No. | 290 | 448 | 707 |
| Area burned...................................... acres | 246,994 | 412,149 | 2,724,978 |
| Fire fighting cost and damage............................ \$ | 445,112 | 996,680 | 7,233,726 |
| Saskatchewan- |  |  |  |
| Forest fires............................................. No. | 158 | 236 | 507 |
| Area burned....................................... acres | 93,919 | 462,577 | 1,948,363 |
| Fire fighting cost and damage............................ \$ | 301,066 | 1,744,830 | 4,284,114 |
| Alberta- |  |  |  |
| Forest fires........................................... No. | 258 | 474 | 811 |
| Area burned............................................. acres | 222,135 | 19,960 | 193,545 |
| Fire fighting cost and damage.............................. $\mathrm{s}^{\text {a }}$ | 2,291,930 | 798,284 | 5,632,721 |
| British Columbia- |  |  |  |
| Forest fires.......................................... No. | 1,726 | 2,635 | 3,102 |
| Area burned........................................... acres | 383,025 | 285,820 | 1,227,159 |
| Fire fighting cost and damage.......................... \& | 3,508,825 | 8,591,970 | 17,809,674 |
| Federal Lands- |  |  |  |
| Yukon Territory- |  |  |  |
| Forest fires......................................... No. | 61 | 49 | 50 |
| Area burned......................................... acres | 235,766 | 21,102 | 95,276 |
| Fire fighting cost and damage............................. ${ }^{\text {a }}$ | 286,321 | 31,949 | 753,428 |
| Northwest Territories- |  |  |  |
| Forest fires. $\qquad$ No. | 66 | 92 | 167 |
| Area burned............................................ acres | 451,759 | 101,682 | 758,230 |
| Fire fighting cost and damage............................ \& | 312,255 | 175,373 | 1,808,706 |
| National Parks- |  |  |  |
| Forest fires........................................... No. | 32 | 36 | 63 |
| Area burned.......................................... acres | 3,362 | 9,129 | 45,560 |
| Fire fighting cost and damage............................ \& | 26,342 | 116,207 | 152,790 |
| Indian Lands- |  |  |  |
|  | 2 | 65 | 2 |
| Area burned . .................................... acres | 2 | 25,310 | 2 |
| Fire fighting cost and damage........................... \& | 2 | 75,237 | 2 |
| Other Federal Lands (incl. military areas)- |  |  |  |
| Forest fires............................................. No. | 17 | 15 | 9 |
| Area burned...................................................... | 550 2,368 | 55 936 | 250 1,290 |
| Fire fighting cost and damage.............................. | 2,368 | 936 | 1,290 |

[^141]As shown in Table 7, lightning caused 34 p.c. of the forest fires in 1961. Although of record proportions, this figure does not convey the full importance of lightning as a fire cause. In Ontario and New Brunswick, lightning-caused fires accounted for 99 p.c. and 90 p.c., respectively, of the areas burned. For Canada as a whole, more than 50 p.c. of the area burned resulted from lightning fires. Human carelessness remained a major cause of forest fires, smokers and campers being the worst offenders.
7.-Forest Fires, by Cause, 1960 and 1961, compared with Ten-Year Average 1951-60

| Cause | Average 1951-60 |  | 1960 |  | 1961 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | p.c. | No. | p.c. | No. | p.c. |
| Campfires. | 843 | 15 | 994 | 13 | 1,085 | 13 |
| Smokers.. | 1,014 | 18 | 1,055 | 14 | 1,596 | 18 |
| Settlers.. | 529 | 10 | 495 | 7 | 774 | 9 |
| Railways. | 461 | 8 | 536 | 7 | 296 | 3 |
| Lightning | 1,236 | 23 | 2,237 | 31 | 2,901 | 34 |
| Industrial operations. | 288 | 5 | 338 | 5 | 391 | 5 |
| Incendiary .......... | 168 | 3 | 286 | 4 | 367 | 4 |
| Public works. | 108 | 2 | 100 | 1 | 115 | 1 |
| Miscellaneous known. | 590 | 11 | 846 | 12 | 638 | 7 |
| Unknown.. | 259 | 5 | 459 | 6 | 492 | 6 |
| Totals. | 5,496 | 109 | 7,346 | 100 | 8,655 | 100 |

# 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. Prior to Oct. 1, 1960, when the Department of Forestry Act became effective, research in forestry and forest products and certain other forestry activities was carried out by the Forestry Branch of the Department of Northern Affairs and National Resources under the authority of the Canada Forestry Act of 1949. Research in forest insects and diseases was conducted by the Forest Biology Division of the Department of Agriculture. These organizations were combined in the Department of Forestry.

The Department of Forestry Act (which repealed the Canada Forestry Act) sets out the duties, powers and functions of the Minister of Forestry as extending to and including "all matters over which the Parliament of Canada has jurisdiction relating to the forest resources of Canada". The main functions of the Department 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 Minister may consult with and inaugurate conferences of provincial or municipal authorities, universities, representatives of industry or other interested persons. The Act provides for the establishment of laboratories and other necessary research facilities, and of forest experimental areas on federal lands and for regulations for the protection, care and management of such areas.

To carry out its responsibilities, the Department maintains an Administration Branch, three Research Branches and an Economics Division. The Administration Branch includes those units of the Department not engaged in scientific research or economic studies. It is composed of five Divisions: Provincial Agreements, Forest Management, Information and Technical Services, Personnel Services and Administrative Services. The Provincial Agreements Division is concerned with the administration of federal-provincial cost-sharing agreements (see p. 500). The Forest Management Division conducts forest surveys on federal lands throughout Canada and provides advice and assistance regarding forest management to the administering agencies. It also provides for the management of forests including timber disposal in certain areas on behalf of other government departments, the most important of these being the military training area, Camp Gagetown, in New Brunswick. Co-operation is extended to the External Aid Office in administering technical assistance programs involving forest surveys in other countries. The Information and Technical Services Division includes both operating and servicing functions in that it provides a program of public information on forestry as well as library, editorial and technical services. A comprehensive public relations and information program, in course of development, will include the production and distribution of a number of lay publications designed to increase public awareness of the importance of Canada's forest resources and the need of conserving them; the distribution of scientific publications and the interpretation of the scientific work of the Department to the general public; the use of press, radio, and television facilities; the production of exhibits, displays and posters; and the maintenance of a photographic library dealing with forestry subjects. The Personnel Services and Administrative Services Divisions are servicing elements for the Department as a whole.

The functions of the three Research Branches and the Economics Division are described in the following paragraphs.

Forest Research Branch.-The functions of this Branch 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 program is conducted through seven district offices across Canada and often in co-operation with other federal departments, provincial forest authorities, other research agencies, universities and industry.

Forest management research deals with silviculture, tree biology, forest land and forest mensuration. Many of the silvicultural studies involve (a) assessing the factors responsible for the success or failure of natural regeneration following various cutting methods and treatment of seed beds, (b) comparing different methods of seeding and planting, and (c) 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 are 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 the seedlings of many important species of trees. 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 in mensuration 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. The use of stand volume tables and various methods of field sampling are being investigated and compared. Research is continuing in methods for measuring tree images and tree shadows to determine heights, crown widths, canopy density and other data from photographs taken in different seasons of the year 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.

Adequate protection of forests against fire is of vital importance in Canada. The Forest Research Branch works in full co-operation with provincial forest services in almost all phases of forest fire control. Major contributions of the Branch have been in the fields of fire danger measurement and fire control planning. Investigations are being made of forest fire behaviour, of the use of prescribed fire for hazard reduction and seed bed preparation, of how to improve the reporting of 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 fire fighting equipment and techniques, and of the use of aircraft in forest fire control. Another important field of endeavour is the study of lightning and other fire causative agencies.

Forest Products Research Branch.-The work of this Branch is directed toward obtaining the necessary background information and 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 available from the forest. Its activities, covering every aspect of forest products except that relating to paper, include the determination of the physical, mechanical and chemical properties of wood and their relation to adaptability in use; studies of the factors affecting the quality of wood and of manufactured wood products; determination of the factors that cause wood waste in logging and manufacturing; research and investigation into fire retardant treatments, the preservative treatment and painting of wood and the use of wood for the manufacture of cellulose, wallboards, alcohols, organic acids, and extractives; studies to determine possible new economic and more valuable uses for woods; and research aimed at determining methods and means for the practical and economical utilization of all wood substances available from the annual timber harvest.

The program is conducted at two laboratories-one at Ottawa and the other at Vancouver-with units consisting of timber engineering, containers, glues and gluing, veneer and plywood, timber physics, wood chemistry, wood preservation, paints and coatings, wood pathology, wood anatomy, logging, lumber manufacture and lumber seasoning. The results of Branch Research are made available to the thousands of plants comprising Canada's timber manufacturing and wood-using industries. By means of numerous technical publications and through other channels, continuous effort is devoted to the widespread dissemination of research results.

Close liaison is maintained with the forest products industries and the users of timber to ensure that the work of the Branch is of optimum national benefit. Assistance is received from a National Advisory Committee comprising members representing lumber manufacturers and other wood-using groups. There is constant co-operation with various government units in the performance of many special research investigations concerned with the use of wood. Research into the use of wood in housing construction and as an engineered material continues as an important activity that is undertaken in co-operation with the National Research Council and the Central Mortgage and Housing Corporation.

Officers of the Industrial Liaison Service of the Branch visit sawmills and other woodworking plants in their respective regions to keep industry aware of research developments and technical advances which may assist in the solution of industrial problems. The field representatives also keep the laboratories informed of field problems on which research would be of value.

Branch personnel serve on many national technical committees such as those of the Canadian Standards Association, as well as on such international committees as those of the American Wood Preservers' Association, the American Society for Testing Materials, the International Union of Forest Research Organizations, and the Food and Agriculture Organization of the United Nations. Continuous collaboration is maintained with forest products laboratories in other countries for the dual purpose of exchanging information and avoiding unnecessary duplication of research.

Forest Entomology and Pathology Branch.-This Branch conducts research on forest insects and diseases and maintains regional laboratories and field stations in all principal forested regions of Canada. The forest insect and disease survey is a Canadawide project conducted by the Branch in co-operation with the provincial forest services and forest industries, the primary objective of which is to maintain an annual census of forest insect and disease conditions, and to detect and predict the occurrence of outbreaks. Results of the survey are made immediately available to the owners and operators of forest lands for use in planning salvage programs and directing control operations or other measures to reduce damage. An important secondary objective of the survey is extension of knowledge of the insects and fungi affecting forest trees, including their life histories, ranges of distribution, and host-parasite relationships.

The research programs of the regional laboratories 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 nurseries. A recent development is the initiation of investigations of virus diseases of forest trees. Laboratory research on development, physiology, nutrition and taxonomy complements the field ecological studies of insects and fungi in the forest environment. Problems of broad national importance in insect pathology, cytology and genetics, bioclimatology and chemical control are investigated by Branch sections, which are appropriately staffed and equipped for research in these special fields.

The Forest Entomology and Pathology Branch also carries out experiments in control, utilizing cultural techniques, chemicals and biological control agents including parasites, predators and insect pathogens. Technical advisory services are provided in evaluating possibilities of eradication or control, or other applications of research results. Recent 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 with local authorities on the Dutch elm disease problem in New Brunswick, Quebec and Ontario, designed to limit spread and damage through control of the disease vectors and sanitation procedures; and technical co-operation with provincial governments and industrial agencies in the organization of spraying operations against the spruce budworm in New Brunswick and Quebec, and the black-headed budworm, the saddle-backed looper and the ambrosia beetle in British Columbia.

Economics Division.-The functions of the Economics Division are to advise the Department regarding the economic implications of present and proposed policies; to keep the economic position of Canada's forest industries under review; to keep in touch with forestry and international developments in other countries; and to contact economic studies relating to forestry in Canada. Co-operation with international organizations concerned with forestry and in which Canada maintains membership includes the preparation of quarterly and annual statistical reports to the Food and Agriculture Organization of the United Nations and to the Organization for Economic Co-operation and

Development. A National Forest Inventory is compiled annually from information supplied by provincial governments and published by the Dominion Bureau of Statistics in a series entitled Canadian Forestry Statistics. This information is also included in Canada's submission to FAO for use in compiling the World Forest Inventory every five years.

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 repealed and replaced by the Department of Forestry Act, 1960. 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 Department of Forestry Act, a new forestry agreement was entered into with the provinces for a term of two years starting Apr. 1, 1962, covering in a "single package" the federal aid formerly available under three separate agreements. The amount of federal aid provided for the period is $\$ 16,000,000$.

The main feature of the new agreement is flexibility. A province may spend its entire allotment for forest access projects, which include construction of access roads and airstrips for forestry purposes. Up to 60 p.c. of the provincial allotment may be claimed for inventory, reforestation, fire protection and, for the first time, stand improvement projects. A province, therefore, has wide discretion in allocating federal aid among the specified fields of work. 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, $\$ 2$ per acre seeded and $\$ 4$ per acre seeded with ground preparation. In addition, 25 p.c. of the cost of establishing new forest nurseries is contributed.

Costs of management-type surveys are included in the new 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 $\$ 32,000,000$ in federal funds have been contributed to the provinces under the main forestry agreements, plus $\$ 5,000,000$ for aerial spraying against budworm infestations in New Brunswick and, on a smaller scale, in British Columbia, and $\$ 472,000$ under a special stand improvement agreement with the Province of 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 15 new forest nurseries and the planting of $178,000,000$ trees. Federal contributions of more than $\$ 7,000,000$ 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, with the Federal Government contributing more than $\$ 12,000,000$.

## Subsection 2.-Provincial Forestry Programs

All forested land in provincial territory, with the exception of the minor portions in National Parks, federal forest experiment stations, military areas and Indian reserves (see Table 2, p. 32), 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 forested land of the Island is estimated at 12,998 sq. miles and of Labrador at 20,879 sq. miles, a total of 33,877 sq. miles. Only 578 sq. miles are classified as farm woodlots. Most of Labrador's forests are leased but are as yet virtually untouched.

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 population. Within this coastal forest belt, every household has legal right to cut $2,000 \mathrm{cu}$. feet 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 over-mature or damaged by fire, insects or storms.

The Island of Newfoundland is divided into three Forest Regions, each under the control of a Forest Supervisor; the regions, in turn, are each divided into five districts. Districts are headed by a Forest Inspector having a staff of wardens and rangers. Twentyeight well-equipped forest fire depots and 21 lookout towers, connected by radio-telephone, are operated by the Newfoundland Government, and many others are operated by the two paper companies, the Newfoundland Forest Protection Association and the Canadian National Railways. Aircraft, equipped with water-dropping tanks, are stationed at Gander throughout the fire season; they patrol forest areas and transport equipment and crews when necessary. Helicopters are used as well. Forest fire protection facilities have also been established in Labrador, the main base being at North West River near Goose Airport, and a sub-depot in the Carol Lake iron ore development area. The permanent forestry staff of the Newfoundland Department of Mines, Agriculture and Resources, numbering 75, is augmented by a like number of seasonal employees during the forest fire season. The two paper companies maintain their own fire protection organizations.

Forest research for Newfoundland is performed by the federal Department of Forestry. No reforestation is done in the province.

Prince Edward Island.-Almost all of Prince Edward Island's woodland is privately owned, so that the Forestry Division of the Department of Industry and Natural Resources 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 his 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 sq. miles. Of that area, $16,389 \mathrm{sq}$. miles are classed as forested, 92 p.c. of which is regarded as productive. For Canada as a whole, 91 p.c. of the forested land is held by the Crown in the right of the federal or provincial governments but in Nova Scotia only about 22 p.c. is so held.

The provincial Crown lands are administered by the Department of Lands and Forests through a staff of foresters and rangers. Similarly, trained personnel are associated with the forest industry 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 on all lands, regardless of tenure. Forest fire detection is facilitated by 30 observation towers and an aerial patrol service, all integrated with land vehicles and headquarters by radio and telephone communication systems. Well-equipped fire suppression crews and rangers are stationed throughout the province.

The forest industry is of prime importance to the economy of Nova Scotia. There are in operation some 500 sawmills of all sizes, one newsprint mill, two groundwood pulpmills and a chemical pulpmill. These mills, along with the pulpwood export trade, pit prop production, boxwood and barrel production, as well as other facets, produced about $245,000,000 \mathrm{ft}$.b.m. of lumber and about 450,000 cords of round products in 1962. Recently, several large, more efficient stationary lumber mills have been established, equipped for the production of pulp chips from sawmill residue. Tremendous strides have been made in the utilization of slabs, edgings and trim for this purpose and a profitable increase of 30 p.c. has been achieved in utilization of the total wood fibre of the sawlog.

An active reforestation program has been conducted for many years. Although not as ambitious an undertaking as in some parts of Canada, the program is being expanded in areas where there are less fortunate circumstances relative to natural regeneration. There are six forest nurseries in operation throughout the province. Forest management programs include the construction of access roads into Crown land timber areas and stand improvement under the federal-provincial agreement. Timber, pulpwood and Christmas trees are sold through public tender and cutting is done under the recommendation of the district foresters of the Department of Lands and Forests. Management cruises, regeneration studies and experimental cuttings are conducted on Crown lands.

Forest research is carried on by Federal Government agencies and the Nova Scotia Research Foundation (see p. 377). Investigations involve stand improvements, cutting methods, and insect and disease activities. Extension projects include an active fire prevention campaign, a motion picture program for schools, distribution of information on forest and wildlife conservation, promotion of the Christmas tree industry, and preparation of articles for general distribution, for newspapers and for magazines.

New Brunswick.-Of the total area of New Brunswick ( 28,354 sq. miles), approximately 85 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 $16,900,000,000 \mathrm{cu}$. feet; 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, colonization, 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. Stumpage dues are 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 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 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 forested lands of the Province of Quebec cover an area of 378,132 sq. miles extending from its southern borders to latitude $52^{\circ}$ north, between the frontier of Labrador in the east, and the Eastmain River Basin in the west. Of this total, 89,131 sq. miles are classed as occupied productive forest land, 23,175 sq. miles of it privately owned, 227 sq. miles federal Crown forests and the remainder provincial Crown land on which leases and permits have been granted. Thus, approximately 256,000 sq. miles of the forest lands of Quebec are inaccessible or vacant. About two fifths of the annual cut comes from privately owned lands.

The limits reserved for forest industries are administered by the Department of Lands and Forests and the technical work such as inventory, reforestation, supervision of cutting, control of culling, verification of plans for development, collection of stumpage dues, etc., is the responsibility of the Forest Service. These limits are either leased by auction after public notice has been given or assigned under a special law. The price of the licence is fixed by auction or by Order in Council subsequent to specific legislation. The government reserves the right to dispose of the water powers situated on the limits leased.

A tree-felling permit, which is valid for one year, is renewable if the holder has complied with the conditions imposed; it may be transferred with the authorization of the Minister of Lands and Forests. The lessee of a limit must pay a ground rent in addition to the price of licence and must forward, three months before the cutting begins, a plan of operations. Wood cut must be measured by a licensed culler and at the end of the operations the limit holder must produce a sworn statement of quantities cut.

The Forest Service endeavours to promote the use of silvicultural methods among the owners of farm woodlots and small forest areas.

Quebec's forest protective system comprises three organizations-the Protective Service, the protective associations and the non-affiliated lease holders or owners. The Protective Service is a government body established within the Department of Lands and Forests in 1924 to enforce legislation and regulations governing forest fire protection and to protect vacant Crown lands, township reserves and colonization territories. The protective associations, of which there are six, are syndicates of lease holders and of owners who have availed themselves of their right to form an association to satisfy the law which compels them to protect their limits or private forests of 2,000 acres or over. Members assume operating expenses in proportion to the area owned by each but the Department assumes half the costs of fire fighting incurred by the associations. The third group is composed of lease holders and of owners who prefer to discharge their obligations personally as far as forest protection is concerned. They enjoy the same privileges and their obligations are the same as those imposed upon the associations.

To perpetuate the forestry program of the province, the Department has established a number of nurseries, the first at Berthierville in 1908. This nursery has three sections: one wooded with a variety of valuable species of mature age, one serving agricultural purposes, and another devoted to forestry experiments and the cultivation of trees for reforestation or ornamentation. More recently, the Grandes Piles nursery and the Gaspe nursery were organized and there are also nurseries in the following counties: AbitibiEast, Témiscamingue, Saguenay, Îles de la Madeleine, Rimouski, Roberval, Rivière du Loup, Témiscouata and Chicoutimi. Their object is the preparation of plants for reforesting nearby districts. 'Floating' nurseries, supervised by the engineers of the Forest Extension Bureau and intended especially for growing reforestation plants for private properties, are located at Pont Rouge, Sherbrooke, Scott, St. Hyacinthe, Victoriaville, Mont Joli and St. Pascal. The plants are supplied free of charge on request. A dynamic reforestation program is now under way in the province, with an ultimate objective of $10,000,000$ plants yearly on private grounds.

The Bureau of Silviculture and Botany and the Forestry Products Laboratory, both subsidized by the Department, are actively engaged in scientific research work in the forestry field. The Bureau studies the possibilities of utilizing spoil-heaps of gold and asbestos mines, tests the fertility of soils in the spruce groves, classifies forests according to type of vegetation, and studies growth and yields of stands in the timber limits by means of permanent research spots. The Forestry Products Laboratory, located at the Duchesnay Forestry Station, studies developments in the field of chemical conversion of wood and in the use of forestry by-products.

Ontario.-The management of the forest resources of this province is based upon the Crown Timber Act and the management unit is used as the basic administrative area. For each management unit a plan is prepared according to the Manual of Management Plan Requirements and is submitted to the Minister of Lands and Forests for analysis and approval. All forest activities contemplated during the operating period-cutting, re-establishment and tending-are listed in detail in the operating plan, which is part of and carries out the intent of the management plan. Management plans are revised every 20 years on the up-to-date data of new aerial photographs and a forest re-inventory. The number of management units is subject to change at the time of plan revision, owing to abandonment or acquisition of timber licences and to division or consolidation of management units. During 1962, 204 management units, classified by ownership and the rights to timber, were recognized: 78 Crown management units, 79 company units, 42 agreement forest units, and five nursery forest units. The 78 Crown management units, for which the plans are prepared by Department staff, occupy $53,829,120$ acres; of these units, one is operating under a revised plan, 14 are undergoing scheduled plan revision and 63 are operating under the initial plans. The 79 company management units, for which the management plans are prepared by the licensees, occupy $63,991,680$ acres; of these units, 67 are operating under approved management plans and 12 are either in the process of revision or initial preparation. The plans for the 42 agreement forest units are scheduled for preparation by Department staff over an eight-year period. The plans for the five forests, adjacent to the forest tree nurseries operated by the Department, cover approximately 9,000 acres and will be prepared by the Department staff upon completion of the inventory program.

On Crown lands during 1962, 90 stand improvement projects were carried out on a gross area of 23,218 acres. These projects were designed to secure adequate regeneration following cutting operations or to improve growth and quality of young stands of timber. In addition, 23 stand improvement projects, covering 1,304 acres, were carried out by junior rangers during the course of their summer training. During the year, on Crown lands and agreement forests $30,932,000$ trees were planted on 49,303 acres and two helicopter seeding projects on 255 acres were undertaken. Stand improvement work was carried out on 7,759 acres of 37 agreement forests including harvest cutting, cleaning,
pruning, thinning and girdling. In addition to normal woods labour, over 6,000 man-days of inmate labour from three minimum security camps (see p. 404) were used on stand improvement projects in Crown and agreement forests units.

The volume of wood of all species cut from Crown land during the year ended Mar. 31, 1962 was lower by approximately $1,000,000$ cu. feet than that cut during the previous fiscal year, representing a decrease of 4.0 p.c. in the cut of softwood species and 1.4 p.c. in the cut of hardwoods. The volume of primary pulpwood species cut (spruce, balsam, and jack pine) increased by about $4,400,000 \mathrm{cu}$. feet. An over-all decrease in the pulpwood cut is accounted for by a reduced cut in other softwood species.

Forest research was continued in 1962 on the growth characteristics and relationships in their stands of the principal tree species, with the object of developing cultural practices to ensure maximum production. The site research program continued to provide a framework for forest management by classifying and mapping combinations of land form, soil and climate, and rating the various combinations for tree growth. The applicability of this classification to land use was tested. Tree breeding was continued in the development of disease-resistant white pine and poplars of rapid growth and good form. Experimental work was pursued toward the improvement of nursery and planting techniques. Mensurational studies involving growth and yield, and possible substitutions for log scaling were carried on. Testing of pumps and other forest fire protection equipment continued. A special study was made of airborne infrared heat sensory equipment for fire detection.

During the 1962 forest fire season, 1,510 fires occurred in Ontario, burning an estimated total of 13,700 acres. Although the number of fires was about 15 p.c. above the annual average for the previous decade, the area burned was the third lowest on record. Lightning accounted for 20 p.c. of the fires reported. The Department's fire-fighting fleet consisted of 33 Beaver aircraft, 10 Otter aircraft and one Super Widgeon and operated out of 28 air bases during the fire season, logging 14,485 hours of flight time; 11 of these bases were operated throughout the year. In addition, five leased Bell Super-G type helicopters were used between May 1 and Sept. 30 and a large Vertol H21 with a 200-gal. water tank was employed on fires in the Kapuskasing and Sudbury areas.

Manitoba.-The forests of Manitoba are administered by the Forest Service, a Branch of the Department of Mines and Natural Resources. The Service is headed by a Provincial Forester and for purposes of administration the province is divided into eight Forest Regions each in charge of a Regional Supervisor responsible to the Provincial Forester for forest activities within his region. The Forest Service is also responsible for the development, maintenance and operation of parks and recreation on Crown lands throughout the province (see p. 40).

The cutting of timber is governed by timber sale, licensed timber berth, pulpwood lease, or timber permit. Timber sales are disposed of by public auction or sealed tender and cover periods of from one to seven years; timber berths cover certain areas granted before 1930, the date of the transfer of the natural resources from the Federal Government to the province; pulpwood leases are granted over an area of $2,748 \mathrm{sq}$. miles; and timber permits are granted to settlers and small operators at appraised rates for a period of one year or less. On the basis of a forest resources inventory completed in 1956 and other information, working plans with annual allowable cuts on a sustained-yield basis have been brought into operation in the more accessible areas.

Forest fire protection is a most important activity of the Forest Service. Fires are detected by air patrol, lookout tower and road patrol, and rapid communication is maintained within the Service by radio and telephone. The Air Service transports men and equipment to fires in areas beyond the reach of roads. The main air base is at Lac du Bonnet and summer air bases are maintained at The Pas, Norway House and Thicket Portage. The total area under fire protection is about $97,000 \mathrm{sq}$. miles.

Regeneration of the forest is dependent mainly on natural means although over $10,000,000$ trees were planted during the past ten years as part of the federal-provincial
agreement (see p. 500). The Pineland Forest Nursery is operated at a point near Hadashville to supply planting stock for denuded areas of Crown land and to furnish farmers with shelterbelt and woodlot seedlings.

The province has no forestry research organization but co-operates with several federal services which maintain two research areas. The Department co-operates fully with federal authorities in investigating and controlling forest damage resulting from insects and diseases. The Forest Service also carries out public education in the fields of fire prevention and forest conservation. Use is made of all usual methods including radio, television, newspapers, signs, talks to school children and club members, film tours, etc.

Saskatchewan.-The forests of Saskatchewan are located mainly in the northern half of the province and cover 147,360 sq. miles, including watered areas, or 58 p.c. of the total 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 Regional Administration Branch. For purposes of resource administration, the province is divided into five 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. Close liaison is maintained between the Forestry Branch and the Regional Administration Branch.

A major responsibility of the Forestry Branch is the development of techniques in the prevention, detection and suppression of forest fires. A network of 70 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 takes immediate suppression action which it maintains until relieved by overland crews. Northern Saskatchewan's communication system, with more than 850 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 have been assisted recently by the use of helicopters.

Alberta.-The 159,064 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 is composed of four forestry branches under a Director of Forestry-Administration, Forest Protection, Forest Management and Forest Surveys.

The Administration Branch supervises all branches, maintains general control over revenue and expenditure, deals with personnel and conducts a Forestry Training School which offers in-service training for forest officers and other employees.

The Forest Protection Branch has charge of the protection of the forests. For ease of administration the forested area has been divided into seven Divisions, each responsible for the forest within its boundary. These Divisions are composed of Ranger Districts in which all activities are supervised by the district forest officer responsible to his divisional superintendent. The divisional staffs include: forest superintendent, assistant forest superintendent, divisional forester, chief ranger, mechanical foreman, chief check scaler, assistant check scaler, divisional clerk, assistant clerk, radio operator, stenographer, and seasonal help such as standby fire crews, forest lookout men and general labourers and construction crews. These employees are responsible for fire prevention and suppression, supervision of logging and milling operations, timber cruising, and construction and maintenance of forestry projects.

The functions of the Forest Management Branch include the approval and acceptance of management and annual operating plans prepared for Crown lands, proper land
use and proper disposal of Crown timber. This extends to all phases, including acceptance of applications, cruising of timber, drawing up of contracts, periodic inspections of areas to assure proper logging and utilization practices, scaling of products cut, collection of dues and reforestation of areas denuded through cutting, fire, etc.

The Forest Surveys Branch maintains the provincial forest inventory and prepares and maintains detailed inventories by management units; prepares long- and short-term management and protection plans; provides timber application forest-type maps; conducts other work pertaining to photogrammetry and forest-cover maps; and provides technical drafting and mapping services to the Forest Service and general public.

Conservation of 9,000 sq. miles of forest comprising the Rocky Mountains Forest Reserve is administered by the Alberta Forest Service. The area is composed of three forests which are subdivided into ranger districts. The Superintendent in charge of each forest is responsible to the Director of Forestry; his decisions are based on policies formed by the Board, which comprises one federal and two provincial members. This Reserve includes the headwaters of the main prairie river system.

Research in general is carried out by the federal Department of Forestry, which maintains the Kananaskis Experiment Station.

British Columbia.-The productive forest land of British Columbia in 1958 was inventoried at $208,411 \mathrm{sq}$. miles and, in addition, there were $59,227 \mathrm{sq}$. miles of forest land classed as non-productive. Of the productive area, immature timber occurred on 95,739 sq. miles; 84,275 sq. miles carried matured timber with a total volume of $251,000,000,000$ cu. feet; $28,397 \mathrm{sq}$. miles, including areas of recent burn, cut-over or windfall not yet re-stocked, were unclassified.

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 of the Forest Districts into Ranger Districts. There are approximately 25 Ranger Districts 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 problem is urgent despite the fact that, with a present annual cut of approximately $1,340,000,000 \mathrm{cu}$. feet, the total inventory would appear sufficient to support present needs in perpetuity. One of the more spectacular results of sustained-yield administration 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 58 p.c. of the total forest cut each year and the interior cut for almost 42 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 exchange 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, Public Working Circles, and 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 establishment of the first "pulp harvesting" area in the vicinity of Prince George. This plan is unique in North America, calling for the integration of a "saw-log" economy with a new pulp industry. 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.

The need for a more effective forest fire suppression capability becomes increasingly urgent as the program of planned, sustained-yield management of the resource expands. Improved fire fighting techniques, the use of aircraft for patrol, transportation and fire bombing, employment of helicopters for rapid movement of fire suppression crews, and a gradually expanding system of lookouts are employed. However, the problem of accessibility remains serious. Close liaison with the federal Department of Forestry, which maintains laboratories in Vernon and Victoria, provides information about insect and fungal enemies of the forest.

## 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, 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 the 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, hydraulics 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 180.

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 principles 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 35 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 Chairman of the Chemistry Department

[^142]and 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 Research Associate in the McGill Chemistry Department, directs graduate student work in the physical chemistry of fibres, e.g., the forces that cause cellulose fibres in a water suspension to mat together to form paper. An Associate Professor of Chemical Engineering at McGill, who is a consultant to the Institute, directs graduate students in such chemical studies as the rate of drying of droplets and fibres. In addition, other members of the Institute's staff who likewise hold concurrent honorary positions at McGill assist in this student training 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.

## Section 5.-Forest and Allied Industries

This Section is concerned with the many industries employed in the felling of timber in the forest and its transformation into the numerous utilitarian shapes and forms required in modern living. The basic industries provide the raw materials for sawmills, pulp and paper mills and for a wide range of secondary industries that convert the products of the basic industries into more highly manufactured goods such as veneers and plywoods, sash and doors, furniture, and a vast range of industries using wood in any form in their processes. These industries, especially the pulp and paper industry and the lumber industry, contribute substantially to the value of the export trade of Canada and thereby provide the exchange necessary to pay for a large share of the imports purchased from other countries, particularly the United States.

Technological changes and market shifts are causing Canada to lose some of the unique advantages it has enjoyed in the forest products field. In an effort to remain competitive, changes are being brought about in the structure of Canadian forest-based industries and in the technologies employed. Much emphasis is also being placed on better utilization of the forest resources.

In British Columbia there is a continuing development of the pulp and paper industry which, unlike that in Eastern Canada, is integrated to a high degree with the lumber industry. An important feature of this integration is the use of smaller and defective logs uneconomical for the manufacture of lumber, and the use of sawmill and veneer mill residue in the form of pulp chips. In Eastern Canada the most significant developments in the pulp and paper industry have been the increasing use of hardwood species for pulp manufacture and the increase of speeds in paper machines which has improved productive capacity at relatively low costs. There is also continuing construction of new plants, notably in the Maritime Provinces, and this is leading to improved utilization through the use of sawmill residues for pulping material.

Significant changes are also taking place in the lumber industry in Eastern Canada. Sawmills are undergoing a gradual process of concentration into larger and more efficient units and employing modern electric, hydraulic and pneumatic equipment which permits
a high degree of mechanization and quality control. There is also a trend toward more complete integration through the acquisition of veneer and plywood mills and board plants. These factors are naturally leading to a higher degree of utilization which is exemplified by the conversion of sawmill residue for pulp chips.

The logging industry has been highly mechanized in Western Canada for a number of years and mechanization is now progressing rapidly in Eastern Canada, raising the output per man-day and leading to stabilization of employment in the woods. Ten years ago mechanical saws were just beginning to find general acceptance, but now they are found in all woods operations and the bucksaw is almost non-existent. Loading and transportation of logs and pulpwood is being done mechanically to an increasing extent with a consequent continuous reduction of the horse population in the woods. New and better logging machines are constantly being developed and experiments with pulpwood harvesting combines promise a high degree of mechanization in the woods wherever terrain conditions permit.

These and other changes are reflected in the following statistical data.

## Subsection 1.-Woods Operations

In connection with operations in the woods, the forests provide not only the raw materials for the sawmills, pulp mills, veneer mills, charcoal, excelsior and other plants, but also the logs, pulpwood and bolts for export in the unmanufactured state, and fuel, poles, railway ties, posts and fence rails, mining timber, piling and other primary products that are finished in the woods ready for use or export. A number of minor forest products help swell the total, such as Christmas trees, cascara bark, balsam gum, resin, etc.

Estimates of woods operations attempt to give actual production figures for all items and are based partly on provincial forest service data for volume. Value, as currently estimated, excludes transportation costs up to and including 1960. In 1961, transportation costs are included to conform with the total activity concept.

## 8.-Value of Woods Operations, by Product, 1957-61

| Product | 1957 | 1958 | 1959 | 1960 | $1961{ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Logs and bolts........ | 409,226 | 311,746 | 344,424 | 385,924 | 404,016 |
| Pulpwood... | 340,235 | 275,154 | 320,244 | 356,915 | 369,663 |
| Fuelwood. | 36,656 | 29,105 | 26,520 | 36,896 | 36,249 |
| Poles and piling. | 20,931 | 8,146 | 7,495 | 11,967 | 17,145 |
| Round mining timber. . | 3,033 | 2,568 | 2,137 | 1,881 | 1,463 |
| Fence posts. | 2,645 | 2,370 | 2,956 | 3,385 | 3,368 |
| Hewn ties. | 664 | 317 | 235 | 160 | 36 |
| Fence rails... | 327 | 276 | 268 | 253 | 255 |
| Wood for charcoal. . | 502 | 460 | 448 | 430 | 494 |
| Miscellaneous roundwood | 103 | 804 | 1,515 | 1,630 | 6,497 |
| Other products. | 8,732 | 7,665 | 9,474 | 7,047 | 6,849 |
| Totals | 823,054 | 638,611 | 715,716 | 806,488 | 846,035 |

[^143]9.-Volume and Value of Wood Cut in Woods Operations, 1952-61 and by Product 1961

| Year | Wood Cut |  | Year and Product | Wood Cut |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Equivalent <br> Volume of <br> Merchantable Wood ${ }^{1}$ | Total Value |  | Quantity Reported or <br> Estimated | Equivalent Volume of Merchantable Wood ${ }^{1}$ | Total Value ${ }^{2}$ |
|  | M cu. ft. | \$'000 | 1961 |  | M cu. ft. | \$'000 |
| 1952. | 3,205,383 | 763,189 | Logs and bolts.............. M ft.b.m. | 8,800,339 | 1,684,991 | 404,016 |
| 1953. | 3,078,066 | 704,539 | Pulpwood. . . . . . . . . . . . . . . . . . . cord | 15,474,266 | 1,315,314 | 369,663 |
| 1954. | 3,122,313 | 728,370 | Fuelwood....................... " | 2,993,845 | 239,508 | 36,249 |
| 1955. | 3,280,070 | 829,573 | Poles and piling............... No. | 1,654,709 | 24,820 | 17,145 |
| 1956. | 3,463,304 | 939,143 | Round mining timber........... cord | 77,394 | 6,578 | 1,463 |
| 1957. | 3,172,166 | 823,054 | Fence posts................... No. | 10,453,678 | 12,545 | 3,368 |
| 1958. | 2,854,670 | 638,611 | Hewn ties...................... " | 27,205 | 136 | 36 |
| 1959. | 3,186,387 | 715,716 | Fence rails..................... " | 769,345 | 770 | 255 |
| 1960. | 3,431,465 | 806,488 | Wood for charcoal. . . . . . . . . . . cord | 38,750 | 3,100 | 494 |
| 1961. | 3,303,289 | 846,035 ${ }^{2}$ | Miscellaneous roundwood. . . . . . .cu.ft. | ... | 15,527 | 6,497 |
|  |  |  | Other products ${ }^{3} \ldots \ldots . . . . . . . . . . . . . . .$. | ... | ... | 6,849 |
|  |  |  | Totals, 1961 | ... | 3,303,289 | 846,035 |

${ }^{1}$ In estimating the annual drain on Canada's forest resources, certain converting factors have been used, each of which represents in cubic feet the quantity of merchantable wood used to produce one unit of the material in question. The factor for logs and bolts for the British Columbia coastal region is 175 and for the remainder of Canada 200. Other factors: pulpwood and round mining timber 85, fuelwood and wood for charcoal 80, poles and piling 15, hewn railway ties 5 , fence posts 1.2 and fence rails $1 . \quad 2$ Includes transportation costs; see text on p. 510. $\quad{ }^{3}$ Chiefly Christmas trees but also includes balsam gum, cascara bark, etc.

## 10.-Equivalent Volume of Solid Wood Cut and Value of Products of Woods Operations, by Province, 1959-61

| Province or Territory | Equivalent Volume of Solid Wood |  |  | Value of Products ${ }^{1}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1959 | 1960 | 1961 | 1959 | 1960 | $1961{ }^{2}$ |
|  | M cu. ft. | M cu. ft. | M cu. ft. | \$'000 | \$'000 | \$'000 |
| Newfoundland.......... | 96,695 | 126,702 | 98,014 | 22,771 | 32,194 | 25,961 |
| Prince Edward Island. . | 10,594 | 10,834 | 10,157 | 1,430 | 1,546 | 1,637 |
| Nova Scotia.. | 89,612 | 98,095 | 96,747 | 18,441 | 20,024 | 19,777 |
| New Brunswick. | 172,602 | 187,297 | 193,346 | 33,060 | 40,716 | 44,097 |
| Quebec... | 877,158 | 879,914 | 914,096 | 215,287 | 212,620 | 239,529 |
| Ontario.. | 531,528 | 541,329 | 494,048 | 131,940 | 154,473 | 148,434 |
| Manitoba. | 51,766 | 45,255 | 37,602 | 7,948 | 7,382 | 6,264 |
| Saskatchewan. | 44,621 | 49,860 | 44,036 | 6,363 | 7,419 | 6,580 |
| Alberta.. | 135,003 | 148,485 r | 118,390 | 20,274 | 24,049 | 22,362 |
| British Columbia. | 1,173,965 | 1,337,997 r | 1,295,038 | 257,650 | 304,978 | 331,174 |
| Yukon and N.W.T. | 2,843 | 5,697 | 1,815 | 552 | 1,087 | 220 |
| Canada. | 3,186,387 | 3,431,465 r | 3,303,289 | 715,716 | 806,488 | 846,035 |

[^144]${ }^{2}$ Includes transportation costs; see text on p. 510.

## 11.-Principal Statistics of Woods Operations, 1955-61

| Year | $\begin{gathered} \text { Employees } \\ \text { (man- } \\ \text { years) } \end{gathered}$ | Salaries and Wages | $\begin{gathered} \text { Cost } \\ \text { of } \\ \text { Materials } \end{gathered}$ | $\begin{aligned} & \text { Net Value } \\ & \text { of } \\ & \text { Production } \end{aligned}$ | Gross Value of Production |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | \$'000 | \$'000 | \$'000 | \$'000 |
| 1955. | 149,000 | 506,000 | 100,459 | 729,114 | 829,573 |
| 1956 | 132,015 | 472,035 | 97,808 | 841,334 | 939,143 |
| 1957. | 119,944 | 430,805 | 89,942 | 733,113 | 823,054 |
| 1958. | 67,327 | 338,284 | 68,595 | 570,016 | 638,611 |
| 1959. | 82,551 | 347,406 | 57,004 | 658,712 | 715,716 |
| 1960. | 86,539 | 374,731 | 72,923 | 733,566 | 806,488 |
| 1961. | 94,681 | 422,374 | 137,576 | 708,459 | 846,035 ${ }^{2}$ |

[^145]
## Subsection 2.-Sawmills and Shingle Mills

The sawmill and shingle mill industry includes sawmills, tie, shingle, lath, stave, heading and hoopmills. In 1961, reports were compiled from 3,260 establishments. Many small mills previously included, which together produce less than 1 p.c. of the total, were excluded in the latest year as a result of the implementation of the revised Standard Industrial Classification. Also, beginning with 1961, in keeping with the conceptual approach in other industries, the formerly reported "value of products" was changed to "value of shipments and work done". The change affected mainly custom sawing; previously the lumber produced by custom sawing was actually valued but under the new approach only the value of work done, which is considerably lower, was taken into account. This difference should be noted when comparing 1961 figures with those for previous years.

Because of lack of comparable data, production and value figures for lumber and all sawmill products are given in Tables $\mathbf{1 2}$ and $\mathbf{1 3}$ for 1961 only. Principal statistics of the industry, given in Table 14, have been adjusted on a comparable basis back to 1957.
12.-Quantity and Value of Lumber Shipments and Value of Shipments of All Sawmill Products (Sawmill and Shingle Mill Industry only), by Province, 1961

| Province or Territory | Lumber Shipments |  | Value of Shipments of All Sawmill Products and Byproducts (incl. shingle mills) |
| :---: | :---: | :---: | :---: |
|  | Quantity | Value |  |
|  | M ft. b.m. | \$'000 | \$'000 |
| Newfoundland......... | 22,112 | 1,530 | 1,766 |
| Prince Edward Island. | 3,605 | , 225 | ${ }_{1} 331$ |
| Nova Scotia... | 139, 671 | 8,979 | 11, ${ }_{20}$ |
| New Brunswick | 239, 853 | 16,596 | 20,790 69035 |
| Quebec.... | 795,121 523,600 | 58,464 42,994 | 69,035 51,538 |
| Ontario.... | 523,600 19,890 | 42,994 986 | 51,538 1,287 |
| Saskatchewan. | -8,291 | 460 | 1,324 |
| Alberta. | 99,553 | 4,994 | 7,838 |
| British Columbia | 5,239,537 | 314,471 | 384,967 |
| Yukon and Northwest Territories. | 5,961 | 476 | 476 |
| Canada. | 7,097,194 | 450,177 | 550,919 ${ }^{1}$ |

${ }^{1}$ Includes $2,290,286$ squares of shingles valued at $\$ 20,122,623$ and $120,960,000$ laths at $\$ 1,422,980$.
13.-Quantity and Value of Lumber Shipments, by Species, 1961

| Kind of Wood | Quantity | Value |
| :---: | :---: | :---: |
|  | M ft. b.m. | \$'000 |
| Spruce. | 2,080,517 | 121,728 |
| Douglas fir. | 1,992,327 | 124,166 |
| Hemlock. | 1,314,552 | 77,682 |
| White pine.. | 286,792 | 25,249 |
| Cedar... | 544,414 | 38,183 |
| Yellow birch. | 129,426 | 14,064 |
| Jack pine. | 205,058 | 12,473 |
| Maple.. | 91,131 | 9,020 |
| Balsam fir. | 112,320 | 7,011 |
| Red pine. | 24,794 | 2,181 |
| Other. | 315,863 | 18,420 |
| Totals.. | 7,097,194 | 450,177 |

14.-Principal Statistics of the Sawmill Industry, 1957-61

| Year | Establishments | Employees | Salaries and Wages | Cost of Fuel and Electricity | Cost at Plant of Materials Used | Gross Value of Shipments | Value <br> Added by Manufacture |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| 1957. | 4,490 | 46,044 | 134,014 | 7,947 | 268,363 | 484.270 | 207,940 |
| 1958... | 4,004 | 43,484 | 134,346 | 8,762 | 262,455 | 480,674 | 209,454 |
| 1959.. | 4,003 | 45,128 | 138,456 | 9,337 | 275,115 | 508,100 | 223,649 |
| 1960..... | 3,719 | 43,886 | 145,450 | 9,501 | 295, 823 | 530,187 | 224,857 |
| 1961..... | 3,260 | 41,134 | 144,700 | 11,380 | 306,238 | 534,591 | 218,228 |

Exports.-Exports of lumber, shingles and shakes, and other sawmill products are given in Chapter XX on Foreign Trade, Part II, Table 11.

## Subsection 3.-The Pulp and Paper Industry

The manufacture of pulp and paper has been the leading industry in Canada for many years and the postwar development of the industry has more than kept pace with the vast industrial growth of the nation. Pulp and paper stands first among all industries in net value of shipments, in exports, in total wages paid and in capital invested. It is the largest consumer of electric energy and the largest industrial buyer of goods and services, including transportation, in the land. The industry has a newsprint output more than three times that of any other country and provides about $42 \mathrm{p} . \mathrm{c}$. of the world's newsprint needs.

There are three classes of mills in the industry. In 1961, 30 were making pulp only, 24 were making paper only and 71 were combined pulp and paper mills.

The industry includes several forms of industrial activity: operations in the woods with pulpwood as a product, the manufacture of pulp and paper of all kinds, and the manufacture of paperboards. Some of the important pulp companies operate sawmills to utilize the larger timber on their limits to the best advantage, and some lumber manufacturers divert a portion of their spruce and balsam logs to pulp mills. Only a small percentage of the pulpwood cut in Canada is exported in raw or unmanufactured form.
15.-Production, Consumption, Exports and Imports of Pulpwood, 1952-61

| Year | Production of Pulpwood in Canada ${ }^{1}$ |  |  | Canadian <br> Pulpwood Used in Canadian Mills ${ }^{1}$ | Canadian <br> Pulpwood <br> Exported <br> Unmanu- <br> factured | Imported <br> Pulpwood Used in <br> Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quantity | Value | Average Value per Cord |  |  |  |
|  | cords | \$ | \$ | cords | cords | cords |
| 1952. | 14,755,089 | 346,802,085 | 23.50 | 11,960,014 | 2,529,353 | 31,060 |
| 1953. | 13,545,181 | 309,011,150 | 22.81 | 12,060,853 | 1,783,657 | 48, 805 |
| 1954. | 14,739,571 | 323,800,478 | 21.97 | 12,875, 978 | 1,826,193 | 105,030 |
| 1955. | 16,087,951 | 369,476,288 | 22.97 | 13,494,496 | 1,882,784 | 134,917 |
| 1956. | 17,469,334 | 419,470, 968 | 24.01 | 13,843,711 | 1,953,470 | 188,144 |
| 1957. | 14,967,604 | 340,235,102 | 22.73 | 13,187,474 | 1,800,411 | 179,614 |
| 1958. | 12,759,136 | 275,153,906 | 21.57 | 12,477, 330 | 1,286,314 | 146,835 |
| 1959 | 14,357, 139 | 320, 244, 307 | 22.31 | 13,387,285 | 1,107,486 | 147,766 |
| 1960. | 13,997,080 | 311, 579,147 | 22.26 | 13,888,347 | 1,151,899 | 227,649 |
| 1961. | 15,474,266 | 369,663,000 | 23.89 | 14,230,730 | 1,151,471 | 206,726 |

${ }^{1}$ Given in terms of rough or unpeeled wood.
Pulp Production.-The manufacture of pulp, the second stage in this industry, is carried on by mills producing pulp only and also by paper manufacturers operating pulp mills in conjunction with paper mills to provide their own raw material. Such mills usually manufacture a surplus of pulp for sale in Canada or for export. Spruce, supplemented by balsam fir in the east and by hemlock in the west, is the most suitable species for the production of all but the best types of paper.

The preliminary preparation of pulpwood is most commonly carried on at the pulp mill although there are a number of rossing mills operating on an independent basis, chiefly for the purpose of saving freight on material cut at a distance from the mill or on material intended for export. Pulpwood is commonly measured by the cord ( $4^{\prime}$ by $4^{\prime}$ by $8^{\prime}$ of piled material). One cord of rough pulpwood contains approximately 85 cu . feet of solid wood, and one cord of peeled pulpwood 95 cu . feet.

The manufacture of $11,779,165$ tons of pulp produced in 1961 entailed the use of $14,437,456$ cords of rough pulpwood valued at $\$ 365,330,191$ and the equivalent of $2,102,563$ rough cords of other wood (i.e., sawmill chips, slabs and edgings, sawdust, butts, cores, etc.) valued at $\$ 36,181,817$. The total value of materials used in the manufacture of pulp was $\$ 492,902,883$.
16.-Pulp Production, Mechanical and Chemical, 1952-61

Note.-Figures for earlier years will be found in the corresponding table of previous Year Books.

| Year | Mechanical Pulp |  | Chemical Fibre |  | Total Production ${ }^{1}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quantity | Value | Quantity | Value | Quantity | Value |
|  | tons | \$ | tons | \$ | tons | \$ |
| 1952. | 5,175,319 | 217,352,245 | 3,518,127 | 423,789,033 | 8,968,009 | 650,021,180 |
| 1953. | 5,122,597 | 209,899,639 | 3,663,289 | 406,114,975 | 9,077,063 | 624,865,504 |
| 1954. | 5,337,610 | 214,102,066 | 4,057,046 | 433,359,934 | 9,673,016 | 655,916,738 |
| 1955. | 5,466,925 | 218,557,773 | 4,359,226 | $465,149,732$ | 10,150,547 | 693,402, 831 |
| 1956. | 5,723,002 | 231, 236, 271 | 4,645,493 | 463,880,858 | 10,733,744 | 706,232,534 |
| 1957. | 5,574,233 | 227,668,164 | 4,526,667 | 468,067,374 | 10,425,295 | 706,194,649 |
| 1958. | 5,375,499 | 222,295,717 | 4,445,310 | 471, 590,838 | 10,137,454 | 703,365, 594 |
| 1959. | 5,655,701 | 229,655,697 | 4, 837,328 | 504,613,400 | 10,832,200 |  |
| 1960. | 5,880,529 | 237,344,741 | 5,203,799 | $522,539,122$ | 11,461,489 | $772,626,099$ $796,290,768$ |
| 1961. | 5,878,322 | 237,598,007 | 5,560,336 | 547,565,114 | 11,779,165 | 796,290,60 |

[^146]17.-Pulp Production, by the Chief Producing Provinces, 1952-61

| Year | Quebec |  | Ontario |  | Canada ${ }^{1}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quantity | Value | Quantity | Value | Quantity | Value |
|  | tons | \$ | tons | \$ | tons | \$ |
| 1952. | 4,192,047 | 280,314,341 | 2,308,722 | 182,773,000 | 8,968,009 | 650,021,180 |
| 1953. | 4,163,068 | 265,937,385 | 2,323,509 | 177,713,471 | 9,077,063 | 624,865, 504 |
| 1954. | 4,315,465 | 268,759,418 | 2,420,903 | 183,381,040 | 9,673,016 | 655,916,738 |
| 1955. | 4,491,139 | 280,171,743 | 2,602,298 | 196,235, 632 | 10,150,547 | 693,402,831 |
| 1956..... | 4,809,011 | 296,884,619 | 2,735,241 | 178,012,929 | 10,733,744 | 706,232,534 |
| 1957.. | 4,605, 853 | 286,727,250 | 2,746,177 | 207,305,585 | 10,425, 295 | 706,194,649 |
| 1958. | 4,223,227 | 256,238,044 | 2,736,456 | 217,476,915 | 10,137, 454 | 703,365,594 |
| 1959. | 4,374,156 | 263,463,635 | 2,758,176 | 213,333,340 | 10,832,200 | 744,940,432 |
| 1960. | 4,469,015 | 267,664,950 | 2,966,587 | 223,108,348 | 11,461,489 | 772,626,099 |
| 1961. | 4,578,084 | 272,035,683 | 2,980,582 | 219,456,649 | 11,779,165 | 796,290,768 |

[^147]Pulp Exports.-The main market for Canadian pulp is the United States. For many years this market alone has absorbed between 75 and 90 p.c. of such exports.
18.-Exports of Pulp to Britain, United States and All Countries, 1952-61

| Year | Britain |  | United States |  | All Countries |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quantity | Value | Quantity | Value | Quantity | Value |
|  | tons | \$ | tons | \$ | tons | \$ |
| 1952 | 210,685 | 35,208,295 | 1,588,978 | 225,082,376 | 1,940,579 | 291, 863,498 |
| 1953. | 214,951 | 28,099, 255 | 1,599,491 | 202,247,663 | 1,950,152 | 248,674,880 |
| 1954. | 270,946 | 34,486, 399 | 1,669,782 | 206,435,403 | 2,180,416 | 271,418,005 |
| 1955 | 280,575 | 34, 814,098 | 1,868,804 | 233,796,779 | 2,366,133 | 297,304, 069 |
| 1956. | 244,164 | 29,762,920 | 1,919,634 | 245,080,531 | 2,374,013 | 304,536,497 |
| 1957. | 225, 482 | 28,662,202 | 1,847, 364 | 235, 258, 142 | 2,282,656 | 292,406,102 |
| 1958. | 216,147 | 24,666,398 | 1,832,521 | 239,874,495 | 2,219,314 | 285,448,649 |
| 1959 | 217,386 | 24,726,915 | 1,966,480 | 254, 049,124 | 2,450,027 | 311,252,798 |
| 1960. | 282,747 | 32,203, 019 | 1,999,755 | 256,170,127 | 2,601,457 | 325,121,572 |
| 1961.. | 278,846 | 31,022,948 | 2,176,585 | 268,949,199 | 2,868,844 | 346,660,713 |

World Pulp Statistics.-Figures of production, exports and imports of pulp for certain countries of the world are shown for 1960 and 1961 in Table 19. It is estimated that these countries produce over three quarters of the world supply of pulp.
19.-Production, Exports and Imports of Pulp, by Leading Countries, 1960 and 1961
(Source: Canadian Pulp and Paper Association)

| Country | 1960 |  |  | 1961 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Production ${ }^{\text {r }}$ | Exports | Imports | Production | Exports | Imports |
|  | '000 tons | '000 tons | '000 tons | '000 tons | '000 tons | '000 tons |
| Canadal ${ }^{\text {U }}$.... | 11,457 | 2,601 | 64 | 11,839 | 2,867 | 62 |
| Finland | 25,310 | 1,142 | 2,381 | 26,465 | 1,178 | 2,468 |
| Norway. | 4,076 1,678 | 1,757 | 4 50 | 4,735 1,690 | 1,764 836 | 6 37 |
| Sweden.. | 5,454 | 3,230 | 10 | 5,706 | 3,010 | 5 |

[^148]Paper Production.-During 1961 there were 95 establishments producing paper and paperboard in Canada. In addition to newsprint, Canadian mills have a highly developed production of fine paper, wrapping paper, tissues, paperboard and other cellulose products.
20.-Paper Production, by Type, 1952-61

Note.-Figures for earlier years will be found in the corresponding table of previous Year Books.

| Year | Newsprint Paper |  | Book and Writing Paper |  | Wrapping Paper |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quantity | Value | Quantity | Value | Quantity | Value |
|  | tons | \$ | tons | \$ | tons | \$ |
| 1952. | 5,707,030 | 600,515,960 | 224,683 | 57,463,621 | 222,529 | 45,356,720 |
|  | 5,755,471 | 633,408, 019 | 246,513 | 61,451,545 | 238,111 | 49,028,911 |
| 1954. | 6,000,895 | 657,487,344 | 269,353 | 68,613,807 | 250,408 | 51,341,374 |
| 1955. | 6,196,319 | 688,338,369 | 301,352 | 74,904,349 | 263,915 | 53,998,859 |
| 1956 | 6,445,110 | 735,644,049 | 341,580 | 86,524,107 | 288,146 | 61,098,013 |
| 1957. | 6,361,651 | 729,009,081 | 335,037 | 86,990,136 | 277,208 | 60,402,276 |
| 1958. | 6,030,930 | 699,906,388 | 344,622 | 91,079,353 | 292,727 | 64,650,624 |
| 1959. | 6,351,112 | 730,455,460 | 381,779 | 101,927,846 | 330,189 | 71,318,172 |
| $\begin{aligned} & 1960 . \\ & 1961 . \end{aligned}$ | 6,688,834 | 783,364,089 | 403,668 | 106,573,848 | 321,166 | 70,778,384 |
|  | 6,718,396 | 809,602,323 | 419,612 | 112,594,587 | 326,974 | 71,427,264 |
|  | Paperboard |  | Tissue and Miscellaneous Paper |  | Totals |  |
|  | Quantity | Value | Quantity | Value | Quantity | Value |
|  | tons | \$ | tons | \$ | tons | \$ |
| 1952. | 874,582 | 106,066,622 | 172,976 | 28,702,185 | 7,201,800 | 838,105,108 |
| 1953. | 948,955 | 114, 978,277 | 187,476 | 28,991,721 | 7,376,526 | 887, 858,473 |
| 1954. | 940,196 | 117, 172,691 | 188,755 | 30,975,427 | 7,649,607 | 925,590,643 |
| 1955 | 1,027,441 | 130,365,751 | 211,186 | 33,831,919 | 8,000,213 | 981,439,247 |
| 1956. | 1,173,087 | 147, 967, 340 | 218,862 | 39,258,846 | 8,466,785 | 1,070,492,355 |
| 1957. | 1,114,726 | 143, 7979,419 | 211,267 | 36,890,420 | 8,299,889 | 1,056,371,332 |
| 1958. | 1,188,650 | 152,810,753 | 224,364 | 36,193,082 | 8,081,293 | 1,044,640,200 |
| 1959. | 1,255,692 | 163,151,023 | 231,087 | 39,218,605 | 8,549,859 | 1,106,071,106 |
| 1960 | 1,277,554 | 165, 800,650 | 231,564 | 40,523,441 | 8,922,786 | 1,167,040,412 |
| 1961. | 1,066,269 | 154,087, 870 | 237,663 | 42,082,049 | 8,768,914 | 1,189,794,093 |

Quebec produced almost 43 p.c. of the total paper made in 1961, Ontario over 30 p.c., British Columbia about 13 p.c. and Newfoundland, Nova Scotia, New Brunswick, Manitoba, Saskatchewan and Alberta the remainder.
21.-Paper Production, by Province, 1960 and 1961

| Province | 1960 |  | 1961 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Quantity | Value | Quantity | Value |
|  | tons | \$ | tons | \$ |
| Quebec. | 3,905,972 | 501,596,562 | 3,853,522 | 508,988,755 |
| Ontario.... | 2,550,109 | 364,448, 004 | 2,491,450 | 364,394, 938 |
| British Columbia............................... | 1,150,119 | 140,000, 169 | 1,135,673 | 153,627,085 |
| toba, Saskatchewan and Alberta. | 1,316,586 | 160,995,677 | 1,288, 269 | 162,783,315 |
| Totals.. | 8,922,786 | 1,167,040,412 | 8,768,914 | 1,189,794,093 |

Newsprint Exports.-Total exports of newsprint from Canada in the years 1952-61 are given in Table 22.
22.-Exports of Newsprint to Britain, United States and All Countries, 1952-61

| Year | Britain |  | United States |  | All Countries |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quantity | Value | Quantity | Value | Quantity | Value |
|  | tons | \$ | tons | \$ | tons | \$ |
| 1952. | 131,005 | 14,575,722 | 4,850,962 | 534,372,859 | 5,327,430 | 591,790,209 |
| 1953. | 158, 108 | 18,237,016 | 4,917,216 | 564,464, 267 | 5,375, 251 | 619,033,394 |
| 1954. | 250,185 | 28,639,166 | 4,866,649 | 558,633,675 | 5,521,530 | 635, 669,692 |
| 1955. | 286,343 | 33,013,480 | 5,027,767 | 578,322,418 | 5,763,167 | 665,876,987 |
| 1956. | 347,905 | 41,531,514 | 5,218,911 | 615,941,551 | 5,967,194 | 708,384, 822 |
| 1957. | 371,870 | 44,009,073 | 5,058,229 | 610,290,208 | 5,900,625 | 715,489,761 |
| 1958. | 389,000 | 46,476,034 | 4,880,985 | 590,167,442 | 5,682,832 | 690,209,469 |
| 1959. | 393,942 | 51,585, 851 | 5,091,770 | 614,706,362 | 5,910,173 | 722,271,166 |
| 1960. | 460,537 | 60,162,971 | 5,229,909 | $631,230,363$ | 6,190,286 | 757,930, 406 |
| 1961. | 456,962 | 59,293,740 | 5,228,156 | 629,791,521 | 6,253,717 | 761,312,790 |

World Newsprint Statistics.-Since 1913 Canada has led the world in the export of newsprint. Figures for the leading producing countries for the two latest years available are given in Table 23; 1939 figures are included for comparative purposes. The six countries listed accounted for 73 p.c. of the estimated world production in 1961, Canada contributing about 42 p.c.

## 23.-Estimated World Newsprint Production and Exports, by Leading Countries, 1939, 1960 and 1961

(Source: Newsprint Association of Canada)

| Country | Production |  |  | Exports |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1939 | 1960 | 1961 | 1939 | 1960 | 1961 |
|  | '000 tons | '000 tons | '000 tons | '000 tons | '000 tons | '000 tons |
| Canadal. | 3,175 | 6,738 | 6,733 | 2,935 | 6,189 | 6,252 |
| United States. | 939 | 2,009 | 2,074 | 13 | 134 | 182 |
| Britain. | 848 | 830 | -797 | 42 | 52 | 31 |
| Finland. | 550 306 | 861 | 1,041 | 433 | 761 | 932 |
| Norway. | 322 202 | 641 249 | 682 248 | 199 188 | 434 195 | 466 210 |

${ }^{1}$ Figures differ slightly from DBS figures given in Tables 20 and 22, because of different bases of calculation.
Statistics of the Combined Pulp and Paper Industries.*-The manufacture of pulp, the manufacture of paper and the manufacture of products made of paper may, under certain conditions, be treated as three industries for they are frequently carried on in separate plants by entirely independent companies. The manufacture of basic stock and the converting of this paper into stationery and other highly processed paper products are often combined in one plant. This conversion of paper within the pulp and paper industry represents only a small part of Canada's production of converted paper and boards, the bulk of which is still made in special converting mills classified in other industrial groups.

The presence of these different combinations in one mill makes it difficult to separate many of the statistics relating to the manufacture of pulp, basic paper and converted paper products. All converting operations carried on in paper mills in this industry are attributed to the particular industrial group of converting plants to which they properly belong. Including manufacturing operations as far as the basic paper-making stage, there

[^149]were altogether 125 mills in operation in 1961. Employees numbered 65,799 and their salaries and wages amounted to $\$ 355,171,060$, as against 65,642 employees earning $\$ 344,409,846$ in 1960 . If the pulp made for their own use in combined pulp and paper mills is disregarded, the total value of materials and supplies used in the industry as a whole amounted to $\$ 680,167,806$ in 1961 compared with $\$ 656,877,464$ in 1960 ; the selling value of factory shipments to $\$ 1,634,606,001$ in 1961 and $\$ 1,578,727,108$ in 1960 ; and value added by manufacture to $\$ 842,419,885$ in 1961 and $\$ 811,546,844$ in 1960.

In world trade, pulp and paper are generally Canada's main commodities-newsprint alone, over a considerable period, has brought Canada more export dollars than wheat, nickel or any other single commodity.* The United States market absorbs annually over 80 p.c. of all pulpwood exports and the same percentage of the pulp and the paper shipments of Canada.

## Subsection 4.-The Veneer and Plywood Industries

The production of hardwood veneer and plywood in Canada is confined largely to the eastern provinces. Changes in manufacturing methods applied to hardwood plywood resulted in its adaptation to many uses, particularly to interior wall finishes for homes and other buildings.

Softwood veneer and plywood are produced almost entirely in British Columbia. 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. The use of synthetic resin adhesives is responsible for this product, which has become almost indispensable to the construction industry-for wall panels, concrete forms, roofing, sheeting and house sub-floors; for construction of silos, cribs and caissons; for box-car linings, bus bodies, trailers, and watercraft; for box panels and crate linings, case goods and core-stock for furniture; and for plywood-faced doors and many other items. The heating of glued veneers in moulds by high-frequency electric fields (dielectric heating) permits the manufacture of shaped plywood which is now widely used in the manufacture of furniture.

Veneers of Canadian manufacture are not confined to species native to Canada. A number of imported woods of special decorative value are veneered successfully and provide the furniture industry with a wide choice of materials. Exports of veneer and plywood produced in Canada increased in value from $\$ 969,256$ in 1938 to a high of $\$ 34,191,000$ in 1961.

[^150]24.-Veneer and Plywood Produced for Sale, by Type, 1959-61

| Type | 19591 |  | 1960 ${ }^{1}$ |  | 1961 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Not over 1/20 Inch | Over <br> $1 / 20$ Inch | Not over 1/20 Inch | Over $1 / 20$ Inch | Not over $1 / 20$ Inch | Over $1 / 20$ Inch |
| Veneer................. M sq. ft. | $\begin{array}{r} 745,547 \\ 21,471,254 \end{array}$ | $\begin{array}{r} 514,311 \\ 5,323,477 \end{array}$ | $\begin{array}{r} 641,331 \\ 19,117,025 \end{array}$ | $\begin{array}{r} 450,780 \\ \mathbf{5 , 0 3 1 , 8 5 6} \end{array}$ | $\begin{array}{r} 611,590 \\ 18,469,432 \end{array}$ | $\begin{array}{r} 456,549 \\ 5,213,141 \end{array}$ |
| Softwood...............M sq. ${ }_{\text {d }} \mathrm{ft}$. | 6,779 89,380 | 444,526 $3,517,631$ | 8,254 110,526 | $\begin{array}{r} 381,024 \\ 3,088,996 \end{array}$ | $\begin{array}{r} 7,745 \\ 107,960 \end{array}$ | $\begin{array}{r} 374,159 \\ 3,095,698 \end{array}$ |
| Hardwood.............. M sq. ft. | 691,297 $19,788,928$ | $\begin{array}{r} 68,111 \\ 1,740,960 \end{array}$ | 614,835 $18,336,070$ | $\begin{array}{r} 64,587 \\ 1,705,876 \end{array}$ | $\begin{array}{r} 633,845 \\ 18,361,472 \end{array}$ | $\begin{array}{r} 82,390 \\ 2,117,443 \end{array}$ |
| Plywood (1/4 inch basis).M sq. ft. | $\begin{array}{r} 1,532,175 \\ 101,346,523 \end{array}$ |  | $\begin{array}{r} \mathbf{1 , 6 3 8 , 9 1 4} \\ \mathbf{9 8 , 4 8 5 , 8 1 3} \end{array}$ |  | $\begin{array}{r} 1,902,806 \\ 105,615,891 \end{array}$ |  |
| Softwood.................M sq. ft. | $\begin{array}{r} 1,231,339 \\ 71,287,508 \end{array}$ |  | $\begin{array}{r} 1,381,575 \\ 71,828,995 \end{array}$ |  | $\begin{array}{r} 1,628,386 \\ 79,036,585 \end{array}$ |  |
| Hardwood...............M sq. ft . | $\begin{array}{r} 276,298 \\ 25,075,147 \end{array}$ |  | $\begin{array}{r} 237,092 \\ 22,117,225 \end{array}$ |  | $\begin{array}{r} 274,420 \\ 26,579,309 \end{array}$ |  |

[^151]
## Subsection 5.-Other Wood Industries

Based on the revised Standard Industrial Classification, which was introduced in 1960, there are nine separate wood industries other than the sawmills and the veneer and plywood mills. Most of these industries obtain from the sawmills the wood which they transform into planed or matched lumber, doors, windows, laminated structures, prefabricated buildings, boxes, barrels, caskets, etc. Veneer and plywood are also important raw materials used.

The wood industries do not include every industry into which wood enters as a raw material. Wood is an important raw material in the manufacture of furniture, agricultural implements, musical instruments, etc., industries which, as proven by experience, are more correctly classified under other groups.

As shown in Table 25, factory shipments of the establishments classed in the wood industries-except sawmills and veneer and plywood mills-were valued at $\$ 340,705,629$ in 1961, an amount 5.4 p.c. above that of the previous year. Compared with 1960, the value of factory shipments climbed substantially for the sash, door and planing mills industry and a moderate increase also materialized in the hardwood flooring industry. These two industries are closely dependent upon the residential construction activity which was significantly improved in 1961; compared with the preceding year there was a slight decline in the number of dwellings completed, but this was more than counterbalanced by the increase in new starts which numbered 125,577 for the year, 15.4 p.c. higher than in 1960. Average yearly employment in the Other Wood Industries group was reported at 26,403 , with a payroll at $\$ 87,079,304$ compared with 26,423 and $\$ 84,902,014$, respectively, in the preceding year.
25.-Value of Shipments of Other Wood Industries, 1959-61

${ }^{1}$ Basis: Revised Standard Industrial Classification (1960) and New Establishment Concept (1961). $\quad 2$ Includes wood preservation industry and miscellaneous wood industries.

## Subsection 6.-The Paper-Using Industries

Starting with 1960, the paper-using group is comprised of five industries* engaged primarily in manufacturing commodities of paper and paperboard. Establishments engaged in printing, publishing, bookbinding and the allied graphic arts also consume large quantities of these materials but are grouped separately (see Subsection 7).

Some paper-using establishments purchase paper as a raw material from the pulp and paper industry and merely subject it to some form of treatment to fit it for further manufacture in another industry; this occurs in the manufacture of coated, sensitized or corrugated paper. Other firms purchase paper and subject it to treatment to fit it for a definite final use such as in the manufacture of asphalt roofing or waxed wrapping paper. Another large group uses paper and paperboard as a raw material for conversion into paper bags, boxes, envelopes and other commodities.

[^152]The manufacture of containers and packages of various kinds has grown very rapidly since ways have been found of converting tough and cheap paper stocks into strongly made boxes which are replacing wooden crates and packing cases. Small attractive paper containers for use in the retail trade are now in common use and their manufacture constitutes an important branch of the paper-using industries. Starting with 1960, a number of establishments specializing in the production of plastic bags (cellulose, polyethylene, etc.) previously classed in other industries, are included with the paper bag manufacturers.

Composition roofing and sheathing, consisting of paper felt saturated with asphalt or tar and in some cases coated with a mineral surfacing, is being increasingly used as a substitute for metal roofing, wooden shingles and siding materials. Establishments classed as roofing manufacturers also produce a large proportion of the floor tiles manufactured in this country.

As a whole, the paper using industries have grown considerably in recent years. The same trend generally applied in 1961 compared with the preceding year; except for a small decline in the reported number of employees, statistics show a satisfactory increase. Shipments climbed to $\$ 571,128,054$ from $\$ 542,785,569$ in 1960 ; earnings were up to $\$ 115,966,105$ from $\$ 113,130,561$, despite a decline in the number of employees to 29,063 from 29,509; and plants numbered 444 compared with 439.

## Subsection 7.-Printing, Publishing and Allied Industries

The printing, publishing and allied industries group is made up of six closely related industries: printing and bookbinding, including commercial printers and bookbinders; lithographing, comprised of commercial printing plants using principally the offset printing process; engraving, stereotyping and electrotyping, including photo-engraving; trade composition or type setting for printers; printing and publishing, comprised of publishers who operate printing plants; and "publishers only", including establishments primarily engaged in publishing and which do no printing.

The total revenue of all establishments in this group of industries reached $\$ 871,902,450$ in 1961 , an amount 3.1 p.c. higher than the 1960 total of $\$ 845,946,370$. The payroll was up to $\$ 327,880,120$ from $\$ 320,280,912$ despite a small decline in the reported number of employees to 72,770 from 73,049 ; the plants numbered 3,427 compared with 3,410 in the preceding year.

The revenue to commercial printing establishments (including lithographers) rose to $\$ 370,472,076$ in 1961 from $\$ 357,601,668$ in 1960 ; plants specializing in trade composition, engraving, stereotyping, etc., had a total revenue of $\$ 52,074,200$ compared with $\$ 51,800,688$; the revenue to the printing and publishing industry increased to $\$ 370,327,715$ from $\$ 358,524,761$ and for "publishers only" to $\$ 79,028,459$ from $\$ 78,019,253$. Revenues from advertising and from subscriptions or sales of Canadian newspapers and periodicals of all kinds rose to $\$ 398,736,452$ in 1961 from $\$ 391,946,462$ in 1960; advertising revenues were $\$ 298,677,860$ compared with $\$ 294,883,240$ and sales $\$ 100,058,592$ compared with $\$ 97,063,222$.

## CHAPTER XI.-MINES AND MINERALS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing $p .1$ of this volume.

## Section 1.-Canada's Mineral Industry 1961-62*

Following the 1959-61 period of comparatively slow production growth, the Canadian mineral industry recorded a favourable gain in output to $\$ 2,842,984,195$ in 1962 from the 1961 level of $\$ 2,582,300,387$. The mineral fuels sector accounted for about one half of the year's gain in production value and the metallic minerals for one third. The structural materials component of the industrial minerals sector accounted for most of the remaining gain, the increase for the non-metallic minerals being comparatively minor. As a result of these advances, production values of metallic minerals, industrial minerals and mineral fuels were $\$ 1,480,282,362$, $\$ 565,850,747$ and $\$ 796,851,086$, respectively, compared with $\$ 1,387,159,036, \$ 541,813,549$ and $\$ 653,327,802$ in 1961 . A considerable decline in the production value of uranium and smaller declines for several other minerals were more than offset by major gains for crude petroleum, nickel, natural gas and copper.

The extent of mineral industry growth in recent years is readily apparent from a comparison of key statistics for 1952 and 1962; in the earlier year, production value was $\$ 1,285,342,353$, less than one half the 1962 output. The index of physical volume of mineral production, on a 1949 base, rose from 131.0 to 287.0 and per capita output from $\$ 89$ to $\$ 153$. Although the rate of production growth was greatest in the earlier years of this period, exploration and property development, particularly in the metallic minerals sector, have proceeded at a rapid pace during the past two years. This activity has demonstrated further the great mineral potential of Canada.

Nickel, for the fourth consecutive year, was the leading metal in 1962 with a value of $\$ 385,200,000$, although the volume of output was down slightly. Following nickel

[^153]in output value were copper, iron ore, gold, uranium, zinc, lead and silver, in that order. These eight metals accounted for 96 p.c. of the value of metallic minerals output and 50 p.c. of the total value of mineral production. Compared with 1961, there were declines in uranium, gold and lead production, with uranium dropping from third to fifth place among the metals. The most outstanding gain was in iron ore production which advanced to $\$ 264,600,000$ from $\$ 187,900,000$ and to third place in value. Copper, with a value of $\$ 283,100,000$, retained second place.

The Thompson nickel project in northern Manitoba had its first full year of production in 1962 and two new nickel operations-one in Quebec and one in northwestern Ontariobegan initial production during the year. Canada produces almost two thirds of the world's nickel. It is the fifth largest copper producer, following the United States, Northern Rhodesia, Chile and the Soviet Union. Canadian mine output of copper reached an all-time high in 1962. Refined copper production was down slightly from 1961 because of increased exports in the form of concentrates but over four fifths of mine output was refined in Canada. The copper industry has been particularly active in recent years and in 1962 eight mines started production and seven were being developed while exploration parties were active in all copper-producing provinces and in the territories.


The iron ore industry was one of the most buoyant parts of the mineral economy in 1962. Quebec-Labrador producers, integrated with United States steel companies, were able to increase considerably their shipments to the United States and, as a result, total exports to that market advanced by 80 p.c. British Columbia mine development benefited from growth in shipments to Japan but this gain was more than offset by the weaker competitive position of Eastern Canada producers in Britain and other European markets. One of the most significant resource developments of 1962 was the commencement of iron ore shipments, in the form of high-grade concentrate, by Iron Ore Company of Canada from its new operation at Labrador City.

Canada is the world's third largest gold producer, after the Republic of South Africa and the Soviet Union. Despite the increase in the Royal Canadian Mint price for gold to $\$ 37.41$ an oz.t. from the 1961 price of $\$ 35.46$, Canada's output declined by 7 p.c. Increasing mining depths, lower grade ores, higher labour and material costs and lower mine tonnages are all working toward higher operating costs in the gold industry.

The uranium industry continued to make adjustments under a stretch-out plan for deliveries to the United States as instituted by the Federal Government late in 1959. At the end of 1962, eight mines were in production compared with 23 at the peak period in 1959. The value of production in that year was $\$ 331,000,000$, subsequently declining to $\$ 270,000,000, \$ 195,700,000$ and $\$ 151,000,000$ in 1960,1961 and 1962 , respectively. Although lead production declined, zinc producers increased their shipments and the capacity of the zinc industry will be enlarged considerably over the next four to five years. New mines in Quebec accounted for a large part of the 1962 increase. Silver production dropped about 5 p.c. as a result of the decline in British Columbia lead production from which silver is derived as a by-product.

In the industrial minerals sector, a new production record was established for the fourth consecutive year and individual highs were recorded for magnesium minerals, nepheline syenite, salt, elemental sulphur and cement. The most notable development was the establishment of potash production on a regular basis after several years of delays with mining problems. Elemental sulphur production from natural gas fields in Western Canada also shows much promise and in 1962 shipments exceeded half a million tons for the first time. By the end of 1963, the Canadian potash industry should be capable of supplying 15 p.c. of the world market; the elemental sulphur industry achieved this status in 1962. Elsewhere in the industrial minerals sector, salt mining capacity was being enlarged, gypsum production facilities increased for shipments to the United States market, and cement processing and distribution facilities expanded. Major engineering projects, such as the large hydro-electric power development north of Baie Comeau in Quebec, contributed to the high level of activity in the construction industry in 1962 and the resultant demand for cement and other construction materials.

The leading commodity in the industrial minerals group is asbestos, followed by sand and gravel, and cement. With a value of $\$ 132,100,000$ in 1962 , asbestos accounted for 61 p.c. of the total value of the 26 non-metallics produced, and sand and gravel and cement accounted for 66 p.c. of the value of structural materials. In recent years, structural materials have been accounting for about three fifths of the value of industrial minerals production, and non-metallics for about two fifths.

In the fuels sector, with over one quarter of Canada's total mineral value, crude petroleum accounted for almost three quarters of the 1962 fuels output. Petroleum has been the leading mineral in point of value since 1953 and in 1962 it exceeded nickel, in second place, by almost $\$ 200,000,000$. Output of all liquid hydrocarbons in 1962 averaged $734,000 \mathrm{bbl}$. daily and during the early months of 1963 , production exceeded $800,000 \mathrm{bbl}$. daily. Natural gas production increased by a record amount as a result of the first full year's operation of the Alberta-to-California pipeline and a favourable demand growth in the domestic market. Alberta accounted for four fifths of Canada's production. The search for oil and gas continued and renewed interest was shown in opening up the Athabasca oil sands for large-scale production as a number of oil companies proceeded actively with various plans to improve mining and processing techniques.

Canada's petroleum refining capacity in 1962 was $979,660 \mathrm{bbl}$. a day, more than double the 1952 rate. Quebec and Ontario had almost 60 p.c. of this capacity. Domestic oil accounted for almost 56 p.c. of all crude used in Canadian refineries in 1962 even though all refineries in Quebec and the Maritime Provinces run entirely on imported crude. There were 74 natural gas processing plants in Canada with a capacity of $3,400,000 \mathrm{Mcf}$. daily.

Export trade is of vital importance to the Canadian mineral industry. The value of mineral exports as raw materials and semi-processed products in 1962 was $\$ 1,935,433,000$. The leading export commodities were nickel, the mineral fuels, aluminum and iron ore which accounted for 16.7 p.c., 16.2 p.c., 14.9 p.c. and 14.7 p.c., respectively, of all mineral exports. About three quarters of the production value of the metallic minerals is accounted for by exports; for the mineral fuels and for industrial minerals the proportion is one quarter. Notwithstanding conditions of mineral over-supply in the world, there was a $\$ 177,000,000$ increase in Canada's mineral exports in 1962, representing a 10-p.c. gain over 1961. Although the Canadian mineral industry must face such restrictions in international trade as quotas and tariffs, the increasing need for mineral materials in the industrial nations of the world offers much promise for continuing growth and diversification of the Canadian mineral economy.

## Subsection 1.-Metals

Nickel.-Production of nickel in Canada in 1962 amounted to 232,068 tons valued at $\$ 385,224,707$. The quantity was slightly under the 1961 production but the production value was considerably higher. Ontario produced 165,440 tons valued at $\$ 274,492,739$ and Manitoba produced 62,099 tons valued at $\$ 103,169,771$. The aggregate production from Quebec, British Columbia and the Northwest Territories was 4,528 tons. Marketing was characterized by keen competition. Supply was greater than demand for the first time in many years because of increased production and the cessation of nickel deliveries to the United States stockpiles. Increased supply resulted in a $2 \frac{1}{4}$ cents-per-pound reduction in the price of nickel, initiated by Falconbridge Nickel Mines, Limited and followed by other companies, and then a 13-p.c. reduction in production in the fourth quarter by The International Nickel Company of Canada, Limited. Further, Société Le Nickel of France began marketing small amounts of nickel of New Caledonian origin in the United States.

On the world market, there was little change in the source of nickel. Canada and New Caledonia supplied most of the Free World's nickel; Russia and Cuba met the bulk of the Soviet bloc requirements. Production from new sources commenced in East Germany, Czechoslovakia and Brazil but these were all minor suppliers.

Sudbury continued to be the main source of Canadian nickel. International Nickel operated seven mines in the area: Creighton, Frood-Stobie, Garson, Levack and Murray as underground mines and the new Clarabelle and Ellen mines as open pits. The Crean Hill mine, although ready for production, was maintained on a standby basis. In September, International Nickel announced a fourth-quarter cutback from $92,000,000 \mathrm{lb}$. to $80,000,000$ lb . of nickel, necessitating the lay-off of some 2,500 employees, mostly in the Sudbury area. The reduced production did not indicate a lowering of demand but was due to surplus production over and above demand and inventory requirement. The company continued construction work on its Copper Cliff, Ont., iron ore recovery plant to enlarge its capacity from 300,000 to 900,000 tons of pellets a year. The project is scheduled for completion in 1963. Falconbridge Nickel Mines, Limited operated the Falconbridge and East mines in the Falconbridge, Ont., area and the Boundary, Onaping and Fecunis mines on the north rim of the Sudbury Basin. Development work continued at the Strathcona deposit.

Elsewhere in Eastern Canada, Marbridge Mines Limited and Nickel Mining and Smelting Corporation were brought into production. Marbridge, in LaMotte township adjacent to Malartic, is Quebec's first nickel producer. Production is at a minimum rate of 300 tons of ore daily; the bulk nickel-copper concentrates are trucked to Falconbridge

Nickel at Falconbridge for smelting. Nickel Mining and Smelting is milling at a rate of 500 tons daily and its bulk nickel-copper concentrates are trucked to Lac du Bonnet, Man., and then rail-shipped to Copper Cliff for smelting.

In Manitoba, production of the Thompson property of International Nickel, which experienced its first full year of production, plus that of Sherritt Gordon Mines, Limited totalled 62,099 tons. Manitoba now accounts for approximately 26 p.c. of Canadian nickel production. Sherritt Gordon's Fort Saskatchewan refinery near Edmonton, Alta., continued to treat Lynn Lake concentrates and to purchase concentrates from North Rankin, N.W.T. At the Lynn Lake mine of Sherritt Gordon, the Farley shaft is to be deepened to reach expected ore in the block of ground below the present working levels. At the Fort Saskatchewan refinery, construction work was completed on the urea plant and on the addition to the ammonia plant. North Rankin closed in October when minable grade ore was exhausted; the mining and milling plants were dismantled and the townsite sold.

Giant Nickel Mines Limited in British Columbia, a wholly-owned subsidiary of Giant Mascot Mines, Limited, completed its expansion to 1,200 tons daily. Concentrates are exported to Japan.

Copper.-Mine production of copper in Canada in 1962 reached a record high of 458,590 tons valued at $\$ 283,133,249$, a tonnage increase of 4.4 p.c. and a value increase of $\$ 27,975,623$ over 1961. Reductions in Ontario, Manitoba and Saskatchewan were more than offset by increased production in Newfoundland, New Brunswick, Quebec and British Columbia. Across Canada three mines were closed, eight mines started production and seven were under development. Exploration parties were active in all copper-producing provinces and in the territories.

Six smelters for the reduction of copper and copper-nickel 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 Mines produces coppernickel 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, since September 1960, has smelted copper concentrates from Sherritt Gordon's Lynn Lake mine. 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 Gaspé Copper Mines, Limited, both in Quebec. Copper refineries are operated by International Nickel at Copper Cliff, Ont., and Canadian Copper Refiners Limited at Montreal East, Que. Production of refined copper in 1962 totalled about 383,000 tons.

Production from the three copper-producing mines in Newfoundland in 1962 totalled 18,342 tons valued at $\$ 11,372,350$. In the Burlington Peninsula area two copper properties were being explored by diamond drilling and underground development.

New Brunswick rejoined the ranks of copper-producing provinces in January 1962 when ore was shipped from the Wedge mine of The Consolidated Mining and Smelting Company of Canada Limited to the mill of Heath Steele Mines Limited; 750 tons of ore a day were trucked to the mill over a ten-mile road that was built under the federalprovincial roads-to-resources program. Heath Steele continued exploration and development of its zinc-copper orebody some 35 miles north of Newcastle. Near Bathurst, Brunswick Mining and Smelting Corporation Limited started rehabilitation of the mine plant and construction of a 3,000-ton-a-day mill at its No. 12 mine. The Canadian National Railways will construct a 15 -mile branch line from Nepisiguit Junction to the property and production at 3,000 tons a day will start early in 1964. Concentrates from this operation will be shipped to Belgium from Dalhousie. New Brunswick's copper production in 1962 totalled 6,629 tons valued at $\$ 4,109,856$.

There were 18 copper-producing mines in Quebec in 1962 with a combined output of 151,390 tons of copper valued at $\$ 93,861,854$. Production cuts of 5 p.c. were maintained
at the mines of Noranda Mines, Limited (Horne mine), Waite Amulet Mines, Limited and Gaspé Copper Mines, Limited. Solbec Copper Mines, Ltd. started production of copper and zinc concentrates in January at its 1,000-ton-a-day mill about 53 miles northeast of Sherbrooke in the Eastern Townships. Cupra Mines Ltd. started shaft-sinking at its property approximately $2 \frac{1}{2}$ miles south of the Solbec mine; mining will start in 1964 and the ore will be trucked to the Solbec plant for milling. In the Chibougamau district, Campbell Chibougamau Mines Ltd. started development of a new ore occurrence on four levels below the previously mined orebody. Merrill Island Mining Corporation, Ltd. deepened its main shaft and started exploration and development on three levels of a recently discovered orebody. In the Noranda-Val d'Or-Normetal area of northwestern Quebec, production was maintained at the established mines and underground exploration and development started at several prospects. Lake Dufault Mines, Limited started shaft-sinking at its property adjoining Waite Amulet Mines, on the east. In Joutel Township north of Amos, Joutel Copper Mines Limited started sinking a three-compartment shaft on its property, and Rio Algom Mines Limited announced plans to start sinking on its claims in the same area. Mine plant construction and underground development was proceeding at the mines of Mattagami Lake Mines Limited, New Hosco Mines Limited and Orchan Mines Limited in the Mattagami Lake area; production from these properties is scheduled to begin in the latter part of 1963. Exploration parties were active in all parts of Quebec, particularly in the Belleterre, Noranda and Joutel areas in the northwest and in Ungava where interest was centred around Romanet Lake.

Copper production in Ontario declined in 1962 to 184,684 tons valued at $\$ 113,481,766$ from the 211,647 tons valued at $\$ 122,421,860$ produced in 1961, a result of the cut in production by International Nickel at its Sudbury mines. This company operated seven mines, three mills, two smelters and a copper refinery in the Sudbury district. Falconbridge Nickel Mines, Limited, the other large nickel-copper producer in the area, operated six mines, three mills and a smelter and shipped nickel-copper matte to its refinery in Norway. The copper-zinc mines in the Manitouwadge area produced steadily all year as did North Coldstream mine near Kashabowie and Rio Algom's Pater mine at Spragge. Kam-Kotia Porcupine Mines, Limited, west of Timmins, discovered a new orebody close to its 900 -ton-a-day open-pit mine and preparations were made to sink a shaft and explore the mineralized zone by lateral development. McIntyre-Porcupine Mines, Limited at Timmins modified a portion of its mill in preparation for the treatment of low-grade copper ore to be produced from a section of the McIntyre mine in 1963.

In Manitoba-Saskatchewan, Hudson Bay Mining and Smelting Co., Limited, Sherritt Gordon Mines, Limited and Stall Lake Mines Limited had a combined copper output of 43,061 tons valued at $\$ 26,527,365$, a decrease of 2,872 tons and $\$ 288,906$ from 1961. Stall Lake Mines started production of copper-zinc ore late in 1962 from a property four miles southwest of Snow Lake, Man. The ore is sold to Hudson Bay for smelting. Hudson Bay operated a central mill and smelter on ores from the Schist Lake and Chisel Lake mines in Manitoba, the Coronation mine in Saskatchewan and the Flin Flon mine that straddles the Manitoba-Saskatchewan boundary. Development of the Stall Lake and Osborne mines near Snow Lake, Man., was continued by Hudson Bay. Sherritt Gordon produced copper concentrate at its nickel-copper mine and mill at Lynn Lake, which was smelted at Flin Flon.

Copper production in British Columbia continued the spectacular rise that started in 1960. The 1962 production of 53,709 tons valued at $\$ 33,299,715$ exceeded that of 1961 by 37,864 tons and $\$ 24,093,777$. Craigmont Mines Limited, near Merritt, is now Canada's third largest copper mine and produced approximately three quarters of British Columbia's 1962 copper production. Bethlehem Copper Corporation Ltd. started production in December 1962 at its open-pit mine in Highland Valley, approximately 26 miles southeast of Ashcroft: output will be at the rate of 3,300 tons of ore a day and concentrates will be shipped to Japan. Howe Sound Company's mine at Britannia Beach continued production at 1,500 tons of ore a day and concentrates were shipped to Tacoma, Washington. Phoenix Copper Company Limited, near Greenwood, increased its mill capacity to 1,500 tons a day
and shipped copper concentrates to Tacoma; its 1963 copper concentrates will go to Japan. Consolidated Woodgreen Mines Limited suspended operations in April. On Vancouver Island, Cowichan Copper Co. Ltd. brought the Sunro mine at Jordan River into production in March. Concentrates from the 1,500-ton-a-day underground concentrator were shipped to Japan. The Consolidated Mining and Smelting Company of Canada Limited started production in September at the Benson Lake property of Coast Copper Company Limited. The Benson Lake mill will treat 750 tons of ore a day and concentrates will be shipped to Japan. Exploration parties were active in many parts of British Columbia; the greatest activity was in the Buttle Lake and Duncan areas of Vancouver Island, the Highland Valley-Merritt-Princeton area of south-central British Columbia and the Unuk River section of the northwestern part of the province.

Copper production in the Northwest Territories and the Yukon Territory totalled 534 tons valued at $\$ 330,961$. Production ceased with the closure in October of North Rankin Nickel Mines Limited's nickel-copper mine at Rankin Inlet on Hudson Bay and the suspension of operations at the Johobo mine of Dominion Explorers Limited at Kathleen Lake in the Yukon.

Iron Ore.-The decreasing level of iron ore shipments, evident since 1959, was sharply reversed in 1962 when total shipments reached an all-time high of $27,898,713$ tons, up 37 p.c. from 1961. Output of all producing provinces was higher. At the same time, some companies experienced a continuation of the former trend toward lower shipments and softer prices as a result of increased competition and a generally stagnant, increasingly captive, international market. Most companies intensified their ore-research programs during the year and the trend toward producing a beneficiated product for marketing rather than direct-shipping ore continued.

There are five main market areas for Canadian iron ore-the United States, Britain, Western Europe, Japan and Canada. The United States is the principal market and the level of ore consumption there rose slightly during 1962. The increase in exports from Canada exceeded considerably the increase in supply from other foreign sources and from domestic mines. The main reason for this was a high level of operation by Canada's three largest iron ore producers which are integrated with United States steel companies. On the other hand, non-captive ore sales by these and other Canadian producers, except those in British Columbia, tended to weaken.

In Western Europe, steel production in most countries levelled off or declined slightly after a decade of continuous growth. Exports from Canada in 1962 to customers in Europe decreased except for relatively small increases to Italy and France. A large portion of the net decrease in exports was experienced by one company whose ore is particularly subject to rigorous competition from new, higher-grade sources in Africa, Asia and South America.

In Japan, the rapidly increasing ore-consumption rate levelled off unexpectedly early in 1962. As a consequence, the planned imports for the year were reduced by about 20 p.c. and Canadian producers were accordingly affected. Despite the cutbacks, there was a substantial increase in exports from British Columbia, the sole Canadian supplier to Japan, because of previously negotiated contracts.

Developments in the Canadian iron and steel industry have increased the ratio of Canadian to foreign ore consumed in recent years, a trend that can be expected to continue, particularly after 1965, despite a decline in 1962. By 1965, a new project will come into production in Labrador that will provide nearly $2,000,000$ tons of captive ore to the Canadian industry. However, domestic consumption of Canadian iron ore decreased slightly in 1962 although steel production reached a record level approximately 10 p.c. above that of 1961. Imports from the United States and other foreign sources increased. The reason for these opposing trends is that during the period before Canadian iron ore became abundantly available in the 1950's, Canadian steel producers obtained most of their ore requirements from United States iron ore mining firms in which they had a financial interest and/or traditional commercial links.


The decrease and stabilization of the external value of the Canadian dollar at a rate below that of the United States on May 2, 1962, was of net benefit to Canadian iron ore exporters. Increased revenue from export sales more than offset the additional capital charges that several operators must repay in foreign currency. The net benefit to several producers, however, was largely dissipated because the base selling price of direct-shipping ore in North America was lowered. In addition, competition from other exporting countries increased the pressure on prices received for Canadian direct-shipping as well as high-grade beneficiated ore in the European markets.

Iron Ore Company of Canada, with direct-shipping ore deposits astride the LabradorQuebec border 360 miles north of the port of Sept Illes, Que., is the largest producer, and accounted for 41 p.c. of 1962 Canadian shipments. Initial shipments of high-grade concentrate were made from the company's new operation at Labrador City. Wabana Mines of the Dominion Steel and Coal Corporation, Limited, produces medium-grade concentrate from its underground mines on Bell Island, Nfld., and accounted for about 5.2 p.c. of the year's shipments. High-grade pellets from Hilton Mines, Ltd. near Shawville, Que., accounted for another 3.1 p.c. Quebec Cartier Mining Company, a new producer in 1961, contributed 18.5 p.c. by shipping high-grade concentrate from its new mine and beneficiation plant at Gagnon and its port at Port Cartier, Que.

In Ontario, Caland Ore Company Limited, Canadian Charleson, Limited and Steep Rock Iron Mines Limited continued to produce direct-shipping and medium-grade concentrates in the Atikokan area. Steep Rock, the area's oldest producer, and Caland accounted for 8.0 p.c. and 4.0 p.c., respectively, of the 1962 shipments. In the Michipicoten area, Algoma Ore Properties Division of The Algoma Steel Corporation, Limited operates mines and a sinter plant at Wawa and accounted for 6.5 p.c. of the 1962 shipments. Marmoraton Mining Company, Ltd. produces high-grade pellets from its mine and plant near Marmora, and Lowphos Ore, Limited produces high-grade concentrate from its operations near Capreol. Together, these companies produced 3.8 p.c. of the country's shipments in 1962.

Six British Columbia producers accounted for 6.5 p.c. of Canadian shipments. Empire Development Company, Limited and Nimpkish Iron Mines Ltd. operate mines on Vancouver Island, and Texada Mines Ltd. produces from mines on Texada Island. Initial shipments were made in 1962 by Brynnor Mines Limited and Zeballos Iron Mines Limited from properties on Vancouver Island, and by Jedway Iron Ore Limited from the Queen Charlotte Islands.

By-product iron ore was produced by The Consolidated Mining and Smelting Company of Canada Limited at Trail, B.C., and by The International Nickel Company of Canada, Limited and Noranda Mines, Limited from plants at Copper Cliff and Cutler, Ont. At Sorel, Que., Quebec Iron and Titanium Corporation smelts ilmenite ore from its mine near Havre St. Pierre to produce titania slag and pig iron. Falconbridge Nickel Mines, Limited commenced production from a new plant near Sudbury, Ont.

Properties being developed for production will result in an increase in Canada's productive capacity to over $40,000,000$ long tons by 1965 . In the Wabush Lake area of Labrador, Wabush Iron Co. Limited will commence the production of high-grade concentrate and pellets in 1965 at the annual rate of $6,000,000$ long tons. In Ontario, Jones \& Laughlin Steel Corporation will be producing $1,000,000$ long tons of high-grade pellets from new facilities to be erected near Kirkland Lake by 1964.

Gold.-The average Royal Canadian Mint price for gold rose to $\$ 37.41$ an oz.t. in Canadian funds in 1962 from $\$ 35.46$ in 1961. Despite the higher price, gold production decreased in 1962 to $4,155,210 \mathrm{oz}$.t. from 4,473,699 oz.t. and production value at $\$ 155,446,407$ was considerably lower than the 1961 value of $\$ 158,637,366$. The Canadian dollar had been selling at a premium over the United States dollar ever since February 1952. In his Budget Speech to Parliament on June 20, 1961, the Minister of Finance announced that the resources of the Exchange Stabilization Fund would be used to reduce the value of the Canadian dollar in relation to the U.S. dollar. This government policy resulted in a decline in the Canadian dollar and a corresponding rise in the Mint price of gold. The dollar continued to decline and on May 2, 1962 it was announced that, effective immediately, the Canadian dollar would be stabilized at $92 \frac{1}{2}$ cents in terms of the U.S. dollar. The new exchange rate was formally established with the concurrence of the International Monetary Fund and the Government of Canada agreed to maintain the Canadian exchange rate within the normal margin of 1 p.c. either side of the fixed value. The range in value for the Canadian dollar was thus set at from $\$ 0.916$ to $\$ 0.934$ in relation to the U.S. dollar and the corresponding Mint price for gold between $\$ 38.22$ and $\$ 37.46$ per oz.t.

Decreased production in 1962 was attributed to a number of factors. Two old gold mines in Ontario closed late in 1961; Kerr-Addison Gold Mines Limited in the Larder Lake area of Ontario, Canada's largest single producer, had a 20-p.c. drop in output; and the value of gold ore available for milling was lower in many Ontario and Quebec mines. Extensive underground exploration and development programs, including deepening of existing shafts and changes in mining methods due to increased depth of mining also resulted in fewer tons of ore being milled and increased operating costs in some of the larger mines. However, mines were able to continue operating because of the cost assistance received under the terms of the Emergency Gold Mining Assistance Act and the higher Mint price for gold.

A total of 52 lode gold mines operated during 1962, one fewer than in 1961. Fortytwo mines received cost assistance under the terms of the Emergency Gold Mining Assistance Act. Mines not eligible for cost assistance had total costs of less than $\$ 26.50$ per oz.t. and sold most of their gold on the open market. During the year, the proportion of gold coming from lode gold mines decreased to 83.4 p.c. from 84.4 p.c. and by-product gold recovered from base-metal ores increased to 15.3 p.c. from 14.1 p.c. Placer gold accounted for 1.3 p.c. compared with 1.5 p.c. in 1962.

Ontario was again the main producer, accounting for 57.6 p.c. of the 1962 total gold output compared with 59.0 p.c. in 1961, but production was lower at an estimated $2,393,817$ oz.t. compared with $2,637,720$ oz.t. in 1961 . Only the Port Arthur mining division showed an increase. Twenty-nine lode mines operated in the province compared with 30 in the previous year. Twelve mines operated in the Porcupine district, the chief producers being Hollinger Consolidated Gold Mines, Limited (Canada's second largest gold producer), McIntyre-Porcupine Mines, Limited and Dome Mines Limited. In the Red Lake-Patricia mining divisions, seven mines operated, the chief producers being Campbell Red Lake Mines Limited, Madsen Red Lake Gold Mines Limited and Dickenson Mines Limited. Kerr-Addison Gold Mines Limited in the Larder Lake area had a drop in output of more than 20 p.c. In the Kirkland Lake area, five mines operated, the main producers being Macassa Gold Mines Limited, Upper Canada Mines, Limited and Wright-Hargreaves Mines, Limited. In the Port Arthur mining division, Consolidated Mosher Mines Limited started shipping ore to the adjoining MacLeod-Cockshutt Gold Mines Limited in January 1962, and Leitch Gold Mines Limited continued to operate. Renabie Mines Limited continued operations in the Sudbury mining division. Some 66,000 oz.t. of gold were recovered as a by-product from base-metal ores in Ontario, mainly from the nickel-copper mines of the Sudbury district. No placer production was reported.

Quebec produced 24.0 p.c. of Canada's gold production compared with 23.6 p.c. in 1961. Fourteen mines operated and production totalled 998,502 oz.t. compared with $1,054,029$ oz.t. One small mine, Malartic Hygrade Gold Mines Limited, commenced trucking ore to the custom mill of Malartic Gold Fields Limited in March 1962. The largest lode gold producers were Lamaque Mining Company Limited and Sigma Mines (Quebec) Limited at Bourlamaque and East Malartic Mines, Limited at Malartic. Gold recovered as a by-product from base-metal ores was lower but represented 41.2 p.c. of the total production. No placer production was reported in Quebec.

The Northwest Territories produced 9.5 p.c. of the gold recovered compared with 9.1 p.c. in 1961. All production came from lode mines in the Yellowknife district and totalled 393,433 oz.t. compared with 404,474 oz.t. in 1961. Four mines operated, Giant Yellowknife Mines Limited (Canada's third largest producer) being the main producer.

British Columbia produced 4.1 p.c. of Canada's output compared with 3.7 p.c. in 1961; recovery increased to $169,683 \mathrm{oz} . \mathrm{t}$. from $164,467 \mathrm{oz} . \mathrm{t}$. Three lode gold mines operated but McKinney Gold Mines Limited ceased shipping ore in May 1962. The only large producer was Bralorne Pioneer Mines Limited in the Bridge River area. By-product gold from base-metal mines increased by nearly 40 p.c. and accounted for 22.1 p.c. of the provincial total. Placer recovery accounted for 1.4 p.c. of the total.

In the Prairie Provinces, Manitoba recovered 61,124 oz.t. in 1962 compared with 57,747 oz.t. in 1961. Lode gold from San Antonio Gold Mines Limited and Forty-Four Mines, Limited at Bissett accounted for almost half of the total, the remainder coming as a by-product from base-metal mines in the Flin Flon and Lynn Lake areas. Saskatchewan recovered 67,783 oz.t. from base-metal mines near Flin Flon on the Manitoba-Saskatchewan border and a small amount of placer gold was recovered from the North Saskatchewan River near Edmonton in Alberta.

In the Yukon Territory, the total recovered in 1962 was 54,086 oz.t. compared with 66,878 oz.t. in 1961, all coming from placer operations. About 80 p.c. of Canada's placer gold production comes from dredging and hydraulicking operations of The Yukon Consolidated Gold Corporation, Limited in the Dawson area.

The only gold production in the Maritime Provinces was 299 oz.t. recovered from base-metal ores in New Brunswick. Newfoundland's 1962 production was 16,375 oz.t. compared with 14,429 oz.t. in 1961, all of it coming as a by-product from copper and leadzinc mines.

Uranium.-The principal uranium deposits in Canada are found in three geographically and geologically different areas. The deposits in the Elliot Lake-Blind River district of northern Ontario occur in quartz-pebble conglomerates and are by far the largest in Canada; ore reserves are estimated at $290,000,000$ tons grading 0.12 p.c. $\mathrm{U}_{3} \mathrm{O}_{8}$. The deposits in the Bancroft area of southeastern Ontario are the only pegmatitic granite dykes being worked for uranium in Canada. Some of the orebodies in these dykes are unusually large and persistent in depth, and average about 0.10 p.c. $\mathrm{U}_{3} \mathrm{O}_{8}$. Vein-type deposits, containing pitchblende, are being mined in the Beaverlodge Lake area on the north shore of Lake Athabasca in northern Saskatchewan. The grade of the ore in these deposits, ranging between 0.18 and 0.25 p.c. $\mathrm{U}_{3} \mathrm{O}_{8}$, is relatively high compared with the other two types. The measured, indicated and inferred uranium ore reserves in Canada as of Jan. 1, 1962 were estimated at $300,000,000$ tons, grading 0.12 p.c. $\mathrm{U}_{3} \mathrm{O}_{8}$ [equivalent to 360,000 tons of uranium oxide $\left(\mathrm{U}_{3} \mathrm{O}_{8}\right)$ ] and are considered to be the largest in the world. The reserves calculated for the Elliot Lake district constitute about 98 p.c. of the total.

In 1958, Canada was the world's leading producer of uranium concentrates. In 1959 the value of uranium production amounted to $\$ 331,000,000$ and was, for the second consecutive year, higher than the value of any other mineral produced in the country with the exception of petroleum. In 1960 the value of output declined to approximately $\$ 270,000,000$ and in 1961 production of uranium oxide ( $\mathrm{U}_{3} \mathrm{O}_{8}$ ) amounted to 9,641 tons valued at $\$ 195,700,000$. Preliminary estimates for 1962 were 8,400 tons valued at $\$ 151,425,000$. Production has declined as mines have continued to close following the announcement of the United States Atomic Energy Commission in November 1959 that it would not continue to purchase uranium from Canada in excess of contract commitments that were to expire in 1962 and 1963. As a result of this decision, arrangements were made to allow Canadian producers to stretch out to the end of 1966 the undelivered portion of uranium under their sales contracts. At the end of 1962, eight mines (seven companies) were producing uranium compared with 23 at the peak period in 1959. In the Elliot Lake district, four mines operated throughout the year-Denison Mines Limited, Stanrock Uranium Mines Limited, and two mines (Milliken and Nordic) owned by Rio Algom Mines Limited; in the Bancroft area, two mines, operated by Macassa Gold Mines Limited (Bicroft) and Faraday Uranium Mines Limited, remained in operation; and in the Lake Athabasca district, two mines continued to operate - the government-owned mine of Eldorado Mining and Refining Limited and the privately owned mine of Gunnar Mining Limited. In 1962, a contract was signed with the United Kingdom Atomic Energy Authority for the delivery of 12,000 tons of uranium oxide ( $\mathrm{U}_{3} \mathrm{O}_{8}$ ) over a period extending until early in 1970. This contract will permit each of the seven producers to extend its period of operations approximately $16 \frac{1}{2}$ months past the completion date of existing contracts with the United States Atomic Energy Commission.

The Mines Branch of the federal Department of Mines and Technical Surveys, in collaboration with Eldorado Mining and Refining Limited and the Canadian Uranium Research Foundation, continued its program of research into non-nuclear uses of uranium. This program was undertaken in an effort to find new uses for uranium and thereby to provide an additional outlet for production during a period of otherwise declining demand. As part of this program, a new uranium steel alloy, developed by the Mines Branch in 1960, has been undergoing tests on a commercial scale.

Uranium producers are allowed to sell as much surplus uranium as they can to countries that hold bilateral agreements with Canada for co-operation in the peaceful uses of atomic energy, but there have been very few sales of this nature. Apart from the special contract agreements for the sale of uranium to the United States and Britain, Canada holds bilateral agreements with Australia, Japan, Pakistan, Sweden, Switzerland, West Germany and EURATOM (Belgium, West Germany, France, Italy, Luxembourg and the Netherlands). For other countries, a Canadian producer may, subject to government approval, sell up to $2,500 \mathrm{lb}$. of uranium.

Lead and Zinc.-On the basis of lead produced from domestic ores and the recoverable lead content of ores and concentrates exported, Canada's output in 1962, estimated at 190,609 tons, was substantially lower than the 1961 output of 230,435 tons. A large part of this reduction was accounted for by lower metal production at the Trail smelter in British Columbia operated by The Consolidated Mining and Smelting Company of Canada Limited. Output at Trail in 1962 was 152,217 tons compared with 171,833 tons in 1961. The average price of lead was 9.93 cents a pound; in 1961 it was 10.21 cents. Exports of lead in all forms during 1962 totalled 185,297 tons, most of it going as metal to Britain ( 48,082 tons) and to the United States ( 89,424 tons). Five countries imported lead in concentrates from Canada: Britain, 4,227 tons; Belgium and Luxembourg, 16,018 tons; West Germany, 10,020 tons; and the United States, 29,230 tons. Domestic consumption of primary and secondary lead in 1962 amounted to 77,286 tons.

Unlike lead, estimated production of zinc in all forms, including that from zinc plant residues, at 457,144 tons was considerably higher than the 416,004 tons produced in 1961. Quebec mines completing their first full year of production accounted for a large part of the increase and the remainder was accounted for by production increases at longestablished mines, most of them in British Columbia and Ontario. Production of refined zinc from Canada's two refineries-at Trail, B.C., and at Flin Flon, Man.-was 280,158 tons in 1962 compared with 268,007 tons in 1961. The average price of Prime Western grade zinc was 11.50 cents a pound in 1962 and 11.97 cents in 1961. Zinc exports during 1962 totalled 453,180 tons-242,457 tons in ores and concentrates and 210,723 tons as metal. Most of ores and concentrates (194,743 tons) went to the United States and the largest sales of zinc metal were made to Britain, the United States and India which imported 92,338 tons, 74,733 tons and 20,266 tons, respectively. Domestic consumption of primary and secondary zinc in 1962 amounted to 68,074 tons.

Five companies, operating six lead-zinc mines and one copper-zinc mine in the southern part of British Columbia produced nearly all of that province's lead and zinc. By far the largest portion was produced by The Consolidated Mining and Smelting Company of Canada Limited which concentrates about 11,900 tons of lead-zinc ore a day10,000 tons at the Sullivan mine at Kimberley, 1,200 tons at the H.B. mine at Salmo, and 700 tons at the Bluebell mine at Riondel. Other producers in this part of the province include Sheep Creek Mines Limited at Toby Creek, Canadian Exploration, Limited at Salmo, and Reeves MacDonald Mines Limited at Remac. At Britannia, 20 miles north of Vancouver, Howe Sound Company was the province's only producer of copper-zinc ore. Among the smaller lead and zinc producers were Mastodon-Highland Bell Mines Limited at Beaverdell in the south-central part of the province, Silbak Premier Mines, Limited at Stewart north of Prince Rupert, and several others in the Slocan district. Most of the concentrates from these mines, and some Yukon Territory and foreign concentrates were treated at the Trail smelter.

All the lead and nearly all the zinc produced in Saskatchewan and Manitoba came from the large Flin Flon mine, the Coronation and Schist Lake mines at Flin Flon and the Chisel Lake mine at Snow Lake, Man. Stall Lake Mines Limited at Snow Lake produced, in the latter part of 1962, some copper-zinc ore which it shipped to Hudson Bay's 6,000-ton-a-day mill at Flin Flon. Copper and zinc concentrates produced in this mill were treated in Hudson Bay's copper-zinc smelter and electrolytic zinc refinery at Flin Flon. The lead concentrate was sold to a custom smelter.

In Ontario, Geco Mines Limited and Willroy Mines Limited at Manitouwadge, north of Lake Superior, were Ontario's only producers of lead and zinc concentrates in 1962. Sherbrooke Metallurgical Company Limited continued to operate its zinc roaster at Port Maitland on Lake Erie. The concentrates came from Ontario and Quebec mines.

Quebec's lead and zinc production was somewhat higher than in 1961, due in part to production by The Coniagas Mines, Limited from its lead-zinc-silver mine at Bachelor Lake north of Senneterre, and by Vauze Mines Limited from its copper-zinc mine at Noranda, each of which completed its first full year of operation. Solbec Copper Mines, Ltd., which commenced production of copper, zinc and lead concentrates early in 1962 at its mine in the Eastern Townships, added a substantial amount of zinc and a smaller amount of lead to the province's production. Producers in northwestern Quebec continued to be Quemont Mining Corporation, Limited and Waite Amulet Mines, Limited at Noranda; Normetal Mining Corporation, Limited at Normetal; and Manitou-Barvue Mines Limited and Sullico Mines Limited near Val d'Or. Of these companies, ManitouBarvue was the only producer of a lead concentrate in addition to copper and zinc concentrates. New Calumet Mines Limited, on Grand Calumet Island in the Ottawa River some 55 miles west of Ottawa, produced lead and zinc concentrates.

In the Atlantic Provinces, the largest producer was American Smelting and Refining Company which operates a zinc-lead-copper mine at Buchans, Nfld. Other producers were Magnet Cove Barium Corporation, which completed its first year of production at Walton, N.S., and Heath Steele Mines Limited which re-commenced milling in mid-year at its mine in the Bathurst area of New Brunswick. In Yukon Territory, the principal sources of lead-zinc ores were the Calumet, Elsa and Hector mines in the Mayo district, operated by United Keno Hill Mines Limited. These ores were treated in the 500 -ton-a-day mill at Elsa.

In 1962, important exploration and development took place in the Bathurst area of New Brunswick, in the Mattagami area of northwestern Quebec and at Buttle Lake on Vancouver Island. Following completion of financial arrangements, Brunswick Mining and Smelting Corporation Limited at Bathurst in mid-year began to make preparations to place its mine properties in production late in 1963 or early in 1964. Mattagami Lake Mines Limited and Orchan Mines Limited announced their intentions of commencing production of zinc concentrates at their Mattagami Lake properties toward the end of 1963. Considerable underground development and surface construction was done by these three companies in 1962. Western Mines Limited completed some below surface exploration and development on its Buttle Lake base-metal property. Also of importance to lead and zinc mining in Canada was the commencement in February 1962 of a 438 -mile Canadian National Railways line from Grimshaw, Alta., to Hay River on the south shore of Great Slave Lake in the Northwest Territories. A branch line from this line will serve the important lead-zinc deposits at Pine Point on Great Slave Lake. Construction was started on a 200 -ton-a-day electrolytic zinc reduction plant at Valleyfield, Que., which will treat concentrates from some Ontario and Quebec mines.

Silver.-Although production of silver in substantial amounts started at two mines in 1962 and several producers completed their first full year of operation, Canada's silver production at $29,955,465$ oz.t. was somewhat below the 1961 output of $31,381,977$ oz.t. The decline was largely attributable to a drop in British Columbia lead production, with which silver is produced as a by-product. However, silver prices in world markets during 1962 reflected increasing demands for available silver and the Canadian price reached its highest level in 43 years on Oct. 19 at $\$ 1.3175$ per oz.t. At the beginning of the year the price was $\$ 1.1012$; at the year-end it was $\$ 1.3037$. Thus, although production was lower in 1962 its value amounted to $\$ 34,897,604$ compared with the value of the 1961 production at $\$ 29,580,651$.

Lead-zinc and silver-lead-zinc ores, which are mostly mined in British Columbia, are by far the most important of the various sources of silver in Canada, accounting annually for about 58 p.c. of the total output. Other major sources, from which about

25 p.c. of the production is derived, are copper, copper-nickel and copper-zinc ores, especially those mined in Ontario and Quebec. The silver-cobalt ores mined near Cobalt and Gowganda in northern Ontario account for about 15 p.c. of the output and small amounts are derived from lode- and placer-gold ores.

Canada's principal producer of refined silver is The Consolidated Mining and Smelting Company of Canada Limited which recovers silver from silver-lead-zinc ores treated at Trail, B.C. Other producers were Canadian Copper Refiners Limited at Montreal East, Que. (from blister copper), The International Nickel Company of Canada, Limited at Copper Cliff, Ont. (from blister copper), Hollinger Consolidated Gold Mines, Limited at Timmins, Ont. (from gold precipitates), the Royal Canadian Mint at Ottawa (from gold bullion), and Cobalt Refinery Limited at Cobalt, Ont. (from silver concentrates). The last company was formed in mid-1962 to operate a refinery which was erected in 1949 but had never produced on a permanent basis.

United Keno Hill Mines Limited is Canada's largest mine producer of primaryproduct silver. During the year ended on Sept. 30, 1962, this company produced $7,000,837$ oz.t. from its three mines in the Mayo district of Yukon Territory. Other leading primary producers in 1962 were: Glen Lake Silver Mines Limited which commenced operations in mid-1962; Agnico Mines Limited; Langis Silver and Cobalt Mining Company Limited; McIntyre Porcupine Mines, Limited; and Siscoe Metals of Ontario Limited, all in the Cobalt and Gowganda areas of Ontario. Mastodon-Highland Bell Mines Limited in British Columbia is also a leading producer.

Platinum Metals.-Production of platinum metals-including platinum, iridium, rhodium, ruthenium and palladium-amounted to 453,526 oz.t. valued at $\$ 28,085,528$ in 1962 , compared with a 1961 production of 418,278 oz.t. valued at $\$ 24,534,349$. These metals are derived as by-products of the treatment of nickel-copper ores and the entire output, except for an occasional ounce of placer production from British Columbia or the Yukon, comes from the International Nickel and Falconbridge mines in the Sudbury district of Ontario. The precious metal content of bulk nickel-copper concentrates smelted by International Nickel at Copper Cliff, consisting chiefly of platinum, has been estimated at $\$ 3$ a ton. The Thompson nickel project in northern Manitoba and the two new nickel-copper mines in Quebec and Ontario (see p. 522) are potential producers of platinum metals.

Canada, the Republic of South Africa and the Soviet Union supply the bulk of world output of platinum metals which, in 1961, amounted to $1,190,000$ oz.t. Of that amount Canada contributed 418,278 oz.t., South Africa an estimated $357,000 \mathrm{oz} . \mathrm{t}$. and the Soviet Union an estimated 350,000 oz.t.

The use of platinum metals in industry is becoming more diverse as research progresses. Palladium-silver alloys are now being used as membranes in diffusion cells in hydrogen purification; members of the platinum group are being increasingly used in fuel cells during research; platinum metals, either as catalysts or as electrode materials, are being considered for many auto smog control units; and the lesser known platinum metals-rhodium, ruthenium and osmium-show increasing desirability as polymerization and hydrogenation catalysts.

Cobalt.-Cobalt is derived as a by-product from the smelting and refining of the nickel-copper ores of Sudbury, Ont., and Lynn Lake, Man., and from the nickel ores of Thompson, Man. International Nickel recovers cobalt from its refinery operations at Port Colborne, Ont., and Clydach, Wales, based on its Sudbury and Thompson ores. Falconbridge Nickel recovers cobalt in the refining of its Sudbury nickel-copper matte at its refinery at Kristiansand, Norway. Sherritt Gordon produces refined cobalt powder and briquettes, and cobalt metal strip, in its refinery at Fort Saskatchewan, Alta., using nickel concentrates shipped from its mine at Lynn Lake in northern Manitoba. In 1962, Canadian cobalt production amounted to $3,441,746 \mathrm{lb}$. valued at $\$ 6,382,502$, compared with $3,182,897 \mathrm{lb}$. valued at $\$ 4,751,543$ in 1961.

Columbium.-St. Lawrence Columbium and Metals Corporation, the only Canadian producer of columbium concentrates, in 1962 shipped pyrochlore concentrates containing $967,000 \mathrm{lb}$. of columbium pentoxide from its mine and mill at Oka, Que., about 30 miles west of Montreal. Two other companies have carried out extensive research and exploration programs in the same area. Geo-Met Reactors Limited produced ferrocolumbium and a pyrochlore steel additive at its Ottawa, Ont., plant for domestic consumption and for export.

Molybdenum.-Molybdenite Corporation of Canada Limited was the principal Canadian producer of molybdenite in 1962 and the only producer of molybdic oxide; its mine and plant are at La Corne, Que. Pax International Mines Limited shipped trial lots of molybdenite from a property near Matachewan, Ont. In 1962, Canadian shipments of molybdenum contained in molybdenite amounted to $797,452 \mathrm{lb}$. valued at $\$ 1,228,672$. Preissac Molybdenite Mines Limited and Anglo-American Molybdenite Mining Corporation continued exploration and development work in the Lake Preissac area of Quebec. Gaspé Copper Mines, Limited successfully completed a pilot-plant study of the feasibility of recovering molybdenite as a by-product of its copper milling operations and will begin recovering molybdenite in 1963.

Titanium.-Ilmenite, an iron-titanium oxide, is mined in the Allard Lake and St. Urbain areas of Quebec; ilmenite from St. Urbain is sold as heavy aggregate and most of the ilmenite from Allard Lake is melted at Sorel, Que., in electric furnaces by Quebec Iron and Titanium Corporation to produce a high titania slag and pig iron. The slag is used by pigment producers in the manufacture of titanium-base pigments. Exports go mainly to the United States, Britain and Japan.

Domestic consumers of titania slag are Canadian Titanium Pigments Limited at Varennes, Que., and British Titan Products (Canada) Limited at Tracy, Que. The plant at Varennes has a capacity of $50,000,000 \mathrm{lb}$. of titanium dioxide pigment a year; the plant at Tracy, completed late in 1962, has a capacity of $44,000,000 \mathrm{lb}$. a year. Atlas Titanium Limited produced ferrotitanium from scrap metal at Welland, Ont., and Geo-Met Reactors Limited made trial lots of low-carbon ferrotitanium using titania slag from Sorel.

Selenium and Tellurium.-These metals are recovered from the anode muds produced by the refining of blister copper in the plants of Canadian Copper Refiners Limited at Montreal East, Que., and International Nickel at Copper Cliff, Ont. The principal use of selenium is in the manufacture of dry-plate rectifiers for electronic use; small quantities are used in the manufacture of glass, rubber and pigments. Tellurium is finding increasing use in the electronics fields for the manufacture of modules for the direct conversion of heat into electricity and the conversion of electric energy in a heat-sink for refrigeration purposes; small quantities are used in stainless steel castings, synthetic rubber and glass manufacture. Selenium production in 1962 totalled $506,015 \mathrm{lb}$. valued at $\$ 2,799,929$, an increase of $75,403 \mathrm{lb}$. and $\$ 951$ over 1961 output; tellurium production in 1962 was $61,211 \mathrm{lb}$. valued at $\$ 367,466$, compared with $77,609 \mathrm{lb}$. valued at $\$ 376,404$ in 1961.

Magnesium.-Production of magnesium metal in Canada was estimated at 8,235 tons in 1962 compared with 7,635 in 1961. Dominion Magnesium Limited is the only producer and most of the output is exported. Dolomite of exceptional purity is quarried and reduced to metal by the ferrosilicon method at Haley, Ont. Plant expansion from 8,000 to 10,000 tons annual capacity was completed in 1962 . The company is also the only Canadian source for the metals calcium, thorium, strontium and zirconium.

Aluminum.-Canada is second, after the United States, in Free World aluminum production and has an annual capacity at six smelters of 872,000 tons. There are two companies operating. Aluminum Company of Canada, Limited has smelters at Arvida, Isle Maligne, Shawinigan and Beauharnois in Quebec and at Kitimat in British Columbia.

Canadian British Aluminium Company Limited operates a 90,000 -ton smelter at Baie Comeau, Que., the capacity of which is to be expanded to 135,000 tons by 1965. As all bauxite or alumina for use by the aluminum smelters is imported, mainly from the Caribbean area, metal production is classed in official statistical data with manufactures and not with smelter production of metals from ores of domestic origin. Production of primary aluminum in 1962 was estimated at 690,000 tons compared with 663,000 tons in 1961 ; of the latter, 487,000 tons were exported and domestic consumption amounted to 127,000 tons.

## Subsection 2.-Industrial Minerals

The value of Canada's production of industrial minerals in 1962 increased by 4.4 p.c. to $\$ 558,181,000$ compared with 1961 , establishing a new record for the fourth successive year. This segment of the mining industry, which accounts for 20 p.c. of the nation's mineral production, includes the many non-metallic minerals and structural materials listed in Table 5, p. 559. The most important recent developments taking place among them are discussed below.

Asbestos.-Canada is the world's leading asbestos-producing nation and the major supplier of this mineral to the Free World market. During 1962 shipments of asbestos fibre from producing mines amounted to $1,223,509$ tons valued at $\$ 132,061,000$, a record high output which made up approximately 45 p.c. of world production.

Chrysotile, the most widely used variety of asbestos, occurs in several places in Newfoundland, Quebec, Ontario, British Columbia and Yukon Territory but the main centre of the industry is in the Eastern Townships of Quebec where 12 mines account for more than 90 p.c. of the nation's production. Two mines are in production in other parts of Canada-one in northern Ontario and one in northern British Columbia-and a large deposit at Baie Verte in Newfoundland is being developed, scheduled for production in mid-1963. Canadian Johns-Manville Company, Limited will operate the property and is constructing a 5,000 -ton-per-day mill.

Exploration and engineering studies of an asbestos deposit in Ungava are under way. Early in 1962, Murray Mining Corporation announced that an asbestos orebody, 3,600 feet in length and ranging in width from 150 feet to 200 feet, had been delineated at Asbestos Hill, 40 miles southeast of Deception Bay off Hudson Strait. The main ore zone was reported to have a reserve of at least $15,230,000$ tons containing 11.3 p.c. of recoverable fibre and the west-end ore zone a reserve of $2,480,000$ tons. The fibre from this deposit is semi-harsh and fast-filtering and consequently should find application in the asbestoscement industry. In May, Asbestos Corporation acquired an option on the property and began detailed engineering and feasibility studies. Development will require not only mining and milling plants but also power-generating facilities, a townsite, a transportation route to the coast and dock facilities for ocean transport.

Another development of interest to the industry during 1962 was the acquisition by the Eternit group of a $10-$ p.c. interest in Asbestos Corporation. This group embraces asbestos manufacturing firms in Europe.

Cement.-It is significant to note that Portland cement production in Canada now ranks ninth in the entire mineral industry in value of output. Production in 1962 reached an all-time high at an estimated $6,786,000$ tons valued at $\$ 113,864,000$. The many major engineering projects that have been constructed in recent years throughout the country have contributed to the growth of this industry. At the same time, concrete and concrete products have become leading building materials in contemporary construction, with precast and prestressed structural shapes replacing structural steel on an increasing scale. To serve the construction industry in the Montreal area, Francon Limited has entered the field of precast and prestressed concrete products with a modern plant at St. Michel, which contains the Continent's largest tension beds for prestressed beams and girders.

The first all-lightweight concrete multi-storey building in Canada, the National Trust Office, was completed in Toronto in 1962. More than $13,000 \mathrm{cu}$. yards of lightweight concrete, with a specified 28 -day compressive strength of $4,000 \mathrm{psi}$. and a unit weight of 115 lb . per cu. foot, were cast in the 22 -storey concrete frame. In addition, about 75,000 lightweight blocks were used in masonry. Precast concrete curtain walls with exposed aggregate finish emphasize a modern trend in architectural application.

Potash.-Nineteen years after potash salts were discovered at depth in Western Canada, this important natural resource was brought into successful production. Bulk concentrates of muriate of potash began moving to the market from the Esterhazy, Sask., plant of International Minerals and Chemical Corporation (Canada) Limited on Sept. 1, 1962. The project reached full production a few months later. With a capacity of $1,200,000$ tons $\mathrm{K}_{2} \mathrm{O}$ equivalent per annum, Esterhazy is the largest capacity potash unit in North America if not in the world. The mine shaft, 18 feet in diameter, was bottomed at 3,380 feet to provide access to the potash horizon at about 3,150 feet. Using the room-and-pillar method, potash is excavated by electrically operated, continuous-mining machines with twin cutting heads operating in a vertical plane and cutting a $7 \frac{1}{2}$-foot by 13 -foot oval opening.

The Potash Company of America Ltd. completed a 16 -foot concrete-lined shaft at Patience Lake near Saskatoon in 1958 and limited production was sustained for a tenmonth period in 1958-59. However, technical difficulties in maintaining a dry shaft caused the mine to cease operation for extensive repairs. The company plans to resume production at an annual rate of 350,000 tons $\mathrm{K}_{2} \mathrm{O}$ equivalent during 1963.

The emphasis being placed on Canadian potash is demonstrated by the fact that, at the end of 1962, 15 companies had under their control more than $2,000,000$ acres underlain by potash and had invested an estimated $\$ 100,000,000$ in Saskatchewan. World demand for potash is increasing by more than 500,000 tons $K_{2} \mathrm{O}$ equivalent per annum. Since, depending on the grade, several times this amount of ore is needed, a new mine each year is required to satisfy this demand. By the end of 1963 the Canadian potash industry should be in a position to supply 15 p.c. of the world market and will contribute $\$ 40,000,000$ annually to the country's mineral economy. Almost all the output will be exported, mainly to the United States but also to overseas markets, particularly to Asia.

Sulphur.-The large-scale development of natural gas resources of western Alberta and northwestern British Columbia has brought about a dramatic change in Canada's sulphur position. A few years ago, this country was entirely dependent upon foreign elemental sulphur to supplement the sulphur dioxide and sulphuric acid recovered from smelter gases and from the roasting of pyrite; today, it stands as a major source of that product. As a direct result of the expanded demand for western natural gas, the 1962 production of refined elemental sulphur was 668,000 tons, almost double the 1961 output, having a value of nearly $\$ 9,000,000$.

Canada ranks second to the United States among the elemental sulphur producers of the world and is capable of supplying 15 p.c. of the present world market. As a consequence, the Canadian industry is becoming a dominant factor in global markets. In 1962 shipments entered the northern United States and bulk cargoes moved from West Coast ports to the Republic of South Africa, Formosa, Australia and Britain.

Gypsum.-Although gypsum is mined in Newfoundland, Nova Scotia, New Brunswick, Ontario, Manitoba and British Columbia, 83.0 p.c. of the Canadian output comes from Nova Scotian mines and much of it is exported to the United States in crude form. Total shipments in 1962 amounted to over $5,000,000$ tons valued at $\$ 9,033,000$. The quantity increase over 1961 was 5 p.c., accounted for by increased demand in the United States. The year was an active one for the industry. Of particular note was the commencement of shipments by the Flintkote Company of Canada Limited from its deposit in the Flat Bay area of Newfoundland where gypsum reserves are estimated to
be $200,000,000$ tons. The provision of deepwater shipping facilities and an aerial transportation system made it possible to ship the crude product to the parent company's board plants in eastern United States and to the company-operated board plant at Humbermouth, Nfld. In September, Bestwall Gypsum Company began shipping from the River Denys deposit on Cape Breton Island to company plants in eastern United States. Storage and shipping facilities were installed at Point Tupper on the Strait of Canso.

Salt.-Shipments by the salt industry in 1962 reached an all-time high, exceeding $3,600,000$ tons with a value of over $\$ 23,000,000$. Approximately one half of the Canadian production is rock salt mined at Pugwash in Nova Scotia and at Ojibway and Goderich in Ontario, mainly for use on roads and in chemical plants. Although the Canadian salt industry is facing growing competition from United States producers, it exports about one third of its production.

Silica.-A major development in the silica industry during 1962 was the $\$ 1,000,000$ expansion of the Canadian Silica Corporation plant at St. Canut, Que. Capacity was increased threefold to 300,000 tons annually and wet-processing stages were added. The company is quarrying a sandstone from the Potsdam formation and processing it into sand products for industry. A premium-quality sand is finding ready acceptance in the manufacture of flint-glass containers and glass sand is processed for the manufacture of coloured containers and sheet glass. The main market for high-quality silica sand is in the Montreal and Trois Rivières area where it is used by the glass industry and also in the manufacture of silicon carbide. Until recently, most of the requirements were imported from the United States.

## Subsection 3.-Petroleum and Natural Gas

One of the best ways of measuring a resource industry's progress is to examine its production trend. On this basis, it may be said that the oil and natural gas industries had a successful year in 1962 and, further, circumstances at the year-end were such as to foretell a good year for 1963. Crude oil production averaged $668,000 \mathrm{bbl}$. daily during 1962. In addition, output of liquid hydrocarbons from natural gas was also at record levels and added an average of $66,000 \mathrm{bbl}$. daily to bring total production of all liquid hydrocarbons (crude oil, condensate, natural gasoline, butane and propane) to 734,000 bbl. daily. The rates of production at the year-end and during the early months of 1963 were at record highs, and by February output had exceeded the national oil policy goal of $800,000 \mathrm{bbl}$. daily of all liquid hydrocarbons, as set for the end of 1963.

All western provinces except Manitoba shared in the increased production. Manitoba's output since 1957 has been declining steadily and the absence of new oil discoveries indicates a continuation of this trend. Exploration and development of British Columbia oil resources continued at a high level as a result of the completion of a new oil pipeline in 1962. This new line permits oil from northeastern British Columbia to be delivered to the Trans Mountain pipeline at Kamloops which in turn serves refineries near Vancouver and in the State of Washington. A further inducement to exploratory industry activity in British Columbia arises from the fact that considerable land remains to be tested for oil and gas resources. In Alberta production increased by 4 p.c. and established an annual record. Saskatchewan output rose by 15 p.c.

Production of natural gas liquids is adding significant quantities to the over-all production of liquid hydrocarbons. Production in 1962 was as follows: Alberta 21,700,000 bbl., British Columbia $1,400,000 \mathrm{bbl}$. and Saskatchewan $1,100,000 \mathrm{bbl}$. Natural gas production reached a record level in 1962, 46 p.c. greater than 1961 . The newly acquired export market in the United States, served by the Alberta-to-California pipeline completed in December 1961, and increased domestic demand gave the gas industry its best year in both export and domestic markets.

The number of wells drilled annually in Western Canada in each of the past five years has been fairly constant, ranging from 2,450 to 2,650 . In 1962, the number completed (excluding service wells) was 2,460, about the same as in 1961. A sharp increase in drilling in British Columbia counterbalanced declines in the other western provinces and the territories. The generally greater depth of wells brought about a small increase in the total footage; nearly $13,600,000$ feet were drilled compared with $13,470,000$ feet in 1961. There was a notable increase in the proportion of exploratory drilling in 1962; of the total drilled footage, 36 p.c. was exploratory, compared with 29 p.c. in 1961 and 31 p.c. in 1960, partly accounting for the significantly greater number of dry holes, of which there were 879. Gas well completions totalled 344 and there were 1,237 new oil wells.

The decline in geophysical activity, in terms of crew-months, which had been evident since 1952, was arrested. A month-by-month comparison of 1961 and 1962 shows geophysical work approximately the same for both years. In Alberta, where seismic survey crews were more active in 1962 than in the previous year, much ground was being resurveyed. Oil companies realized that small- and medium-sized oil pools could have been overlooked by earlier surveys because of less advanced methods of field work and interpretation and also because of a preoccupation with finding large reef fields.

Alberta.-In 1962, the total footage drilled in the search for and development of petroleum and natural gas reserves amounted to $9,100,000$ feet, a decrease of more than 800,000 feet compared with 1961. Despite this total decrease, exploratory drilling increased by 200,000 feet to nearly $3,200,000$ feet. Development of known pools and fields decreased very sharply as a consequence of a lack of large new fields. No major fields have been found since the Swan Hills discoveries of 1957, and the fields of that region are now almost fully developed. The 684 oil wells completed in 1962 represent a decrease of 100 wells from the preceding year. Gas-well completions decreased sharply for the first time in several years, with 272 gas wells drilled. The net result of 1962 drilling was to increase the province's total of new oil wells capable of production from 10,529 to 10,796 , and gas wells from 1,088 to 1,240 . These figures take into account abandonments and some conversions to service wells.

Although oil and gas finds in 1962 did not indicate the discovery of any major fields, several appear likely to lead to the development of some medium-sized fields. The most interesting exploratory activities took place late in the year at Snipe Lake, 35 miles southwest of Lesser Slave Lake. An oil discovery in reef formation led to an important land play involving several large oil companies. Although several subsequent wells found oil and much ground remains to be tested, the field does not appear to be in the size category of such fields as Swan Hills. High prices were paid for land in the Edson region, 125 miles west of Edmonton, following discovery of significant amounts of gas in Mississippian strata and of oil in the Cardium formation. In March 1962, a very productive oil well was drilled at Loon Lake near the Red Earth oil field, 80 miles north of Lesser Slave Lake. At Panther River, 70 miles northwest of Calgary, large reserves of sulphur were indicated by a gas well which had a high content of hydrogen sulphide in its output. A good natural gas discovery was made 13 miles to the southwest of this sulphur well. In the more settled regions in the southern half of Alberta, various small- and medium-sized oil and gas discoveries were made, one of the more notable locales being at Sylvan Lake near Red Deer, where both oil and gas were found in several geological horizons in a series of wells.

A major step toward the eventual large-scale production of crude oil from the Athabasca oil sands was taken in 1962 when the Alberta Oil and Gas Conservation Board gave approval to a project which is to extract crude oil from the sands at a rate of 31,500 bbl. a day. This will be the first commercial extraction of oil from the sands, and actual production of marketable crude is scheduled for the end of 1966. Although this is only a moderate-sized project, two applications for large projects are before the Board, each of which calls for the extraction of $100,000 \mathrm{bbl}$. daily from the oil sands.

British Columbia.-A very substantial increase in the amount of drilling in British Columbia in 1962 brought the total for the year to nearly $2,000,000$ feet. The 1961 total, an all-time record at that time, was slightly more than $1,000,000$ feet. Drilling in 1962 was divided almost equally between exploration and development. The province had a high success ratio in drilling, with 159 new oil wells and 62 gas wells compared with 93 dry holes. The large number of oil wells was mostly the result of intense development of the Boundary Lake field, where the number of oil wells capable of production was increased from 130 at the end of 1961 to 250 in December 1962. Considerable development was also carried out in several smaller fields, especially Milligan Creek, Peejay, Wildmint and Blueberry. In exploration, the most important results of the drilling were several large gas discoveries. Near Fort Nelson, the Slave Point formation yielded two particularly good gas producers known as the Yoyo and Junior wells. Nearer to Fort St. John, the Pink Mountain and Moberly Lake gas discoveries, producing from Mississippian and Triassic formations, respectively, were among the more noteworthy results of exploration work.

Saskatchewan.-Drilling in Saskatchewan has been declining since 1957, except for a brief upturn in 1961. In 1962, 580 wells (excluding service wells) were completed compared with 643 in 1961. However, a renewal of exploration interest in the province was reflected in a slight increase in footage drilled-which amounted to $2,350,000$ feet-and a considerable increase in the number of deep exploratory holes. Several recent deep oil discoveries in the Williston basin in Montana and North Dakota have resulted in new attempts to find oil in lower Palæozoic rocks in the portion of the basin underlying southeastern Saskatchewan. The most important oil discovery in the province was probably one made near the Willmar field, 12 miles northeast of the Steelman field. The well was followed up with nearly a dozen wells in the same pool. The most active area in terms of development was once again the Dodsland field in the Coleville-Smiley region, although drilling there has decreased since 1961.

Manitoba.-Twenty-one wells were drilled in Manitoba in 1962 compared with 27 in 1961. A measure of the decline of oil exploration and development is obtained by comparing these figures with the peak period 1954-57 when more than 200 wells were drilled annually. Well footage in 1962 totalled 57,393 feet of which 40 p.c. was of an exploratory nature. Two oil discoveries were made in the southeastern corner of the province.

Yukon and Northwest Territories.-The eight wells completed in the territories, all exploratory, aggregated 54,000 feet, about three quarters of the 1961 footage. No important discoveries were announced. Three deep wells were being drilled in Yukon Territory in early 1963. The well-known Melville Island dry well was abandoned early in 1962 at a depth of 12,543 feet. Despite this failure, oil-company interest in the Arctic islands has remained strong, especially since mapping has revealed outcrops of oil-saturated sands on northwestern Melville Island, a discovery which removes doubt as to whether oil-forming conditions existed during the geological history of the region.

Eastern Canada.-In Ontario, more deep-well exploration and less shallow-well field development resulted in an increase in footage drilled, despite a pronounced decrease in the number of wells drilled; a total footage of 360,629 feet and 205 wells (excluding service wells) in 1962 compared with 344,816 and 253 wells in the preceding year. Exploratory drilling comprised 46 p.c. of the footage. Since the discovery of the Gobles field in Cambrian strata in 1960, greater emphasis has been placed on testing the lowest Palæozoic formations. In the field development sector, a pilot waterflood project was started in the province's most productive oil field, the Rodney field.

In Quebec, activity declined in the region around the Pointe du Lac gas field where a large number of shallow wells had been drilled in 1961. However, a deep hole of proposed depth of 4,500 feet was started late in 1962, and at about the same time a hole of similar anticipated depth was started on Anticosti Island. Two deep diamond drill holes, both dry,
were put down in search of oil on the Gaspe peninsula. In New Brunswick, equipment was ordered in preparation for a waterflood scheme in the small and aging Stoney Creek oil and gas field.

Petroleum Refining and Marketing.-Two new refineries were being built at the close of 1962; one near Toronto, Ont., will have a capacity of $30,000 \mathrm{bbl}$. daily and one near Dartmouth, N.S., will have a capacity of $13,500 \mathrm{bbl}$. daily. Also, three refineries were modified during the year to increase total capacity by $17,900 \mathrm{bbl}$. daily. The BP Refinery Canada Ltd. plant at Montreal, Que., was enlarged to $30,000 \mathrm{bbl}$. daily, an increase of 4,000 bbl.; the Regent Refining Limited plant at Port Credit, west of Toronto, increased its capacity by $9,000 \mathrm{bbl}$. to $35,000 \mathrm{bbl}$. daily; and the British American Oil Company Limited in Edmonton, Alta., added a unit to increase capacity from 7,700 to $12,600 \mathrm{bbl}$. daily. The rate of growth of the petroleum refining industry from 1942 to 1962 is indicated in Table 1.
1.-Petroleum Refining Throughput Capacity, by Region, as at Dec. 31, 1942, 1952 and 1962

| Region | 1942 |  | 1952 |  | 1962 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | bbl. per day | p.c. | $\begin{aligned} & \text { bbl. } \\ & \text { per day } \end{aligned}$ | p.c. | $\begin{aligned} & \text { bbl. } \\ & \text { per day } \end{aligned}$ | p.c. |
| Atlantic Provinces. . | 34,250 | 14.7 | 22,300 | 4.9 | 106,300 | 10.9 |
| Quebec............. | 67,000 | 28.7 | 164,000 | 35.8 | 301,000 | 30.7 |
| Ontario............................. | 68,000 | 29.1 | 104,500 | 22.8 | 269,820 | 27.5 |
| Prairie Provinces and Northwest Territories. | 39,865 | 17.1 | 139,250 | 30.4 | 205,240 | 21.0 |
| British Columbia..................... | 24,500 | 10.4 | 28,350 | 6.1 | 97,300 | 9.9 |
| Canada. | 233,615 | 100.0 | 458,400 | 100.0 | 979,660 | 100.0 |

Consumption of Canadian crude oil by domestic refineries in 1962 averaged 464,000 bbl. daily, an increase of 9 p.c. over 1961. Foreign oil received by plants in Canada averaged $370,000 \mathrm{bbl}$. daily, bringing total crude oil received by refineries in Canada to an average of 834,000 bbl. daily for the year. Domestic oil thus accounted for almost 56 p.c. of all crude received in 1962 compared with 54 p.c. in 1961. Refineries in the United States, Canada's only market for crude oil and petroleum products, received an average of $235,000 \mathrm{bbl}$. of crude oil daily from Canada, an increase of 30 p.c. over 1961. Refineries in the United States Puget Sound region, served by the Trans Mountain pipeline, received an average of $125,000 \mathrm{bbl}$. daily in 1962 and exports via the Interprovincial pipeline to the Great Lakes region averaged $110,000 \mathrm{bbl}$. daily. In this region, $40,000 \mathrm{bbl}$. a day went to plants near Lake Erie and the remainder of $70,000 \mathrm{bbl}$. a day went to plants west of Lake Erie but east of the Rocky Mountains. Imported oil continued to come chiefly from Venezuela and Middle East countries. Table 2 gives the regional demand for domestic and foreign crudes.

## 2.-Domestic and Foreign Crude Oil Received at Canadian Refineries, by Region, 1951, 1961 and 1962

| Region | 1951 |  | 1961 |  | 1962 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Domestic | Foreign | Domestic | Foreign | Domestic | Foreign |
|  | bbl. per day | bbl. per day | bbl. per day | bbl. <br> per day | bbl. per day | bbl. per day |
| Quebec and Maritimes............... | 37059 | 161,794 | - 578 | 358,723 | 229, 268 | 368,720 |
| Prairie Provinces and Northwest | 37,959 | 43,680 | 220,578 | 7,000 | 229,268 | 1,356 |
| Territories...................... | 91,317 | 248 22,058 | 140,170 66,439 | 二 | 160,710 74,360 | 二 |
| Canada | 129,276 | 227,780 | 427,187 | 365,723 | 464,338 | 370,076 |

Natural Gas Processing and Marketing.-During the past decade, Canadian reserves of natural gas have become sufficient to supply not only an expanded Canadian market but also several areas in the United States. Much of the gas for these markets requires processing to remove constituents, such as sulphur, which add further to the mineral output of Canada. Propane, butane and other liquid hydrocarbons valuable to the petroleum refining and petrochemical industries are also recovered. The extent to which the natural gas processing industry has developed is apparent from a comparison of gas plant capacities. In 1952 there were five plants having a combined raw-gas treating capacity of 380,000 Mcf. daily. By 1962 there were 66 plants in Alberta, five in Saskatchewan, two in British Columbia and one in Ontario, a total of 74 plants having a raw-gas capacity of $3,400,000 \mathrm{Mcf}$. daily. The gas from these plants and from several fields which produce dry gas provided over $750,000,000 \mathrm{Mcf}$. of gas for all markets in 1962. Exports amounted to over $900,000 \mathrm{Mcf}$. daily and domestic sales to $1,125,000 \mathrm{Mcf}$. daily.

There were small quantities of gas imported into Canada, mostly into southwestern Ontario; in 1962 imports were only about 5,500,000 Mcf.

## Subsection 4.-Coal*

The small increase in coal production noted in 1960 was, unfortunately for the industry, short-lived and further decline was experienced in 1961, the industry becoming more and more the victim of competition from other fuels. Closure of high-operating-cost mines, although improving the financial situation of the individual companies, increased productivity per man-day, and more and improved coal cleaning and quality control were not sufficient to halt the decline in demand. Production in 1961 was about $8,000,000$ tons lower than in 1951 and consumption about $22,500,000$ tons lower. Imports were reduced to less than half-from $26,000,000$ tons to $12,000,000$ tons. The one bright spot was the increase in exports of western bituminous coking coal to the United States and Japan which resulted in a 1961 export total double that of 1951. 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 bases of costs per ton and per million Btu some improvement was noted in 1961.

Assistance to the coal industry was given by the federal and provincial governments through continued research programs. The problem of fine coal production received attention with research directed toward improved methods of mining, beneficiation and combustion. Technical assistance rendered in the field of quality control through sampling and analyses, and studies of the coking properties of coals in relation to their preparation for export markets and their use in prospective steel industries are other means by which assistance is given.

Financially, the Federal Government continued assistance to the coal industry through the Dominion Coal Board (see p. 549) with aid in the acquisition of new equipment and subventions on coal transportation. More than 32 p.c. of the coal production was moved with the aid of subvention payments, the total tonnage to which this applied, $3,300,000$, being 11.6 p.c. more than in 1960. The value of this assistance, which in 1960 amounted to $\$ 16,344,196$, rose in 1961 to $\$ 17,854,456$. The Federal Government also made payments in 1961 totalling about $\$ 1,570,000$ under the Atlantic Provinces Power Development Act, 1958, which indirectly aids the marketing of coal.

Production and Value.-Production of coal in Canada in 1961 decreased 5.6 p.c. to $10,400,000$ tons, only about 54 p.c. of the record production of $19,139,112$ tons in 1950 . The average value for all coal was $\$ 6.737$ per ton or 29.42 cents per million Btu. This declining production and accompanying mine closures were reflected in the employment at the mines, where the number of man-days dropped from 2,552,127 in 1960 to 2,291,933 in

[^154]1961 -more than 10 p.c. In Nova Scotia, the major coal-producing province and most affected by declining coal markets, the decrease in coal-mine employment was 10.3 p.c. from $1,711,150$ man-days in 1960 to $1,535,176$ man-days in 1961. Employment in Alberta and Saskatchewan coal mines dropped 21.4 p.c. and 18.4 p.c., respectively, but in British Columbia it increased by more than 4 p.c.

The major part ( 65.7 p.c.) of the coal produced was bituminous, valued at $\$ 8.990$ per ton or 33.46 cents per million Btu at the mine. Subbituminous accounted for 13.1 p.c. of production and lignite for 21.2 p.c. The average value of subbituminous coal was $\$ 4$ per ton, this being 23.39 cents per million Btu, and the value of lignite was $\$ 1.706$ per ton at 11.53 cents per million Btu. Bituminous coal production decreased 10.4 p.c. and subbituminous 12.8 p.c., but lignite increased 1.9 p.c. as a result of the demand by thermal power plants in Saskatchewan.

The proportion of the output won by stripping methods was more than 38 p.c. The output per man-day of coal from Canada's strip mines was 15.4 tons in 1961 compared with 3.149 tons from underground mines. This represented an increase of 0.3 tons for strip mines and an increase of 0.182 tons for underground mines. The over-all output per manday increased from 4.326 to 4.536 tons.

Consumption, Imports and Exports.-The consumption of coal in Canada decreased 7 p.c. in 1961 to about $21,600,000$ tons. About 56 p.c. of the coal consumed was imported, more than 91 p.c. of it being bituminous coal used mainly in Ontario and Quebec. Total imports of coal were about 10 p.c. lower than in 1960. The production of coke used more than $5,300,000$ tons of coal, of which about 88 p.c. was imported. The sale of coal by retail fuel dealers to the commercial and household heating markets decreased more than 600,000 tons. Use of coal by industrial consumers, including thermal-electric power plants, decreased slightly to $9,850,000$ tons in 1961 compared with $9,890,000$ in 1960. Railway locomotives are no longer a significant market for coal with only 11,000 tons being used in 1961 compared with the $9,800,000$ tons used for this purpose in 1952.

Exports of Canadian coal in 1961 amounted to 939,360 tons compared with 852,921 tons in 1960. Most of this went to the United States and Japan for blending in the manufacture of metallurgical coke. The manufacture of briquettes decreased from 81,182 tons in 1960 to 67,327 tons in 1961.

Provincial Activities of 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.-Nova Scotia, with a coal production of 4,300,758 tons, accounted for more than 41 p.c. of the Canadian coal output in 1961. Production was 5.9 p.c. lower than in 1960. The coal is high volatile bituminous coking coal mined in the Sydney, Cumberland and Pictou areas, and some non-coking bituminous coal in the Ste. Rose, Inverness and Port Hood areas on the west coast of Cape Breton Island. The over-all value at the mines decreased to $\$ 9.700$ a ton from $\$ 9.842$ a ton in 1960 , representing about 36.06 cents per million Btu. The output per man-day was 2.801 tons in 1961 compared with 2.671 tons in 1960.

All Nova Scotia coal comes from underground mines, most of which are mechanized. Coal-washing plants are operated at two of the collieries and prepare about 27 p.c. of the province's coal production. Much of the output is used locally for industrial steam-raising, electric power production, household and commercial heating and the manufacture of metallurgical coke. In 1961 more than 62 p.c. of the production was shipped to other provinces, mainly Central Canada. Subvention payments were made by the Dominion Coal Board on the movement of $2,323,684$ tons.

New Brunswick.-New Brunswick's production, of which 82.1 p.c. was strip-mined, was entirely high volatile bituminous coal from the Minto area, with a small amount from the Chipman and Coal Creek areas. The production of 887,903 tons in 1961, about 8.5 p.c.
of Canada's output, represented a decrease of about 13.6 p.c. Average output per man-day from strip mines was 5.26 tons and from underground mines 1.79 tons. New Brunswick coals had an average value at the mines of $\$ 8.477$ a ton, amounting to about 35.62 cents per million Btu.

Modern coal-washing plants equipped with Baum-type and feldspar jigs are operated at two of the strip-mining operations, thus making it possible to mechanically clean 47 p.c. of the province's coal output. A large part of the production is used locally for heating, electric power generation, and processing; more than 15 p.c. is shipped to Central Canada and about 12 p.c. is exported to the United States. Government subventions aided in the moving of 146,201 tons during 1961.

Saskatchewan.-Coal produced in this province was entirely lignite, mined by stripping in the Bienfait and Estevan areas in the Souris Valley. Production in 1961 amounted to $2,208,851$ tons, a 1.8 -p.c. increase over 1960 , and represented about 21.2 p.c. of the Canadian production. It was valued at the mine at an average of $\$ 1.706$ per ton, and at 11.53 cents per million Btu was the cheapest source of coal in Canada. The Estevan area serves the provincially owned thermal-electric generating stations, which in 1961 used about 32 p.c. more lignite than in 1960 and consumed about 43 p.c. of the total output. The average output per man-day was 42.247 tons. Almost 35 p.c. of the 1961 output was shipped to Manitoba and about 4 p.c. to Ontario for industrial, commercial and household use. Subvention assistance was given on 104,807 tons.

The production of briquettes, manufactured from carbonized lignite and used entirely for commercial and household purposes, decreased 7.9 p.c. to 32,132 tons.

Alberta.-Several types of coal are available in Alberta, ranging from semi-anthracite mined in the Cascade area, to subbituminous. Coking bituminous coals are present in the Inner Foothills Belt but, owing to market conditions, they are at present mined mainly in the Cascade and Crowsnest areas. The coal is used for industrial steam-raising and for commercial and household heating. Increasing quantities of coking coal are exported to the United States and Japan for use in the metallurgical industries. In several areas of the foothills, lower rank bituminous non-coking coals are available but production is confined mainly to the Lethbridge area. The other coal areas produce subbituminous coals, used mainly for household and commercial heating and thermal power generation. The three largest producing areas for subbituminous coals are Castor, Drumheller and Sheerness.

Coal production in Alberta decreased 15.2 p.c. in 1961 to 2,027,826 tons, this being about 19.5 p.c. of the nation's coal output. Production has been declining sharply since 1947 when the Leduc oil field was discovered and with the subsequent expansion of the natural gas industry. The 1961 production was about 25 p.c. of that of 1947. Subbituminous coal accounted for about 67 p.c. of the 1961 output and production decreased by 11.6 p.c. The output of bituminous coal decreased 21.7 p.c. to 666,226 tons. Of the total coal production, 47.9 p.c. was won by stripping, the average output per man-day being 14.874 tons compared with 4.826 tons for the underground mines. Bituminous coal was valued at $\$ 7.115$ per ton and 27.47 cents per million Btu at the mine, and the average value of subbituminous coal was $\$ 4.210$ per ton and 23.39 cents per million Btu.

Of the provincial production, 1.7 p.c. was shipped to Central Canada, nearly 8 p.c. (mainly subbituminous) to Manitoba, 11.5 p.c. to Saskatchewan and 15.9 p.c. to British Columbia. Subvention assistance from the Dominion Coal Board applied on the movement of 758,011 tons of Alberta and British Columbia coal.

The output of briquettes, which are made from the semi-anthracite and low volatile bituminous coals of the Cascade area and the medium volatile coals of the Crowsnest area, decreased from 45,453 tons in 1960 to 35,195 tons in 1961.

British Columbia and Yukon Territory.-In British Columbia coal was mined in 1961 mainly in the Vancouver Island and Crowsnest Pass (East Kootenay) districts with a small output from the mines in the Nicola-Princeton and Northern districts. These coals
range from high to low volatile bituminous coking coals. Production increased to 964,663 tons, about 9.3 p.c. of the country's output, with an average value of $\$ 6.690$ per ton and 24.24 cents per million Btu. About 9 p.c. of the output was from strip mines. The average output per man-day was 28.215 tons for strip mines and 4.678 tons for underground mines.

Beneficiation facilities located at Union Bay (Vancouver Island) and Michel (East Kootenay) process nearly all of British Columbia's coal production. Of the 1961 output, 15 p.c. was shipped to Manitoba, 1.3 p.c. to Ontario, and negligible quantities to Alberta and Saskatchewan. Almost 44 p.c. of the output of coking coal from the Crowsnest area was exported to southwestern United States and Japan for blending in the manufacture of metallurgical coke.

In the Yukon Territory, 7,703 tons of coal were taken from a single underground mine with an average output per man-day of 3.231 tons. This coal was valued at $\$ 14.830$ per ton and 64.76 cents per million Btu.

## Section 2.-Government Aid to the Mineral Industry

## Subsection 1.-Federal Government Aid

The Department of Mines and Technical Surveys.*-The federal Department of Mines and Technical Surveys came into being on Jan. 20, 1950, in the reorganization of the former Department of Mines and Resources. The Department has six branchesSurveys and Mapping Branch, Geological Survey of Canada, Mines Branch, Dominion Observatories, Geographical Branch and, established effective Apr. 1, 1962, the Marine Sciences Branch. The Department's functions include the administration of the Emergency Gold Mining Assistance Act, the Explosives Act and the Canada Lands Act.

Surveys and Mapping Branch.-This Branch provides the base maps required for use in the development of Canada's natural resources, is responsible for legal surveys of federal lands and provides a national system of levelling and precision surveys for use as geodetic control by federal, provincial and private agencies.

The Geodetic Survey provides the original surveys that form the framework or basic control for mapping throughout Canada and for engineering and surveying projects related to natural resources development. Survey stations are established at fairly regular intervals across Canada and are marked by permanent monuments whose latitudes, longitudes and elevations above mean sea level are determined with a high degree of accuracy.

The Topographical Survey provides topographical maps that show all significant natural and artificial features fundamental to the study and economic development of mineral and other natural resources. The Field Survey Section is responsible for the field surveys that provide ground control for mapping from aerial photographs, and the Air Surveys Section plots and produces maps from these aerial photographs. The National Air Photographic Library indexes, preserves and distributes prints of all aerial photography done by or for the Federal Government.

The Legal Surveys and Aeronautical Charts Division makes and records legal surveys of federal Crown lands in the Yukon and Northwest Territories, the National Parks and Indian lands and reserves. This Division prepares aeronautical charts and electoral maps and prepares and distributes flight manuals.

The Map Compilation and Reproduction Division prepares, drafts and reproduces maps, charts and plans for lithographic printing in multi-colour. The work includes the preparation and photo-reproduction of air chart bases, the reproduction and printing of air information for aeronautical charts, the preparation and printing of topographic maps and the reproduction and printing of hydrographic charts.

[^155]Marine Sciences Branch.-On Apr. 1, 1962, the Department established a Marine Sciences Branch to combine hydrographic surveys and research in oceanography, marine geology and the geophysical sciences of the seas. The function of the Branch is to carry out hydrographic and other oceanic surveys and to conduct oceanographic research in the nearby oceans, in Canada's coastal and inland waters, and on the underlying seabeds for the threefold purpose of assisting navigation, with particular reference to Arctic waters; of ascertaining the resource potential of the country's continental shelf; and of undertaking the extensive program of oceanographic research required for military and civilian purposes. The resultant information will also greatly assist the commercial fisheries.

The Branch comprises the Canadian Hydrographic Service, the Division of Oceanographic Research and a Ship Division. The Canadian Hydrographic Service is responsible for the charting of the coastal and inland navigable waters of Canada, the analyses of tides and tidal current phenomena and the investigation of water-surface elevations of the St. Lawrence-Great Lakes waterway. The resultant data are published in the form of official navigation charts, volumes of Sailing Directions, Tide Tables and Water Level Bulletins.

The Division of Oceanographic Research has charge of the extensive program of oceanographic research assigned to the Department in 1960 by the Canadian Committee on Oceanography, an interdepartmental body co-ordinating all oceanographic research in Canada. The Division is responsible for meeting the increasing federal needs for oceanographic information in waters of Canadian interest, mainly for defence, transport and resource assessment purposes. This includes an intensive study of oceanography in the Arctic and the extension of Canadian studies farther out to sea to examine the special problems of the deep ocean. In addition, the Division contributes to international oceanographic studies in which Canada is involved. Hydrographic and oceanographic activity on the Atlantic Coast and in the Arctic is centred in the recently completed Bedford Institute of Oceanography located on the Atlantic Coast near Halifax, N.S. The Institute comprises a modern office and laboratory building, equipment and ships' depot, machine woodworking and electrical shops for minor repairs to the ships and the construction of special equipment, and ships' berthing facilities capable of accommodating ten ships. A similar centre is planned for 1965 on the Pacific Coast but, meanwhile, functions on the West Coast are centred in a hydrographic establishment at Victoria, B.C. The Inland Waters Section works out of Ottawa.

The Ship Division was organized in 1962 to be responsible for the management of the fleet of ships and launches which the Branch uses in its work. The majority of these craft are for hydrographic survey; others are multi-purpose ships which are also employed on oceanographic research. Replacement of old and obsolete craft is being provided under a long-range shipbuilding program. The most recent addition to the fleet, CSS Hudson, was accepted from the builder in 1963. She is an icebreaker of 4,600 tons displacement with the capability for oceanographic research in any waters of the world, as well as for the latest methods of hydrographic surveying.

Geological Survey of Canada.-The primary function of the Geological Survey is to obtain information on the geology of Canada that will be of assistance in the search for and development of mineral deposits. The results of its activities also provide a basis for the appraisal and conservation of Canada's mineral resources generally (including water supplies), for soil surveys and for the solution of geological problems that frequently arise in construction projects. Reports issued by the Geological Survey include: memoirs with fairly complete descriptive accounts of the geology of particular areas, usually accompanied by geological maps; bulletins dealing with problems rather than areas; papers issued as soon as possible after the close of the field season, treating separately of each area and summarizing the information acquired; and the Economic Geology Series dealing in a comprehensive way with mineral deposits of a particular type. Information circulars, issued in advance of the more detailed reports, contain data of immediate interest to prospectors. Coloured geological maps are issued on various scales from one inch equalling
a few hundred feet to one inch equalling eight or more miles, the common standard scales being one inch to one mile and one inch to four miles. Preliminary maps showing the geology are issued shortly after the field season ends for those areas where the search for metals or minerals is active. Metallogenic maps show the Canada-wide distribution of known occurrences of particular metals classified according to type of deposit.

The Regional Geology Division is responsible for mapping and studying the rocks of the eastern and western segments of the Precambrian shield, and the Appalachian and Cordilleran regions.

The Economic Geology Division investigates the geology of specific mineral deposits, applies and develops geochemical techniques, and maps and studies unconsolidated deposits that mantle much of the country and, in several provinces, carries out surveys of groundwater resources.

The Fuels and Stratigraphic Geology Division includes stratigraphic palaeontology, the geology of fuels (oil, natural gas and coal), subsurface geology, and research on coal. Its function is to establish the character, age, thickness and correlation of both exposed and concealed sedimentary formations and to map the distribution and structure of these formations with the object of determining the economic possibilities of prospective oil, gas and coal bearing areas of Canada.

The Petrological Sciences Division makes mineralogical, petrological, and isotopic studies of Canadian mineral deposits and associated rocks. Laboratories provide mineral identifications for the public, supply officers of the Survey with mineralogical and geochronological data, and permit research on the genesis of ores, fuels and rocks. Systematic mineral collections are maintained and mineral and rock collections are prepared for use by prospectors and educational institutions.

The Geophysics Division gathers, compiles and interprets geophysical data relating to the geology of Canada. Fundamental research is carried out in some phases of geophysical work.

Mines Branch.-Investigations undertaken in Branch laboratories cover a wide range of technical projects of importance to the advance of fundamental research; to the processing of ores, industrial minerals and fuels on a commercial scale; and to the theory and practice of physical metallurgy.

The Mineral Processing Division is concerned primarily with the development of economical methods of mineral dressing and with research toward the improvement of present processing techniques. It is equipped to conduct laboratory and pilot-plant studies involving a variety of procedures: crushing, grinding, gravity concentration, sink and float (heavy media) separation, magnetic and electrostatic concentration, amalgamation, cyanidation, flotation and roasting.

The Extraction Metallurgy Division seeks the development of better hydrometallurgical and pyrometallurgical processes for the treatment of ores and the solution to specific technical problems in this field. A substantial part of its efforts was devoted recently to ores of uranium, iron and other elements and to corrosion problems encountered in certain industrial and governmental projects. The Division accepts samples from operating mines or those under development.

The Mineral Sciences Division applies the principles of chemistry and physics to fundamental and long-term problems in the field of mineral technology and related aspects of metallurgy. It deals with ores, mineral and metal products, inorganic crystalline materials and radioactive substances, and its work ranges from relatively simple routine determinations to complex research problems requiring the most modern techniques and equipment.

The Fuels and Mining Practice Division studies the properties of fossil fuels in Canada to determine the most efficient means of utilizing fuel resources. Most of the work on coal is directed to investigations on the immediate problems of the industry and to engineering studies on the most efficient use of coal in combustion applications with
particular reference to thermally generated electric power. Such investigations include work on the evaluation of cleaning performance and the beneficiation of coal fines that are difficult to market, the uses of coal in the metallurgical industries and the study of stress phenomena in mining. Research in petroleum is directed mainly to problems in the refining of heavy crudes and high-sulphur bitumens, and to the chemical evaluation of oils and bituminous substances for classification and genetic purposes.

The Physical Metallurgy Division aids the metal industries through the development of new alloys, new manufacturing techniques and new applications and in activities aimed toward improving present practices in metal fabrication. It also conducts fundamental research on the properties and behaviour of metals. The Division serves the Department of National Defence by extensive research and investigative work, concerned broadly with the development of defence materials and prototype equipment and with the metallurgical problems of that Department. It is also operative in the nuclear metallurgy field.

Dominion Observatories.-The two main units of the Dominion Observatories are the Dominion Observatory at Ottawa, Ont., and the Dominion Astrophysical Observatory at Victoria, B.C. Permanent magnetic observatories are maintained at Ottawa and Agincourt, Ont., Meanook, Alta., Victoria, B.C., and at Alert, Mould Bay, Resolute and Baker Lake, N.W.T. Seismic stations for recording earthquakes are operated at Alert, Mould Bay and Resolute, N.W.T., Victoria and Penticton, B.C., Banff, Alta., Saskatoon, Sask., Ottawa, Ont., Seven Falls and Shawinigan, Que., and Halifax, N.S.

The Dominion Observatory at Ottawa is responsible for the time service of Canada which involves nightly astronomical observations of star positions and radio broadcast services for distributing accurate time to all parts of Canada. Other astronomical activities centred at Ottawa include upper atmospheric studies by means of meteor observations, studies of the sun and its effect on earthly conditions and mathematical studies of the atmospheres of the sun and stars. The geophysical work, also administered from Ottawa, includes the magnetic survey of Canada with emphasis on aids to air and sea navigation, as well as field and observatory work of interest to the geophysical prospector. The methods of seismology are employed to study important aspects of the earth's crust in Canada and to assist in world-wide investigations of the earth's interior. Gravity observations are carried on throughout Canada with a generally similar purpose, special attention being paid to methods of locating mineral deposits.

The Dominion Astrophysical Observatory at Victoria, B.C., is devoted to fundamental research into the physical characteristics of the sun, stars, planets and the material of interstellar space. Its 73 -inch reflecting telescope is one of the largest in the world and through its use many important contributions have been made to astronomical knowledge. A new radio telescope at Penticton, B.C., has given the Branch a valuable instrument for research in radio astronomy.

Geographical Branch.-The function of the Branch is to organize and make available all the geographical data on Canada that might be of use in promoting the country's economic, commercial and social welfare. The work is of two kinds-the compilation of geographical material of national significance, and geographical surveys in the field. Land surface conditions, types of vegetation and the structure of towns and cities are typical subjects of investigation. The Branch also administers the Canadian Permanent Committee on Geographical Names.

Mineral Resources Division.-The Division provides a mineral information service that is freely used by government departments, mining and allied industries and others interested in mining or its significance in the Canadian economy. A mineral resources index inventory is maintained of all known occurrences and of mines, both active and potential. The Division makes economic studies of different phases of the mining industry. It administers the Emergency Gold Mining Assistance Act, prepares reports on request to aid in the administration of such matters as tax exemptions on new mining properties, and prepares reports and briefs on general legislation, taxation and tariff matters connected
with the mineral industry. The Division is widely known for its publications, among the most valuable of which are the annual reviews of production, marketing and other matters concerning 64 minerals. It issues more detailed economic studies of metals and fuels of current interest and prepares annual lists of metallurgical works, metal and industrial mineral mines, milling plants, coal mines and petroleum refineries. Also published are special monographs on mining laws, taxation and subjects of particular interest to the mineral industry.

The Dominion Coal Board.*-The Board was established by the Dominion Coal Board Act (RSC 1952, c. 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 the production, importation, distribution and use of coal in Canada. The Board is also 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 civil 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 Mines and Technical Surveys. In view of the growing impact of oil and natural gas on the markets 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, agencies and other bodies. Its own responsibilities in research on the mining and utilization of coal have been carried out mainly by delegation to the Fuels and Mining Practice Division, Mines Branch, Department of Mines and Technical Surveys. On occasion, the Board has recommended or commissioned specialized types of research by experts outside the government service-for example, the studies resulting in the Christie Reports which became influences leading to the enactment of the Atlantic Provinces Power Development Act (SC 1958, c. 25) and the establishment of a power grid in the Maritimes. As a contribution to the co-ordination

[^156]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. In the field of coal statistics, the Board has a long-standing co-operative arrangement with the Dominion Bureau of Statistics under which the Bureau collects most 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 moneys 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 Canadian coals with imported coals. During the year ended Mar. 31, 1962, a total of $3,274,482$ tons of coal was shipped under subvention and $\$ 16,781,253$ was paid in assistance. 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.

Coal subventions of another type, based on the Btu content of coal used in thermalelectric power production, were authorized in January 1958 by the provisions of the Atlantic Provinces Power Development Act. The Dominion Coal Board was designated as the Government of Canada's administrative agency for subvention matters in agreements made with the provinces under this Act.

As agent to the Minister of Mines and Technical Surveys, 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, 1962, payments under this Act, totalling $\$ 192,927$, were made on 389,751 tons of coal.

## Subsection 2.-Provincial Government Aid*

Newfoundland.-The Newfoundland Government, through its Mines Branch, provides several valuable services to those interested in prospecting and mining. It publishes, for sale at nominal cost, geological reports, geophysical maps and compilations of general data pertaining to specific areas and makes available, from unclassified files, various other information to interested parties. It identifies specimens sent in from Newfoundland and Labrador and assays by chemical means those that appear to have some mineral content. If good specimens from a known area warrant further investigation, a geologist from the Department of Mines, Agriculture and Resources is available to visit the locality and give advice. Prospecting and mining permits are issued by the Department and claims are registered.

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

[^157]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. The Government is also authorized to assist the mining industry to procure power on the most economical basis and may guarantee the Nova Scotia Power Commission against any loss of revenue incurred on account of capital investments made for that purpose. 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 all 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 aero-magnetic 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.

Quebec.-The Mining Act (RSQ 1941, c. 196) authorizes the Department of Natural Resources of the Province of Quebec to build, maintain and improve roads needed for mining development. Such work is done by contract under the supervision of departmental engineers. The Act gives the Department considerable latitude in this respect. Certain major roads have been built to new mining districts and completely paid for; on the other hand, if a particular property requires a branch road from an established highway the owner may be required to contribute a portion of the cost. To prevent the development of uncontrolled settlements in the vicinity of operating mines, the Department regulates the use of land and permits the establishment of well organized communities.

The Department maintains well equipped laboratories for the benefit of prospectors, geologists, engineers and mine operators. The facilities include equipment for mineralogy, petrography, ore dressing, and analysis by wet or dry assay, spectrography or X-ray. Qualitative and mineralogical determinations are made free of charge but quantitative analyses are charged for according to a tariff schedule. The Mining Act provides free coupons to be used by prospectors in paying for such analyses. The province has authorized the establishment of research laboratories and a pilot plant to assist mining and metallurgical enterprises in the processes and techniques of extracting, transforming and utilizing ores.

Two branches of the Department undertake geological mapping and inspection-one responsible for reconnaissance (areal) mapping, and the other for detailed mapping in
mining districts and inspection of individual deposits or properties. The published reports on these investigations are available on request. When weather permits, about 40 crews, headed by geologists or mining engineers, work in different regions of the province. In five mining areas, offices managed by resident geologists are maintained where geological information obtained from mining explorations is gathered and compiled and from which free copies of such documentation may be obtained by the public. Furthermore, four other crews are engaged in hydrogeological surveying, mainly for the purpose of assisting municipalities in resolving their water supply problems.

Departmental inspectors supervise the observance of all regulations concerning the safety of workmen in operating mines. Three Mobile Mine Rescue Stations are operated and a mine rescue training program conducted.

Five-week courses for the training of prospectors are conducted by Laval and Montreal Universities, and lectures are given at different localities throughout the province. University scholarships are granted each year to deserving undergraduate and postgraduate students in mining, geology and metallurgy, thus contributing to the training of qualified engineers for the benefit of the mining industry.

Ontario.-The Ontario Department of Mines renders a multiplicity of services of direct assistance to the mining industry within the province, as briefly outlined below.

Mining Lands Branch.-This Branch 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.

Geological Branch.-A continuing program of geological mapping and investigation is carried out by the geological staff of the Department. Detailed reports and geological maps of the areas studied are made available to the public. In many of the active areas of the province resident geologists are engaged to 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. Collection and dissemination of information on groundwater resources is also a function of the Geological Branch. During the winter months, courses of instruction for prospectors are held in various centres throughout the province.

Laboratories Branch.-The Provincial Assay Office at Toronto carries out wet analyses and assays of metal and rock constituents on a custom fee basis and gives the same service free of charge to holders of valid assay coupons issued for the performance of assessment work on mining claims. The Timiskaming Testing Laboratories situated at Cobalt, in addition to performing fire assays and chemical analyses, operate a bulk sampling plant mainly to assist the producers of the area in the marketing of the cobalt-silver ores. A Cable Testing Laboratory, wherein all hoisting ropes in use at the mines are periodically tested, is operated under the supervision of the Inspection Branch.

Inspection Branch.-The main function of this Branch is 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.

Exhibitions.-The Department each year presents displays pertaining to mining within the province at such exhibitions as the Canadian National at Toronto and at other centres from time to time.

Publications Branch.-All maps and reports of the Department are distributed through the agency of the Publications Branch located at the main office of the Department.

Library.-A mining library for the use of the Department and the public is maintained within the Department. This library stocks mainly publications and maps issued by the federal and provincial governments of Canada as well as numerous periodicals and bulletins published in the United States.

Roads to Resources Program.-An interdepartmental committee was set up in 1955 to decide on matters of policy and to determine the locations and priorities of proposed roads. The Minister of Mines sits on this committee with the Provincial Treasurer and the Ministers of Lands and Forests and of Highways. The Department of Highways supervises the construction of all access roads. The sum of $\$ 1,500,000$ a year is made available for such projects, provided on a $50-50$ basis by the Ontario Government and the Federal Government.

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 the construction of access roads to mining districts.

Saskatchewan.-Assistance to the mining industry in Saskatchewan is administered by the Mines Branch, Department of Mineral Resources, with its head office at Regina. The Branch is headed by a Director and comprises three divisions.

The Geology Division is directed by the Chief Geologist and maintains resident geologists in or near the principal mining areas. The Division conducts a prospectors' school which gives basic training in geology, mineralogy, prospecting and exploration techniques and administers the Prospectors' Assistance Plan which assists by lending equipment, paying certain transportation costs, paying for a grub-stake, and by providing technical advice. During the summer months, geological crews survey and map areas and prepare reports which are made available to the public.

The Engineering Division administers the Mines Regulation Act, the purpose of which is to ensure safe working conditions in mines. Inspections of mines are carried out by Division officers, a Chief Engineer of Mines stationed at Regina, and an Inspector of Mines stationed at Uranium City. Safety education is also part of the Division's work, taking the form of first aid instruction, mine rescue training, and analysis of accidents.

The Mining Lands Division is responsible for making disposition of all Crown minerals with the exception of petroleum, natural gas and helium, and maintains records respecting areas let out by lease, permit or claim. Recording offices, having the responsibility of assisting the public in determining the lands available and accepting applications, are located at Regina, Prince Albert, La Ronge, Uranium City and Flin Flon.

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 p. 377.)

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 Corporation 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.-The Federal Government administers mining laws in the Yukon Territory, the Northwest Territories, and certain other lands vested in the Crown in the right of Canada. The Yukon Quartz and Placer Mining Acts and the Canada Mining Regulations which are applicable to the Northwest Territories and other Crown lands are administered by the Resources Division, Northern Administration Branch, Department of Northern Affairs and National Resources. Minerals underlying federal land under grants are reserved to the Crown, and mining rights may be acquired by staking mineral claims under the appropriate Acts or Regulations. Twenty-one-year leases of claims may be issued and these leases may be renewed. The disposal of mineral rights underlying Indian reservations is subject to the consent of the Indians occupying the reserve and to the treaties relating thereto.

The Northwest Territories Quartz Mining Regulations were replaced by the Canada Mining Regulations, Mar. 3, 1961. The new Regulations provide for the exploration and development of minerals in the Northwest Territories and for the exploration and development of minerals underlying territorial waters of Canada and lying outside any of the
provinces and the Yukon Territory. The revised Regulations require a prospector's licence to enter, locate and prospect on lands subject to the Regulations. However, a prospector's licence is not required to maintain claims in good standing.

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. Claim tenure is limited to ten years from the date of recording. At the end of ten years, the claim owner must apply for a lease or relinquish his rights. No lease will be granted to an individual unless the Minister of Northern Affairs and National Resources 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.c. 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 will not be required to pay royalties for a period of 36 months, starting from the day the mine comes into production.

Oil and Gas Legislation.-The Federal Government administers oil and gas laws and regulations in the Yukon and Northwest Territories, through the Resources Division, Northern Administration Branch, Department of Northern Affairs and National Resources, Ottawa. All land in both Territories is, in the first instance, owned by the Federal Government, complete with under-rights. These include oil and gas rights. When title to land is granted by letters patent, surface rights only are conveyed and under-rights continue to be vested in the Federal Government, which may dispose of them under appropriate legislation. Nine-year to 12-year permits to explore for oil and gas and 21-year oil and gas leases are available.

The Government has set up the Canada Oil and Gas Land Regulations and the Canada Oil and Gas Drilling and Production Regulations, both dated June 6, 1961. They also include provisions for the exploration, development and production of oil and gas from land under all sea-coast waters of Canada which are not within any province.

An oil and gas exploration 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. Permits are issued in periods of nine, 10 or 12 years, depending on the location, by which times the permittee is expected to apply for an oil and gas lease or relinquish his rights. No oil and gas lease will be issued to an individual unless the Minister of Northern Affairs and National Resources 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.*-All Crown mineral lands lying within the boundaries of the several provinces (with the exception of those within Indian reserves and National Parks which are under the jurisdiction of the Federal Government) are administered by the respective provincial governments.

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

[^158]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 occur 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 specified size may then be staked. In Saskatchewan, a licence is required only for staking and 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; 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-days of work must be performed and the excess may be carried forward for renewal of licence; before mining can be commenced, a mining concession must be purchased for which it is necessary to produce an engineer's report indicating the presence of an orebody. The taxation applied most frequently is a percentage of net profits of producing mines or royalties. In Newfoundland, the provincial mining tax was modified after Confederation on Mar. 31, 1949 to conform with the provincial obligations under the Dominion-Provincial Tax Agreement. No other form of taxation or royalty exists. 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, ordinary mining claims give rights to all mineral substances and to their development, and stakings for combustible natural gas, salt, coal, mineral oil or naphtha, or iron sands may cover 1,280 acres per claim. 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. 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. On Quebec private lands the quarry belongs to the owner; on Crown lands mineral rights belong to the Crown and may be obtained in accordance with the provisions of the law although the rights to exploit peat or marl must be obtained by special licence. In Saskatchewan, sand and gravel 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.-Statistics of Mineral Production

## Subsection 1.-Value and Volume of Mineral Production

Statistics of the annual value of mineral production are available from 1886, total production being shown for five-year intervals from that date to 1945 and annually for subsequent years in Table 3. 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 they do serve to show broad trends in the mineral industry.

The increase in the value of mineral production since the end of World War II has been phenomenal, having more than tripled since 1949. Production per head of the population advanced from $\$ 67.01$ in that year to $\$ 153.10$ in 1962 . Although part of this increase was accounted for by advanced prices, the index of the volume of output from Canadian mines recorded an advance from $90.0(1949=100)$ to 286.5 in the same comparison.

[^159]
## 3.-Value of Mineral Production, 1886-1962

| Year | Total Value | Value per Capita | Year | Total Value | Value per Capita | Year | Total Value | Value per Capita |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ |  | \$ | \$ |  | \$ | \$ |
| 1886. | 10,221, 255 | 2.23 | 19351..... | 312,344,457 | 28.80 | 1953. | 1,336,303,503 | 90.40 |
| 1890. | 16,763,353 | 3.51 | 1940....... | 529,825,035 | 46.55 | 1954. | 1,488,382,091 | 96.59 |
| 1895. | 20,505,917 | 4.08 | 1945. | 498,755,181 | 41.32 | 1955. | 1,795, 310,796 | 114.37 |
| 1900. | 64,420, 877 | 12.15 | 1946....... | 502,816,251 | 40.91 | 1956. | 2,084,905,554 | 129.35 |
| 1905. | 69,078,999 | 11.51 | 1947....... | 644,869,975 | 51.38 | 1957. | 2,190,322,392 | 132.03 |
| 1910. | 106, 823,623 | 15.29 | 1948. | 820,248,865 | 63.97 | 1958. | 2,100,739,038 | 122.99 |
| 1915. | 137, 109,171 | 17.18 | 19492. | 901, 110,026 | 67.01 | 1959. | 2,409,020,511 | 137.79 |
| 1920... | 227, 859,665 | 26.63 | 1950. | 1,045,450,073 | 76.24 | 1960. | 2,492,509.981 | 139.48 |
| 1925. | 226,583,333 | 24.38 | 1951....... | 1,245,483,595 | 88.33 | 1961. | 2,582,300,387 | 141.59 |
| 1930.. | 279,873,578 | 27.42 | 1952 | 1,285,342,353 | 89.07 | 1962 | 2,842,984,195 | 153.10 |

${ }^{1}$ Beginning with 1935, exchange equalization on gold production is included.
${ }^{2}$ Value of Newfoundland production included from 1949.
4.-Value of Mineral Production of Canada, by Classes, 1953-62

| Year | Metallics | Nonmetallics | Fuels | Structural Materials | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | \$ | \$ |
| 1953. | 709, 920,510 | 124,999,607 | 314,181,168 | 187,202,218 | 1,336, 303,503 |
| 1954 | 802,401,423 | 128,038,507 | 352,959,465 | 204,982,696 | 1,488,382,091 |
| 1955. | 1,007, 839,501 | 144,920,841 | 414,318, 015 | 228, 232,439 | 1,795,310,796 |
| 1956. | 1,146,349,595 | 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 |
| 1958. | 1,130,160,395 | 150,354,802 | 510,768,681 | 309,455, 160 | 2,100,739,038 |
| 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 | 2,492,509,981 |
| 1961. | 1,387,159,036 | 210,467,786 | 653,327,802 | 331,345,763 | 2,582,300,387 |
| 1962p. | 1,480,282, 362 | 215,584, 368 | 796,851,086 | 350,266,379 | 2,842,984,195 |

Current Production.-A detailed review of developments in mining during 1962 is given at pp. 521-545. As stated there, the value of mineral commodities produced in that year reached a new high, amounting to nearly $\$ 2,843,000,000$, a total more than 10 p.c. above the 1961 value. Major gains continued to be made by petroleum, nickel, natural gas and natural gas by-products, increases amounting to $\$ 96,033,000, \$ 33,963,000$, $\$ 29,491,000$ and $\$ 19,525,000$, respectively. The value of iron ore produced, which increased by $\$ 12,868,000$ in 1961 , rose by $\$ 76,658,000$ in 1962 . Copper output, which had dropped by $\$ 9,689,000$ in 1961 , showed an increase of $\$ 27,976,000$ in 1962 . The value of cement produced in 1962 was $\$ 9,940,000$ higher than in the previous year, that of zinc $\$ 5,879,000$ higher and that of asbestos $\$ 3,105,000$ higher. Also, the first of a continuing output of potash added $\$ 2,121,000$ to the total value of mineral production. The greatest decline was recorded by uranium which dropped $\$ 44,000,000$ below its 1961 level.

The value of all metals produced had shown a slight drop in 1961 mainly as a result of decreases in copper, zinc and uranium but in 1962 reached an all-time high, increasing 7 p.c. over the previous year. The total values of other sectors were also at record levels, non-metallics increasing 2 p.c., fuels 22 p.c. and structural materials 6 p.c.

## 5.-Quantity and Value of Mineral Production, 1960-62



Analysis of Current Value and Volume.-To present a clearer and simpler interpretation of the trends in mineral production in Canada over the ten years 1953-62, the percentage of the total value contributed by each principal mineral in each year is given in Table 6.

## 6.-Percentage of the Total Value Contributed by Principal Minerals, 1953-62

| Mineral | 1953 | 1954 | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 | 1962p |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | p.c. | p.e. | p.c. | p.c. | p.c. | p.c. | p.c. | p.c. | p.c. | p.c. |
| Metallics ${ }^{1}$ | 53.1 | 53.7 | 56.1 | 54.9 | 52.9 | 53.8 | 56.9 | 56.4 | 53.7 | 52.1 |
| Copper | 11.3 | 11.8 | 13.4 | 14.1 | 9.4 | 8.3 | 9.7 | 10.6 | 9.9 | 10.0 |
| Gold. . | 10.4 | 10.0 | 8.7 | 7.3 | 6.8 | 7.4 | 6.2 | 6.3 | 6.1 | 5.5 |
| Iron ore | 6.2 | 6.2 | 6.2 | 7.6 | 7.6 | 6.0 | 8.0 | 7.0 | 7.3 | 9.3 |
| Lead | 3.7 | 3.9 | 3.2 | 2.8 | 2.3 | 2.0 | 1.6 | 1.8 | 1.8 | 1.3 |
| Nickel. | 12.0 | 12.1 | 12.0 | 10.8 | 11.8 | 9.2 | 10.7 | 11.9 | 13.6 | 13.6 |
| Platinum metals | 1.5 | 1.4 | 1.3 | 1.1 | 1.2 | 0.7 | 0.5 | 1.2 | 0.9 | 1.0 |
| Silver.... | 1.8 | 1.7 | 1.4 | 1.2 | 1.1 | 1.3 | 1.2 | 1.2 | 1.1 | 1.2 |
| Uranium | - | 1.8 | 1.4 | 2.2 | 6.2 | 13.3 | 13.7 | 10.8 | 7.6 | 5.3 |
| Zinc. | 7.2 | 6.1 | 6.6 | 6.1 | 4.6 | 4.4 | 4.0 | 4.4 | 4.1 | 3.9 |
| Non-metallics ${ }^{1}$ | 9.4 | 8.8 | 8.1 | 8.3 | 7.7 | 7.2 | 7.4 | 7.9 | 8.2 | 7.6 |
| Asbestos. | 6.4 | 5.8 | 5.4 | 5.3 | 4.8 | 4.4 | 4.5 | 4.9 | 5.0 | 4.6 |
| Gypsum | 0.6 | 0.5 | 0.4 | 0.4 | 0.4 | 0.3 | 0.4 | 0.4 | 0.3 | 0.3 |
| Quartz. | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Salt... | 0.5 | 0.6 | 0.6 | 0.7 | 0.6 | 0.7 | 0.7 | 0.8 | 0.8 | 0.8 |
| Sulphur in smelter gas | 0.2 | 0.3 | 0.3 | 0.4 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 |
| Sulphur, elemental. | $\square$ | - | $\square$ | - | - | - | 0.1 | 0.2 | 0.3 | 0.3 |
| Titanium dioxide, etc. | 0.3 | 0.3 | $0 . ?$ | 0.4 | 0.4 | 0.3 | 0.4 | 0.5 | 0.6 | 0.3 |
| Fuels. | 23.5 | 23.7 | 23.1 | 24.9 | 25.8 | 24.3 | 22.2 | 22.71 | $25.3{ }^{1}$ | 28.01 |
| Coal. | 7.7 | 6.5 | 5.2 | 4.6 | 4.1 | 3.8 | 3.1 | 3.0 | 2.7 | 2.4 |
| Natural gas | 0.8 | 0.8 | 0.9 | 0.9 | 1.0 | 1.5 | 1.6 | 2.1 | 2.6 | 3.4 |
| Petroleum. | 15.0 | 16.4 | 17.0 | 19.4 | 20.7 | 19.0 | 17.5 | 17.0 | 18.9 | 20.5 |
| Structural Materials | 14.0 | 13.8 | 12.7 | 11.9 | 13.6 | 14.7 | 13.5 | 12.9 | 12.8 | 12.3 |
| Clay products. | 2.2 | 2.2 | 2.0 | 1.8 | 1.6 | 2.0 | 1.8 | 1.5 | 1.4 | 1.3 |
| Cement.... | 4.4 | 4.0 | 3.6 | 3.8 | 4.3 | 4.6 | 4.0 | 3.7 | 4.0 | 4.0 |
| Lime. . | 1.1 | 1.0 | 0.9 | 0.7 | 0.8 | 0.9 | 0.9 | 0.8 | 0.7 | 0.6 |
| Sand and gravel | 4.0 | 4.0 | 3.8 | 3.5 | 4.2 | 4.6 | 4.3 | 4.5 | 4.1 | 4.2 |
| Stone. | 2.3 | 2.6 | 2.4 | 2.1 | 2.7 | 2.6 | 2.5 | 2.4 | 2.6 | 2.2 |
| Grand Totals. | 100.0 | 100.0 | 100.0 | 103.0 | 100.0 | 100.0 | 109.0 | 100.0 | 100.0 | 100.0 |

[^160]With 1949 production levels equalling 100,* the total quantity of mineral output had reached an all-time high of 286.5 in 1962, an increase of 7.3 p.c. over the previous year. The most significant gains were recorded in the iron ore, asbestos, natural gas and crude petroleum industries, with lesser gains in copper and nickel. Declines occurred in gold, coal and uranium (not shown).

[^161]7.-Indexes of the Volume of Production of the Principal Mining Industries, 1953-62
( $1949=100$ )

| Mineral | 1953 | 1954 | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Metallics | 115.7 | 129.0 | 142.7 | 151.0 | 170.0 | 180.3 | 201.3 | 197.9 | 191.7 | 196.4 |
| Copper ${ }^{1}$ | 96.1 | 114.8 | 123.7 | 135.2 | 137.1 | 131.8 | 151.6 | 168.7 | 170.4 | 177.2 |
| Gold ${ }^{1}$ | 98.5 | 105.8 | 110.2 | 107.9 | 106.7 | 109.7 | 108.4 | 111.2 | 107.1 | 100.0 |
| Nickel ${ }^{1}$ | 111.7 | 125.3 | 135.9 | 139.0 | 146.3 | 110.2 | 144.9 | 166.9 | 183.8 | 184.2 |
| Iron or | 170.6 | 185.4 | 316.5 | 418.6 | 462.6 | 321.5 | 448.9 | 406.3 | 504.7 | 604.2 |
| Non-metallics | 152.9 | 161.4 | 180.2 | 187.6 | 179.0 | 171.1 | 191.4 | 192.6 | 211.7 | 222.5 |
| Asbestos | 162.3 | 167.8 | 191.9 | 188.4 | 184.3 | 178.3 | 193.5 | 201.4 | 223.4 | 234.1 |
| Fuels. |  | 215.6 | 273.2 | 344.7 | 358.2 | 329.5 | 363.1 | 380.2 |  | 480.8 |
| Coal. | 81.5 | 75.2 | 74.1 | 76.6 | 65.4 | 56.7 | 51.9 | 53.3 | 49.9 | 48.8 |
| Natural gas | 147.8 | 169.6 | 204.5 | 235.0 | 295.1 | 401.6 | 503.9 | 589.2 | 712.0 | 1,001.2 |
| Petroleum | 385.5 | 457.8 | 616.8 | 812.7 | 859.5 | 782.6 | 873.7 | 909.9 | 1,043.7 | 1,154.7 |
| Total Mining | 142.1 | 158.7 | 185.2 | 212.3 | 227.8 | 227.0 | 251.1 | 253.3 | 266.9 | 286.5 |

[^162]
## Subsection 2.-Provincial Distribution of Mineral Production

Changes in provincial mineral production in 1962 compared with 1961 varied across Canada. The major advance was shown by Alberta where large increases in the output of natural gas, natural gas by-products and petroleum as well as a substantial increase in the output of sulphur were mainly responsible for an increase of $\$ 105,300,000$ in total value of production. Quebec's total advanced by $\$ 63,600,000$ as a result of much greater shipments of iron ore and higher production of other base metals. Larger shipments of nickel from the new Thompson development were mainly responsible for the increase of $\$ 58,500,000$ experienced by Manitoba. In British Columbia, substantial increases in the value of output of copper, iron ore, natural gas and crude petroleum more than counterbalanced decreases in other minerals, resulting in an advance of some $\$ 41,000,000$. Saskatchewan's first production of potash and an increased output of crude petroleum advanced the value of its total output to the extent of about $\$ 20,600,000$. Only Ontario among the provinces showed a reduction in value of output, the decrease amounting to about $\$ 41,500,000$. This was more than accounted for by lower shipments of nickel as a result of a production cutback in the latter part of the year and by the expected drop in the output of uranium. Increases in the Atlantic Provinces and the Yukon Territory were moderate but the Northwest Territories recorded a slight decrease as a result of the closing of the Rankin nickel mine.

In 1962, Ontario produced 31.7 p.c. of the total value of the mineral output of the country compared with 36.5 p.c. in 1961 and 39.4 p.c. in 1960 . Total value of production in the province dropped by nearly 9 p.c. in the two latest years. Alberta, which moved to second place in 1961 , produced 20.4 p.c. of the nation's output in 1962 compared with 18.3 p.c. and 15.9 p.c., respectively, in the two preceding years. Quebec, in third place, recorded an advance of over 11 p.c. in value of output in 1962 and produced 18.3 p.c. of the nation's total compared with 17.6 p.c. in 1961 and 17.9 p.c. in 1960. Saskatchewan, British Columbia and Manitoba followed Quebec in value of mineral output in 1962, producing, respectively, 8.3 p.c., 8.1 p.c. and 5.6 p.c. of the Canadian total; Manitoba's share increased from 3.9 p.c. in 1961 and 2.4 p.c. in 1960 . In 1962, Newfoundland produced 3.5 p.c. of the Canadian total and the Maritime Provinces together produced 3.1 p.c., not greatly changed from previous years.
8.-Value of Mineral Production, by Province, 1953-62

Nors.-Figures from 1899 are given in the corresponding table of previous Year Books beginning with the 1933 edition.

| Year | Newfoundland | Prince Edward Island | Nova Scotia | New Brunswick | Quebec |  | Ontario | Manitoba |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | S | S | \$ |  |  |  | \$ | \$ |
| 1953 | 33,780,622 | 6 | 67,364,408 11, | 3,618 | 251,88 |  | 465, 877 | 3 25, 264,112 |
| 1954 | 42,898,033 |  | 73,450, 898 12, | 8, 322 | 278,8181 |  | 496,747 | 1 35,106,922 |
| 1955. | 68,462,956 |  | 67,133,539 15, | 9,744 | 357,01 |  | 582, 954 | 2 62,018,231 |
| 1956 | 84,349,006 |  | 66,092,274 18, | 8,302 | 422,46 |  | 650,823 | 67,909,407 |
| 1957 | 82,682,263 |  | 68,058,743 23, | 0,689 | 406,05 |  | 748,824 | $2 \mathrm{63,464,285}$ |
| 1958 | 64,994,754 | 6 | 62,706,891 16, | 5,971 | 365,70 |  | 789,601 | 8 57,217,569 |
| 1959 | 72,156,996 | 4,559,171 62, | 62,879, 647 18, | 33,290 | 440, 89 |  | 970,762 | 1 55,512,410 |
| 1960 | 88, 637, 123 | 1,172,587 6 | 65,453,531 17, | 2,739 | 446, 20 |  | 983,104 | 2 58,702,697 |
| 1961. | 91,618,709 | 608,644 | 61,693,156 18, | 4,385 | 455, 52 |  | 943,669 | 6 101,489,787 |
| 1962 p...... | 98,261,813 | 796,043 | 62,859,039 24, | 4,991 | 519,14 |  | 902,133 | 159,038,359 |
|  | Saskatchewan | Alberta | British Columbia | Northwest Territories |  | Yukon Territory |  | Canada |
|  | 5 | \$ | \$ | \$ |  | \$ |  | $s$ |
| 1953. | 48,081,970 | 248, 863,295 | $\begin{aligned} & 158,487,812 \\ & 158,630,867 \end{aligned}$ | 10,300,230 |  | 14,738,562 |  | 1,336,303,503 |
| 1954. | 68,216,009 | 279,042,735 |  | 26,414,000 |  | 16,588,664 |  | $1,488,382,091$ |
| 1955. | $85,150,128$ | 325,974,326 | 189,524,574 | 25, 597, 821 |  | 14,724,750 |  | $1,795,310,796$$2,084,905,554$ |
| 1956. | 122,744,698 | 411, 171,898 | 203,277, 828 | 22,157,935 |  | 15, 656,434 |  |  |
| 1957 | 173,461,037 | 410,211,763 | 178,931,120 | 21, | 00,615 | 14,111,798 |  | $\begin{aligned} & 2,084,905,554 \\ & 2,190,322,392 \end{aligned}$ |
| 1958 | 209, 940, 966 | 345,939,248 | 151,149,136 | $\begin{aligned} & 24,895,390 \\ & 25,874,496 \end{aligned}$ |  | $\begin{aligned} & 12,310,756 \\ & 12,592,378 \end{aligned}$ |  | $2,100,739,038$2,409,020,5112,492,509,981 |
| 1959 | 210,042,051 | 376,215,593 | 159,395,092 |  |  |  |  |  |
| 1960 | 212,093,225 | 395, 344, 010 | 186, 261,646 | $27,135,087$$18,145,162$ |  | $\begin{aligned} & 13,330,198 \\ & 12,750,304 \end{aligned}$ |  |  |
| 1961. | 215,977,233 | 473,480,540 | 188,542,078 |  |  | $\begin{aligned} & 2,492,509,981 \\ & 2,582,300,387 \end{aligned}$ |  |
| 1962 P | 236,577,640 | 578,821,732 | 229,427,347 | 17, | 01,145 |  |  |  | 3,316,782 | 2,842,984,195 |

9．－Detailed Mineral Production，by Province， 1961 with Preliminary Totals for 1962

| Mineral | New－ foundland | Prince <br> Edward Island | Nova Scotia | $\underset{\text { Brunswick }}{\text { New }}$ | Quebec | Ontario | Manitoba | Saskat－ chewan | Alberta | British Columbia | YukonandNorthwestTerritories | Canada |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  | 1961 | 1962p |
| Metallics．．．．．．．．．\＄ | 83，883，928 | － |  |  | 214，235， 929 | 780，784，843 | 73，217，673 | 75，143，941 | 6，080 | 129，852，883 | 30，033，759 | 1，387，159，036 | 1，480，282，362 |
| Antimony．．．．．．．lb． |  | － | － | － |  | － | － | － | － | 1，321，297 | － | 1，331，297 | 1，819，876 |
| Bismuth \＄ |  | － |  | － | － | － | － | － | － | －469，948 | － | 1，469，948 | 1，642，416 |
| Bismuth．．．．．．．．lb． |  | － |  |  | 174，832 | 19， 923 | － | － | － | 283，363 | － | 478，118 | 375， 345 |
| Cadmium．．．．．lb． |  | － |  |  | 297， 670 | 22，388 |  |  | － | 637，567 | － | 957，625 | 739，705 |
| Cadmium．．．．．．． |  | － |  |  |  | － | 182,622 292,195 | 125,135 200,216 | － | 907,432 $1,451,891$ | 142,6851 228,2961 | 1，357， 874 | 2，153， 448 |
| Calcium．．．．．．．．lb． |  | － | － | － | － | 99，355 | － | － | 二 | 1，401，891 | － | $\begin{array}{r}\text { 2，} \\ \hline\end{array}$ | 3， 104,850 |
| Cobalt ．．．．．．．．．lb |  | － | 二 | 二 |  | 100， 881 | － 77 | － | － | － | － | 100，881 | 102，438 |
| Cobatt．．．．．．．．．．．．． |  |  |  | 二 |  | 2， 8 ， 884,420 | 298，477 | 二 | 二 | － | － | 3，182， 897 | 3，441，746 |
| Columbium lb． |  | － | － | 二 | 62，229 | 4，309，912 | 441，031 | － | － | － | － | 4，751，543 62 | $6,382,502$ 967,000 |
| $\left(\mathrm{Cb}_{2} \mathrm{O}_{5}\right)$ ．${ }^{8}$ |  | － |  | － | 65， 619 | － | － | － | － | －－ | － | 65，619 | 953，756 |
| Copper．．．．．．．．．．lb | 31，503， 313 | － | － | － | 298，013，711 | 423，293，547 | 24，908，723 | 66，957， 929 | － | 31，690，608 | 1，807，2532 | 878，175， 084 | 917，180，648 |
| Gold．．．．．．．．．．．oz．t． | 9，195， 817 | － |  | － | 86，990， 202 | 122， 421,860 | 7，271，252 | 19，545， 019 |  | 9，205， 938 | 527，5382 | 255，157，626 | 283，133，249 |
| Gold．．．．．．．．oz．t． | 14,429 511,652 | 二 | － |  | $1,054,029$ $37,375,868$ | 2，637，720 | 57，747 | －70，784 | 171 | 164，467 | 474，3523 | 4，473， 699 | 4，155，210 |
| Indium．．．．．．．．．oz．t． |  | 二 | 二 |  | 37，375， 868 | 93，533， 551 | 2，047，709 | 2，510，000 | 6，064 | 5，832，000 | 16，820，522 | 158，637， 366 | 155，446， 407 |
| Iron ore．．．．．．．ton |  | － | － | － | － | － | － | － | － |  | － |  |  |
| Iron ore．．．．．．．．ton | 7，611，340 | － | － | － | 5，639，931 | 5，772， 664 | － | － | － | 1，335， 068 | － | 20，359， 003 | 27，898，713 |
| Iron，remelt．．．．ton | 59，889，125 | 二 | － | － | 53，627，608 | 62，350， 773 | － | － | － | 12，082，541 | － | 187，950，047 | 264，608，450 |
| Iron，remelt．．．．ton | － | － | － | － | 14，720，064 | － | － | － | － |  |  | 14，720，064 | 7，035，921 |
| Lead．．．．．．．．．．．lb． | 43，936，710 | － | － | － | 6，784，464 | 1，670，535 | 6，107，331 | － | － | 385，600，537 | 16，769，815 ${ }^{1}$ | 460，869，392 | 381，217，587 |
| Magnesium ．．．．${ }^{\text {\％}}$ | 4，485，938 | 二 | － | － | 692，694 | 170，562 | 623，558 | － | － | 39，369， 815 | 1，712，198 | 47，054，765 | 37，816，785 |
| Magnesium．．．．．．ib． | － | － | － | － | － | 15， 270,618 | － | － | － |  | － | 15，270，618 | 16，469，917 |
| Molybdenum ．．．lb | － |  | － | － | 771，358 | 4，307，570 |  | － | － | － | － | 4，307，570 | 4，611，576 |
| \％ |  | － | － | － | 1，092，201 | － | － | － | － |  | － | 1，092， 201 | 1，228， 672 |
| Nickel．．．．．．．．．．lb． | － | － | － | － | 1， | 392，435， 773 | 65，957，008 | － | － | 4，180， 677 | 3，409，410 | 465， 982,868 | 464，136，039 |
| Platinum \＄ |  |  | － | － | － | 295，423， 149 | 50，039，745 | － | － | 3，194，037 | 2，604，7894 | 351，261，720 | 385，224， 707 |
| $\begin{array}{rr} \text { Platinum } & \text { oz.t. } \\ \text { metals. } \end{array}$ | － | 二 | － | － | － | ，418，278 | － | － | － | － | － | 418，278 | 453，526 |
| Selenium．．．．．．．lb． | － | 二 | － | 二 | 214，998 | 24，534， 349 | 9，544 |  | － | － | － | 24，534， 349 | 28，085，528 |
| \＄ |  | － |  |  | 1，397，487 | 1，071，200 | 62，036 | 268， 255 |  |  |  | 2，798，978 | － 5000015 |
| Silver．．．．．．．．．oz．t． | 1，145，105 | － | － | － | 4，315， $8+4$ | 8，870，402 | 767，543 | 876，450 | 17 | 8，391， 640 | 7，014，976 ${ }^{5}$ | 31，381，977 | 29，955，465 |
| Tellurivo \＄ | 1，079，376 | － | － | － | 4，068，115 | 8，361，240 | 723，486 | 826，142 | 16 | 7，909，960 | 6，612，316 | 29，580，651 | 34，897，604 |
| Tellurium．．．．．．．lb． | 二 | － | － | 二 | 63， 904 | 8，050 | 1，059 | 4，596 | － | ， | － | 77，609 | 61，211 |
| Thorium．．．．．．．．lb． | － | 二 | － | － | 309，934 | 39，043 | 5，136 | 22，291 | － | － | － | 376，404 | 367， 466 |
| \＄ | － | － | － | － | － | ．．． | － | － | － | － |  | $\cdots$ | ． |
| Tin．．．．．．．．．．．．．．lb | － | － | － | － | － | $\cdots$ | － | － | － | 1，119，350 | － | 1，1i9，350 | 6888，414 |
| Uranium（ $\mathrm{U}_{3} \mathrm{O}_{8}$ ） l ¢ b ． | － | － | － | － | － |  | － | $4,3 \overline{10}, 871$ | － | 727，578 | － | 727，578 | 447，469 |
| 8 | 1 － |  |  |  |  | $\mid 151,060,610$ | － | 44，631，014 | － | 二 |  | 19，281，465 | $16,862,823$ $51,425,006$ |





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9．－Detailed Mineral Production，by Province， 1961 with Preliminary Totals for 1962－concluded

| Mineral | New－ foundland | Prince <br> Edward <br> Island | Nova Scotia | New <br> Brunswick | Quebec | Ontario | Manitoba | Saskat－ chewan | Alberta | British Columbia | Yukon and Northwest Territories | Canada |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  | 1961 | 1962 ${ }^{\text {D }}$ |
| Non－metallics－－conc． |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sulphur，in ton | 二 | 二 | 二 | － | 127，178 | 823，682 |  | 二 | 二 | 757， 250 | 二 | 277,056 $2,708,110$ | 286,566 $2,777,262$ |
| Sulphur，ton |  | － |  |  |  |  |  |  |  |  |  | 2，394，762 | －668，126 |
| elemental． |  | － | 二 |  |  | 31，376 | － | 31，244 | 6，133，261 | 1，092，000 | － | 7，287，881 | 8，903，209 |
| dioxide，etc． | － | － | － | － | 16，7233，743 | － | － | － | － | － | － | 16，$\ddot{7}_{2} 3,743$ | 7，7̈79，329 |
| Fuels．．．．．．．．．．．．\＄ | － | － | 41，716，107 | 7，686，695 | － | 9，160，788 | 10，156，000 | 125，015，900 | 437，946，055 | 20，784，550 | 861，707 | 653，327，802 | 798，851，086 |
| Coal．．．．．．．．．．．．ton | － | － | 4，300，758 | 887，903 | － | － | － | 2，208，851 | 2，027，826 | 964，663 | 7，703 ${ }^{1}$ | 10，397，704 | 10，257，892 |
| Natural ${ }^{\text {\％}}$ | － | － | 41，716， 107 | 7，526，647 | － |  | － | 3，769，357 | 10，472，978 | 6，453，373 | $114,221{ }^{1}$ | 70，052， 683 | 68，527，159 |
| Natural gas．．．．Mcf． | 二 | － |  | 96， 318 | － | 14，544， 165 | － | 37，192，595 | $500,843,900$ | 103， 1818,988 | 41,6784 | 655，737，644 | 955，526，300 |
|  |  |  |  | 143，215 | － | 5，614，048 | － | 4，050， 274 | 48，882， 365 | 9，714，690 | 17，3264 | 68，421，918 | 97，912，950 |
| Natural gas，bbl． by－products． | 二 | 二 | 二 | － | － | － | － | 1，476，478 | 23，059， 867 | 2，756，614 | 二 | 27，292，959 | 46，818，065 |
| Petroleum，bbl． |  |  |  | 12，024 | － | 1，149， 087 | 4，480，348 | 55， 860,104 | 157， 811,712 | 1，017， 826 | 516， 9794 | 220，848， 080 | 244，007，849 |
| crude．\＄ |  | － | － | 16，833 | － | 3，546，740 | 10，156，000 | 115，719，791 | $355,530,845$ | 1，859，873 | 730，1604 | 487，560，242 | 583，592，912 |
| Structural Materials．．．．．\＄ | 5，277，226 | 606，644 | 9，753，455 | 9，738，355 | 99，013，894 | 130，093，420 | 16，048，660 | 10，336，272 | 28，040，070 | 22，437，767 | － | 331，345，763 | 350，266，379 |
| Clay products．．．${ }_{\text {Cement．．．．．．．ton }}$ | 75，89 | － | 1，582，153 | 744，293 | 8，195，790 | 19，036，556 | 623，966 | 1，115， 474 | 3，517，473 | 2，091，353 | － | 36，982，948 | 37，738，098 |
|  | 86，549 | － |  | 170，953 | 2，029，159 | 2，226，923 | 395， 134 | 201，950 | 677， 914 | 417，366 | － | 6，205，948 | 6，786，229 |
| Lime．．．．．．．．．．ton ${ }_{\text {¢ }}^{\text {¢ }}$ | 1，789，980 | － | － | 2，754，052 | 31，412，617 | 35，671，569 | 7，768，334 | 4，985， 021 | 12，420，025 | 7，122，046 | － | 103，923，644 | 113，864， 118 |
|  |  |  |  | 13，820 | －407，427 | 865， 130 | 48，791 | 4， | 47，506 | 32，616 |  | 1，415，290 | 1，380，624 |
| Lim．．．．．．．．$\$$ |  |  |  | 308，027 | 5，086，976 | 11，548， 132 | 833，238 |  | 838，365 | 602，633 | － | 19，217，371 | 17，628，000 |
| Sand and gravel．ton | 3，383，724 | 544，497 | 5，574，377 | 5，014，234 | 44，126， 199 | 70，208，199 | 7，402，385 | 7，626，197 | 12，591，944 | 14，279， 191 |  | 170，750，947 | 167，328，097 |
|  | 2，777， 393 | 381，644 | 6，513， 612 | 2，776，139 | 21，793，232 | 40，344，071 | 5，817，415 | 4，235，777 | 10，927，057 | 9，087，792 |  | 104，654， 132 | 118，228， 33 |
| Stone．．．．．．．．．．．．．ton | 322，820 | 225，000 | 1，021，880 | 2，957，886 | 22，648，010 | 18，361， 843 | 594，921 | ， | －96，753 | 2，709，691 | － | 48，938， 804 | 45，270，476 |
|  | 633，963 | 225，000 | 1，657，690 | 3，155， 844 | 32，525，279 | 23，493，092 | 1，005，707 | － | 337，150 | 3，533，943 | － | 66，567， 668 | 62，808，131 |
| $\begin{gathered} \text { Grand Totals, } \\ \text { 1961.......... } \end{gathered}$ | 91，618，709 | 606，644 | 61，693，156 | 18，804，385 | 455，522，933 | 943，669，456 | 101，489，787 | 215，977，233 | 473，480，540 | 188，542，078 | 30，895，466 | 2，582，300，387 |  |
| $\underset{\text { Grand Totals，}}{\text { 1962p．．．．．．．}}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 98，261，813 | 796，043 | 62，859，039 | 24，901，991 | 519，145，596 | 902，133，708 | 159，038，359 | 236，577，640 | 578，821，732 | 229，427，347 | 31，017， 927 | ．．． | 2，842，984，195 |

${ }^{1}$ All produced in Yukon Territory．${ }^{2}$ Yukon production $880,773 \mathrm{lb}$ ．valued at $\$ 257,098$ ；remainder N．W．T．${ }^{3}$ Yukon production 66,878 oz．t．valued at $\$ 2,371.494$ ；remainder N．W．T．$A$ All produced in N．W．T．${ }^{\text {S }}$ Yukon production $6,937,086$ oz．t．valued at $\$ 6,538,897$ ：remainder N．W．T．

## Subsection 3.-Production of Metallic Minerals

The metallic minerals of greatest dollar value in Canada during 1962 were, in order: nickel, copper, iron ore, gold, uranium, zinc, lead and silver. Except for uranium, which dropped from third place to fifth, this order remained unchanged from 1961. Developments taking place in metal mining during 1962 are described in detail in Section 1, pp. 524-536. The following statistical information gives a comparison of quantity and value figures for each of the principal metals over the ten-year period 1953-62.

Nickel.-The value of nickel output reached an all-time high in 1962, although the quantity produced was slightly less than in the previous year. A steadily upward trend in production experienced after the end of the War was interrupted in 1958 when a rise in world stocks brought about a decrease in nickel prices. However, 1959 output was again close to the level of 1957 and increases were recorded in the next two years. As stated on p. 524, satiation of requirements resulted in a cutback in production in the latter part of 1962 which, with a lower output from the Northwest Territories, counterbalanced a considerable increase in Manitoba's output and a new production from Quebec.

Canada uses only about 5,000 tons of refined nickel (anodes, cathodes and ingots) annually. Exports amounted to 121,712 tons in 1962, mostly to the United States and Britain, and exports of nickel in ores, concentrates and matte, mostly to Britain, amounted to 77,409 tons.
10.-Nickel Production, by Province, and Total Value 1953-62

| Year | Que. | Ont. | Man. | B.C. | N.W.T. | Canada |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | Quantity | Value |
|  | tons | tons | tons | tons | tons | tons | \$ |
| 1953.. | - | 143, 693 | - | - | - | 143,693 | 160,430,098 |
| 1954... | - | 158,010 | 3,269 | - | - | 161,279 | 180, 173, 392 |
| 1955. | - | 161,161 | 13,767 | - | - | 174,928 | 215, 866,007 |
| 1957. | 二 | 167,576 177,396 | 10,939 10,034 | 二 | 528 | 178,515 187,958 | 222, 204,860 |
| 1958. | - | 127,144 | 9,778 | 704 | 1,933 | 139,559 | 194,142, 019 |
| 1959.. | - | 173,964 | 10,139 | 531 | 1,921 | 186,555 | 257,008, 801 |
| 1960. | - | 201,650 | 9,059 | 1,890 | 1,907 | 214,506 | 295, 640,279 |
| 1961. | - | 196,218 | 32,978 | 2,090 | 1,705 | 232,991 | 351, 261,720 |
| 1962p. | 1,564 | 165,441 | 62,099 | 1,892 | 1,072 | 232,068 | 385, 224,707 |

Copper.-Production of copper in Canada reached its peak in 1962 in both quantity and value. Increases in British Columbia, Quebec and Newfoundland, together with new contributions from Nova Scotia and New Brunswick, offset decreased output in the otber provinces and the territories.

## 11.-Copper Production, by Province, and Total Value 1953-62

Nort.-Figures from 1886 are given in the corresponding table of previous Year Books beginning with the 1916-17 edition.

| Year | Newfoundland | Nova Scotia | New Brunswick | Quebec | Ontario | Manitoba |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | tons | tons | tons | tons | tons | tons |
| 1953. | 2,814 | 788 | - | 54,920 | 130,582 | 9,411 |
| 1954. | 3,481 | 991 | - | 83,930 | 140,776 | 12,274 |
| 1955. | 3,052 | 1,028 | 35 | 101,021 | 146,407 | 19,379 |
| 1956. | 3,108 | 404 | 6 | 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 | - | 328 | 134,912 | 188,272 | 12,945 |
| 1960. | 13,863 | - | - | 157,470 | 206,272 | 12,793 |
| 1961.. | 15,752 | - | - | 149,007 | 211,647 | 12,454 |
| 1062P. | 18,342 | 241 | 6,629 | 151,390 | 184,684 | 10,934 |

11.-Copper Production, by Province, and Total Value 1953-62-concluded

| Year | Saskatchewan | British Columbia | Northwest Territories | Yukon Territory | Canada |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Quantity | Value |
|  | tons | tons | tons | tons | tons | 8 |
| 1953.... | 30,588 | 24,148 | - | - | 253,252 | 150,953,742 |
| 1954.... | 36,192 | 25, 088 | - | - | 302,732 | 175,712, 693 |
| 1955. | 32,945 | 22,127 | - | - | 325, 994 | 239, 756 , 455 |
| 1956... | 33,116 | 21,682 | - | - | 354,860 | 292,958, 091 |
| 1957... | 30,597 | 15,410 | 165 | - | 359, 109 | 206, 897,988 |
| 1958. | 37,510 | 6,010 | 434 | - | 345,114 | 174, 430,930 |
| 1959.. | 35,536 | 8,121 | 494 | - | 395, 269 | 233, 102, 813 |
| 1960. | 31,785 | 16,559 | 520 | - | 439, 262 | 264, 846, 637 |
| 1961.. | 33, 479 | 15,845 | 463 | 440 | 439,087 | 255, 157,626 |
| 1962p.. | 32,127 | 53,709 | 305 | 229 | 458,590 | 283, 133,249 |

Iron Ore.-Shipments of iron ore from Canadian mines, which have fluctuated considerably over the past ten years, reached a record level in 1962. The quantity shipped by each producing province was higher than in 1961, but the major increase was contributed by Quebec which accounted for 42 p.c. of the country's output.

Production of pig iron and of steel ingots and castings was also at its highest level in 1962. Exports of iron ore-direct shipping grade, concentrated, agglomerated and other forms-amounted to $24,243,249$ tons valued at $\$ 220,522,000$, a considerable increase over the 1961 totals. Of the 1962 tonnage exported, 78 p.c. went to the United States and most of the remainder to Europe, mainly to Britain. Japan received 1,729,866 tons.

## 12.-Iron Ore Shipments and Production of Pig Iron and Steel Ingots and Castings, 1953-62

| Year | Iron Ore Shipments |  |  |  |  |  | Production of Pig Iron | Production of Steel Ingots and Castings |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Nfld. | Que. | Ont. | B.C. | Canada |  |  |  |
|  |  |  |  |  | Quantity | Value |  |  |
|  | tons | tons | tons | tons | tons | \$ | tons | tons |
| 1953... | 2,686,481 |  | 2,832,090 | 991,247 | 6,509, 818 | 44,102,944 | 3,012, 268 | 4,116,068 |
| 1954... | 3,758,526 | 650,415 | 2,416, 911 | 535, 746 | 7,361,598 | 49,666,507 | 2,211, 029 | 3,195, 030 |
| 1955. | 7, 206, 883 | 4, 103, 173 | 4,362, 191 | 610,930 | ${ }^{16,283,177}$ | $110,435,850$ | 3,215, 367 | 4,534,672 |
| 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 | 6,060,325 | 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 | 4,278,425 | 5,789, 570 |
| 1961... | 7,611,340 | 5,639, 931 | 5,772, 664 | 1,335, 068 | 20,359,003 | 187, 950,047 | 4,925,395 | 6,466,324 |
| 1962p.. | 7,744,524 | 11,584,497 | 6,652,331 | 1,917,361 | 27,898,713 | 264,608,450 | 5,288,933 | 7,173,475 |

Gold.-Over the ten-year period 1953-62, Canada's annual gold production fluctuated narrowly between $4,000,000$ oz.t. and $4,600,000$ oz.t. and its value between $\$ 140,000,000$ and $\$ 159,000,000$; the high point was reached in 1961. Output in 1962 was down by 318,489 oz.t. compared with 1961 and, despite the establishment of a higher price per oz.t. (see p. 529), the value was $\$ 3,191,000$ lower. All provinces except Newfoundland, Manitoba and British Columbia, as well as the Yukon and Northwest Territories, reported decreased output in 1962, the major producers-Ontario and Quebec-declining by 9.2 p.c. and 5.3 p.c., respectively. Ontario produced 57.6 p.c. of Canada's gold output in 1962, Quebec 24.0 p.c., the Northwest Territories 9.5 p.c. and British Columbia 4.1 p.c.

## 13.-Quantity and Value of Gold Produced, by Province, 1953-62

Note.-Values are calculated at world prices in Canadian funds. Figures from 1862 are given in the corresponding table of previous Year Books beginning with the 1916-17 edition.


[^163]Uranium.-Uranium mineralization has been found in Canada at intervals along the western and southern edges of the Canadian Shield but production has been concentrated in four areas within this belt-Great Bear Lake in the Northwest Territories, Beaverlodge in northern Saskatchewan, and Elliot Lake and Bancroft in Ontario. Although output of uranium first began in the Northwest Territories in 1942, figures were not available until 1954 because of government restrictions. However, it was after that time that the large mines and mills of Saskatchewan and Ontario came into production. Peak output amounting to $31,800,000 \mathrm{lb}$. was reached in 1959 from 23 mines, but by the end of

1962, for economic reasons (see p. 531), eight mines (seven companies) remained in operation and production dropped to about $17,000,000 \mathrm{lb}$. for the year. Of the 1962 quantity, 76.1 p.c. was produced in Ontario and the remainder in Saskatchewan.
14.-Production and Value of Uranium $\left(\mathrm{U}_{3} \mathrm{O}_{8}\right)$, by Province, 1954-62

| Year | Ontario |  | Saskatchewan |  | Northwest Territories |  | Canada |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quantity ${ }^{1}$ | Value | Quantity ${ }^{1}$ | Value | Quantity ${ }^{1}$ | Value | Quantity ${ }^{\text {l }}$ | Value |
|  | lb. | \$ | lb. | \$ | lb. | \$ | lb. | \$ |
| 1954.. | - | $\bar{\square}$ | . | 10, 981, 417 | . | 15,486, 157 |  | 26,467,571 |
| 1955. |  | 487,054 |  | 12,312,471 |  | 13,232,079 |  | 26,031, 60.4 |
| 1956.. | 906,614 | 9,361,867 | 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, 993 | 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 | 151,060,610 | 4,310, 871 | 44,631, 014 |  | , | 19,281, 465 | 195,691,624 |
| 1962p. | 12,842,339 | 115,288,585 | 4,020,484 | 36,136,421 | - | - | 16,862,823 | 151,425,006 |

${ }^{1}$ Figures for 1956 include radium salts, silver, cobalt and uranium oxides; figures for 1957-62 are for uranium
oxide $\left(\mathrm{U}_{3} \mathrm{O}_{8}\right)$.
Zinc.-The estimated production of zinc (including refined zinc, zinc ores and concentrates) showed considerable improvement in 1962 over 1961. British Columbia accounted for 43.8 p.c. of the quantity produced, Quebec for 15.1 p.c., Ontario 13.6 p.c. and Manitoba 11.2 p.c., followed in order by Newfoundland, Saskatchewan, Yukon Territory, New Brunswick and Nova Scotia. Large increases were reported by Manitoba, Quebec and Ontario, new production was shown by New Brunswick and Nova Scotia, Newfoundland's output remained approximately the same as in 1961 and slight increases were reported by the other producers.

## 15.-Quantity and Value of Zinc Produced, 1953-62

Note.-Figures from 1911 are given in the corresponding table of previous Year Books beginning with the 1939 edition.

| Year | Quantity ${ }^{1}$ | Value | Average Price per lb | Year | Quantity ${ }^{1}$ | Value | Average Price per lb. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | tons | \$ | cts. |  | tons | 8 | cts. |
| 1953. | 401,762 | 96,101,386 | 11.96 | 1958. | 425,099 | 92,501,496 | 10.88 |
| 1954. | 376,491 | 90, 207,285 | 11.98 | 1959. | 386,008 | 96,942,663 | 12.24 |
| 1955 | 433,357 | 118, 306, 466 | 13.65 | 1960 | 400, 873 | 103, 635, 003 | 13.35 |
| 1955. | 422,642 | 125, 437, 344 | 14.84 | 1961. | 416,004 457,144 | $104,749,879$ $110,628,845$ | 12.59 12.10 |
| 1957. | 413,740 | 100,042,533 | 12.09 | 1962p | 457, 144 | 110,628,845 | 12.10 |

${ }^{1}$ Estimated foreign smelter recoveries and refined zinc produced in Canada.
Lead.-Lead production in 1962 in the form of refined pig and recoverable lead in ore and concentrates was somewhat lower than the record output of 1961. As stated on p. 532, most of the decrease resulted from lower production at Canada's only lead refinery, located at Trail, B.C. British Columbia produced about 76 p.c. of the total 1962 output. Lead occurs in the complex ores at Buchans in Newfoundland and in the silver-lead ore mined in the Mayo district of Yukon Territory, and smaller amounts are produced in Quebec, Manitoba and Ontario. In 1962, Nova Scotia recorded its first output from a new mine and New Brunswick renewed production in the Bathurst area.

## 16.-Quantity and Value of Lead Produced from Canadian Ores, 1953-62

Nort.-Figures from 1887 are given in the corresponding table of previous Year Books beginning with the 1929 edition.

| Year | Quantity | Value | Year | Quantity | Value |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | tons | \$ |  | tons | \$ |
| 1953.. | 193,705 | 50, 076, 822 | 1958. | 186,680 | 42,413,805 |
| 1954.. | 218,495 | 58, 250, 331 | 1959. | 186,696 | 39,616, 835 |
| 1955.. | 202,762 | 58, 314, 500 | 1960. | 205,650 | 43,926, 888 |
| 1956.. | 188, 854 | 58,582,651 | 1961. | 230,435 | 47,054,765 |
| 1957.... | 181,484 | 50,670,407 |  | 190,609 | 37,816,785 |

Silver.-Production of silver is fairly widespread across Canada, being recovered mainly as a by-product in the treatment of gold ores and ores of copper, lead, zinc, cobalt and nickel. Output is therefore often affected by changes in the production of these metals. Thus, the drop in the amount of lead produced at the Trail refinery in 1962 caused a reduction in the output of silver in British Columbia. This reduction, together with decreases recorded by Ontario, Saskatchewan and the Territories, was only partially offset by increases in the other producing provinces. However, an increase in the price of silver (see p. 533) brought the value of the 1962 production to an all-time high.

## 17.-Quantity of Silver Produced, by Province, and Total Value, 1953-62

Notz.-Figures from 1887 are given in the corresponding table of previous Year Books beginning with the 1916-17 edition.

| Year | Average <br> Price per oz.t. <br> (Canadian funds) | Newfoundland | Nova Scotia | Quebec | Ontario | Manitoba |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | cts. | oz.t. | oz.t. | oz.t. | oz.t. | oz.t. |
| 1953. | 84.01 | 648,389 | 226,225 | 4,571,373 | 5,154,619 | 429,508 |
| 1954. | 83.26 | 742,120 | 262,361 | 4,907,304 | 5,443,721 | 411,125 |
| 1955. | 88.18 | 701,792 | 262,067 | 4,786,695 | 6,051,017 | 454, 528 |
| 1956. | 89.67 | 957,125 | 92,859 | 4,063,966 | 6,626,447 | 430, 124 |
| 1957. | 87.37 | 1,196,414 | 1 | 3,645,856 | 6,910,130 | 407, 834 |
| 1958. | 86.81 | 1,267,078 | 4 | 3,908,361 | 9,815,257 | 320,759 |
| 1959. | 87.78 | 1,125,110 | - 4 | 4,108,241 | 10,540,856 | 373, 827 |
| 1960. | 88.91 | 1,271,126 | - | 4,115,105 | 11,220, 823 | 501,637 |
| 1961. | 94.26 | 1,145, 105 | - | 4,315,844 | 8,870,402 | 767,543 |
| 1962ø................... | 116.50 | 1,430,510 | 741,918 | 5,234,948 | 8,157,945 | 854,610 |
|  | Saskatchewan | British Columbia | Northwest Territories | Yukon Territory | Canada ${ }^{1}$ |  |
|  | oz.t. | oz.t. | oz.t. | oz.t. | oz.t. | \$ |
| 1953. | 1,257,622 | 9,308, 874 | 63,592 | 6,639,127 | 28,299,335 | 23,774,271 |
|  | 1,474, 370 | 10, 825, 614 | 59, 037 | 6,992,279 | 31,117,949 | 25,907, 870 |
| 1956. | 1,230,179 | 8,702,122 | 58,477 | 5,712,219 | 27, 9844,204 | 24,676,472 |
| 1957. | 1,179,110 | 8, 001,398 | 69,916 | 6,192,706 | 28,431,847 | 25,497, 681 |
| 1957. | 1,145,571 | 8,584,991 | 69,104 | 6,484,185 | 28,823,298 | 25,182,915 |
| 1958. | 1,299,077 | 8,013,428 | 72,779 | 6,415,560 | 31,163,470 | 27,053,007 |
| 1960 | 1,187,439 | 7,463,285 | 70,560 | 7,054,632 | 31, 923,969 | 28,022,860 |
| 1961 | 1,163,845 | 8,447,440 | 79,473 | 7,217, 361 | 34,016,829 | 30, 244, 363 |
| 1962p. | $\stackrel{876,450}{773}$ | 8, ${ }^{8,391,640}$ | 77,890 72,610 | ${ }_{6}^{6,937,086}$ | 31,312,977 | 29,580,651 |
|  | 773,611 | 5,995,195 | 72,610 | 6,581,615 | 29,955,465 | 34, 897,604 |

[^164]
## Subsection 4.-Production of Non-metallic Minerals (excluding Fuels)

Asbestos is by far the most important item in this group in point of value, followed by salt, sulphur and gypsum. These four items are discussed separately below. Next in importance is peat moss which, although included as a non-metallic mineral, consists of the dead fibrous moss produced from peat bogs; its growing use as a soil conditioner, as poultry and stable litter and as packaging material resulted in shipments valued at nearly $\$ 7,700,000$ in 1962 , double the shipments of 1956. Quantities and values of other non-metallic minerals produced are shown in Table 5, p. 559, and a review of recent developments in the industrial mineral field is given at pp. 536-538.

Asbestos.-In 1962, Canadian asbestos mines shipped a record 1,223,509 tons valued at $\$ 132,060,710$, representing an increase of 4.2 p.c. in quantity and 2.4 p.c. in value over 1961. Quebec, with 12 producing mines, accounted for over 92 p.c. of the total tonnage; Ontario's one mine produced 35,000 tons and British Columbia's one mine produced 55,700 tons.
18.-Quantity and Value of Asbestos Produced, 1953-62

Nore.-Figures from 1896 are given in the corresponding table of previous Year Books beginning with the 1911 edition.

| Year | Quantity | Value | Year | Quantity | Value |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | tons | \$ |  | tons | \$ |
| 1953. | 911,226 | 86, 052, 895 | 1958. | 925,331 | 92,276,748 |
| 1954. | 924,116 |  |  | 1,050,429 | 107, 433, 34- |
| 1955. | 1,063,802 | $96,191,317$ | 1960. | 1,118, 456 | 121, 400, 015 |
| 1956. | 1,014,249 | 99, 859,969 | 1961. | 1,173, 695 | 128, 955, 000 |
| 1957.. | 1,046,086 | 104,489,431 | 1962p | 1,223,509 | 132,060,710 |

Salt.-The output of salt reached a high point in both quantity and value in 1962, with all producing provinces contributing to the increase over 1961. Ontario produced almost 87 p.c. of the total tonnage. Rock salt is mined in Nova Scotia and Ontario only; brine wells are operated in Nova Scotia, Ontario, Manitoba, Saskatchewan and Alberta.

## 19.-Quantity of Salt Produced, by Province, and Total Value, 1953-62

Nore.-Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1946 edition.

| Year | Nova Scotia | Ontario | Manitoba | Saskatchewan | Alberta | Canada |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | tons | tons | tons | tons | tons | tons | \$ |
| 1953. | 127, 819 | 749,045 | 18,078 | 35,100 | 24,885 | 954,928 | 5,974,501 |
| 1954. | 150,580 | 733,066 | 17,809 | 37,227 | 31, 196 | 969, 387 | 8,340, 163 |
| 1955. | 144, 862 | 998,789 | 18,954 | 40,748 | 41,408 | 1,244,761 | 10,122,299 |
| 1956. | 132, 539 | 1,347, 729 | 21,008 | 42, 814 | 46, 654 | $1,590,804$ $1,771,559$ | $12,1+1,476$ $13,989,703$ |
| 1957. | 122,763 | 1,538,805 | 19,372 | 43,684 | 46,935 | 1,771,559 | 13,989, 703 |
| 1958.. | 125, 872 | 2,126, 183 | 20,560 | 46,511 | 55,766 | 2,375,192 | 14,989, 542 |
| !959.. | 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 |
| 1962p | 309,683 | 3,127,043 | 24,100 | 54,180 | 91, 800 | 3,606,811 | 23,185,423 |

Sulphur.-The figures in Table 20 represent the quantity and value of sulphur contained in derivatives from smelter gases such as sulphur dioxide, sulphuric acid, etc., and in pyrite and pyrrhotite shipments, as well as the quantity and value of sulphur
refined from natural gas production. The increase in the latter over the past five years has been quite remarkable. In Canada, sulphur is used in the treatment of sulphite pulps and in the manufacture of rayon, explosives, rubber goods, petroleum refining, matches and insecticides.
20.-Quantity and Value of Sulphur Produced from Smelter Gases and in Pyrite and Pyrrhotite Shipments, and Quantity of Elemental Sulphur Sales, 1953-62

| Year | Sulphur in Smelter Gases |  | Producers' Shipments Pyrite and Pyrrhotite |  |  | $\begin{gathered} \text { Sales of } \\ \text { Elemental Sulphur }{ }^{1} \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quantity | Value | Gross <br> Weight | Sulphur <br> Content | Value | Quantity | Value |
|  | tons | \$ | tons | tons | \$ | tons | \$ |
| 1953. | $172,200{ }^{2}$ | 1,722,000 | 408,257 | 186,650 ${ }^{3}$ | 1,450,698 | 16,072 | .. |
| 1954. | 221, 2472 | 2,212,470 | 687,923 | $311,159{ }^{3}$ | 2,683,499 | 18,665 | .. |
| 1955. | 224,4572 | 2,244,570 | 878,452 | $403,986{ }^{3}$ | 3, 740,383 | 25,976 |  |
| 1956. | $236,089^{3}$ | 2,323,590 | 1,046,740 | 473,605 | 4,538,785 | 34,784 | .. |
| 1957. | $235,123{ }^{3}$ | 2,322,067 | 1,166,416 | 515,096 | 4,808,228 | 93,335 | . |
| 1958. | $241,055{ }^{3}$ | 2,361,252 | 1,191,731 | 512,427 | 4,248,668 | 94,377 | 1,872,832 |
| 1959. | $277,030^{3}$ | 2,716,416 | 1,099,564 | .. | 3,433,095 | 145,656 | 2,620,787 |
| 1960. | $289,620^{3}$ | 2, 854,623 | 1,032,288 | .. | 3,316,378 | 274, 359 | 4,298,906 |
| 1961. | $277,056{ }^{3}$ | 2,703,110 | 517,2584 | . | 1,830,566 | 394, 762 | 7,287, 881 |
| 1962D.. | 286,566 ${ }^{3}$ | 2,777,262 | 532,082 ${ }^{4}$ |  | 1,703,225 | 668,126 | 8,903,209 |

[^165] residue or sinter.

Gypsum.-Nova Scotia deposits provided 83 p.c. of the total output of gypsum in 1962. Only British Columbia among the producing provinces failed to show an increase in output in 1962 over 1961. The over-all increase in quantity was about 5 p.c. and in value about 17 p.c. Both quantity and value were only slightly below their peak production in 1960. In Canada, gypsum is used in the manufacture of plaster and wallboard and is added to Portland cement to control setting, but the greater part of the output is exported in crude form to United States plants for processing.

## 21.-Quantity of Gypsum Produced, by Province, and Total Value, 1953-62

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 <br> Brunswick | Ontario | Manitoba | British Columbia | Canada |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | tons | tons | tons | tons | tons | tons | tons | \$ |
| 1953. | 26,531 | 3,050, 832 | 120,816 | 334,495 | 163,313 | 145,470 | 3,841,457 | 7,399,884 |
| 1954. | 26,653 | 3,168, 134 | 88, 856 | 357, 432 | 162,037 | 147, 310 | 3,950,422 | 7,094,671 |
| 1955. | 46,459 | 3,838,847 | 90,096 | 366,416 | 176,005 | 150,078 | 4,667,901 | 8,037,153 |
| 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 | 9,499,711 |
| 1961. | 40,699 | 4,113,188 | 85,330 | 425,287 | 122,233 | 153,300 | 4,940,037 | 7,750,748 |
| 1962p. | 51,200 | 4,302,568 | 89,100 | 450,000 | 139,355 | 151,688 | 5,183,911 | 9,033,148 |

## Subsection 5.-Production of Fuels

Coal.-The downward trend in the production of coal, in evidence for some time, was interrupted in 1960 but resumed again in 1961. In 1962, all producing provinces with the exception of Saskatchewan and Alberta showed some decrease in output compared with the previous year. Imports also declined and the quantity of exports was down slightly although their value remained about the same.

## 22.-Coal Production, by Province, 1953-62

Note.-Figures from 1874 are given in the corresponding table of previous Year Books beginning with the 1911 edition.

| Year | Nova Scotia | New Brunswick | Saskatchewan | Alberta | British Columbia | Yukon Territory | Canada |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | tons | tons | tons | tons | tons | tons | tons | \$ |
| 1953. | 5,787,026 | 721,252 | 2,021, 304 | 5,917,474 | 1,443,006 | 10,611 | 15,900,673 | 102,721,875 |
| 1954. | 5, 842,896 | 781,271 | 2,116,740 | 4,859,049 | 1,299,510 | 14,113 | 14,913,579 | 96,600, 266 |
| 1955. | 5,731,026 | 877, 838 | 2,293,816 | 4,455,279 | 1,453,881 | 7,040 | $14,818,880$ | 93,579,471 |
| 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 | 3,156,546 | 1,113,699 | 7,731 | 13,189,155 | 90,220,670 |
| 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 |
| 1961. | 4,300,758 | 887, 903 | 2,208,851 | 2,027, 826 | 964,663 | 7,703 | 10,397, 704 | 70,052,683 |
| 1962p. | 4,204,779 | 815,529 | 2,256,306 | 2,087,310 | 913,196 | 7,649 | 10,284,769 | 68,419,443 |

23.-Imports of Anthracite, Bituminous and Lignite Coal and Briquettes, 1953-62

Note.-Figures from 1868 are given in the corresponding table of previous Year Books beginning with the 1911 edition.


## 24.-Exports of Domestic Coal, 1953-62

Notr.-Figures from 1868 are given in the corresponding table of previous Year Books beginning with the 1911 edition.

| Year | Quantity | Value | Year | Quantity | Value |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | tons | \$ |  | tons | \$ |
| 1953.. | 255, 274 | 1,999,908 | 1958. | 338,544 | 2,907,513 |
| 1954. | 219,346 | 1,716,435 | 1959.. | 473,768 | 3,582.313 |
| 1955. | 592,782 | 4,870,598 | 1960. | 852,921 | 6,789,163 |
| 1956. | 594,166 | 4,710,030 | 1961. | 939,360 | 8,541,679 |
| 1957. | 396,311 | 3,357,959 | 1962. | 901,560 | 8,590,693 |

The amounts and percentages of domestic and imported coal apparently consumed in Canada in the years 1953-62 are shown in Table 25. 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 landed at Canadian ports and re-exported or exwarehoused for ships' stores without being taken out of bond. However, since such coal while remaining in bond at the port is available for Canadian consumption if required, the total amount of coal made available for consumption in Canada in 1962 amounted to $21,824,538$ tons, including 851,668 tons of anthracite, $17,220,149$ tons of bituminous, $1,496,661$ tons of subbituminous, and $2,256,060$ tons of lignite.

## 25.-Consumption of Canadian and Imported Coal in Canada, 1953-62

Note.-Figures from 1886 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 |  |  |  | GrandTotal | Con-sumption per Capita |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | From <br> United <br> States | From Britain | Total ${ }^{3}$ |  |  |  |
|  | tons | p.c. | tons | tons | tons | p.c. | tons | tons |
| 1953. | 15,240, 105 | 40.0 | 22,548,793 | 352,383 | 22,900,392 | 60.0 | 38,140,497 | 2.58 |
| 1954. | 14,466,212 | 44.0 | 18,054, 962 | 286,304 | 18,322,056 | 56.0 | 32,788,268 | 2.16 |
| 1955. | 14,060,039 | 42.1 | 19,053,434 | 269, 898 | 19,322, 134 | 57.9 | 33,382,173 | 2.14 |
| 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 | 56.1 | 25,208,878 | 1.48 |
| 1959. | 10,589, 263 | 43.1 | 13,861, 676 | 96,814 | 13,953,996 | 56.9 | 24,548, 259 | 1.41 |
| 1960 | 9,973, 308 | 42.9 | 13,211,493 | 65,375 | 13,276,599 | 57.1 | 23,249,907 | 1.31 |
| 1961. | 9,572,805 | 44.3 | 12,253,272 | 53,226 | 12,057,086 | 55.7 | 21,629,891 | 1.19 |
| 1962. | 9,510,293 | 43.4 | 12,583,618 | 30,571 | 12,377, 965 | 56.6 | 21,888, 258 | 1.18 |

[^166]Petroleum.-The upward climb of crude petroleum production which started with the discovery of the Leduc field in Alberta in 1947 halted temporarily in 1958 but resumed in 1959 and continued in subsequent years. Quantity production in 1962 reached a record level, about $23,000,000 \mathrm{bbl}$. higher than in 1961. This increase was contributed almost equally by Alberta, Saskatchewan and British Columbia.

## 26.-Quantity and Value of Crude Petroleum Produced, by Province, 1953-62

Note.-Figures from 1936 are given in the corresponding table of previous Year Books beginning with the 1948-49 edition.

| Year | New Brunswick |  | Ontario |  | Manitoba |  | Saskatchewan |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quantity | Value | Quantity | Value | Quantity | Value | Quantity | Value |
|  | bbl. | \$ | bbl. | \$ | bbl. | \$ | bbl. | \$ |
| 1953... | 14,738 | 20,633 | 299,685 | 994,835 | 653,514 | 1,714,806 | 2,797,888 | 3,833,107 |
| 1955... | 12,548 12,548 | 18,265 17 | 412,474 525 | $1,391,687$ | 2,148, 484 | 5,619,649 | 5,422,899 | 8,183,304 |
| 1956. | 16,628 | 23,279 | 593,370 | 1,958,121 | 5,786,540 | 13,633,088 | $11,317,168$ $21,077,371$ | 18,317,968 |
| 1957. | 19,401 | 27,161 | 623,666 | 2,160,000 | 6,089,743 | 15,467,947 | 36,861,089 | 79, 325,064 |
| 1958. | 15,189 | 21,265 | 778,3.11 | 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 | 11,619,872 | 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 |
| 1962p. | 10,000 | 14,000 | 1,143,500 | 3,682,070 | 3,971,144 | 9,590,325 | 64,000,000 | 141,000,000 |

26.-Quantity and Value of Crude Petroleum Produced, by Province, 1953-62-concluded

| Year | Alberta |  | British Columbia |  | Northwest Territories |  | Canada |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quantity | Value | Quantity | Value | Quantity | Value | Quantity | Value |
|  | bbl. | \$ | bbl. | \$ | bbl. | \$ | bbl. | \$ |
| 1953. | 76, 816,383 | 193, 761,644 | - | - | 316,689 | 257,251 | 80, 898, 897 | 200,582, 276 |
| 1954 | 87,713, 855 | 228,319,165 | - | - | 369,887 | 344,960 | 96,080, 345 | 243, 877,030 |
| 1955. | 113,035,046 | 274, 901,232 |  |  | 404,219 | 1,185,780 | 129,440, 247 | 305,640,036 |
| 1956. | 143,909,641 | 353, 629,158 | 148,454 | 302,375 | 449,409 | 762,773 | 171,981,413 | 406,561,872 |
| 1957. | 137,492,316 | 355, 555,140 | 340,945 | 763,717 | 420,844 | 294,591 | 181, 848, 004 | 453,593, 620 |
| 1958. | 113,277,817 | 283,262,592 | 512,359 | 1,022,156 | 457,086 | 698,266 | 165,496, 196 | 398,747, 818 |
| 1959. | 129,967, 312 | 306,917, 803 | 866,234 | 1,583,129 | 430, 319 | 1,025,914 | 184,778, 497 | 422, 092,535 |
| 1960. | 130,506, 968 | 302, 841, 423 | 867,057 | 1,626,590 | 468,545 | 641,219 | 189,534, 221 | 422,926,497 |
| 1961. | 157, 811,712 | 355, 330,845 | 1,017, 826 | 1, 1759,873 | 516,979 | 730, 160 | 220,848, 080 | 487, 560,242 |
| 1962p. | 165,046,000 | 410,964,540 | 9,242,205 | 17,449,477 | 595,000 | 892,500 | 244, 007, 849 | 583, 592,912 |

Natural Gas.- The output of natural gas continued to increase at a rapid rate in Alberta and British Columbia. Total Canadian shipments, which amounted to $150,772,000$ Mcf. in 1955 reached a high of $955,526,000 \mathrm{Mcf}$. in $1962,781,000,000 \mathrm{Mcf}$. of which came from Alberta. A review of developments in the natural gas industry is given at pp. 538-542.

## 27.-Quantities of Natural Gas Produced, by Province, and Total Value, 1953-62

Note.-Figures from 1920 are given in the corresponding table of previous Year Books beginning with the 1940 edition.

| Year | New <br> Brunswick | Ontario | Saskatchewan | Alberta | British Columbia | Northwest Territories | Canada |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Mcf. | Mcf. | Mcf. | Mcf. | Mcf. | Mcf. | Mcf. | 8 |
| 1953 | 177,112 | 9,708, 969 | 1,422,128 | 89,651,605 | - | 26,109 | 100, 985, 923 | 10,877,017 |
| 1954 | 183,457 | 10,015,818 | 3,333, 077 | 107,173, 777 | - | 29,085 | 120, 735, 214 | 12,482,109 |
| 1955. | 186, 549 | 10,852,857 | 6,706,743 | 133,007,493 |  | 18,670 | 150,772,312 | 15,098,508 |
| 1956 | 190,322 | 12,811,618 | 9,807,697 | 146, 133, 893 | 187,846 | 21,210 | 169, 152,586 | 16, 849,556 |
| 1957. | 176,417 | 14,400,913 | 12, 2994,347 | 183,140, 820 | 8,274,942 | 19,243 | 220,006,682 | 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, 334, 527 | 39,609,393 |
| 1960 | 98,701 | 16,987,056 | 36,571,633 | 383,682,986 | 85,592, 166 | 39,785 | 522,972,327 | 52,196,882 |
| 1961 | 96,318 | 14,54t, 165 | 37,192,595 | 500,843, 900 | 103, 018,988 | 41,678 | 655,737,644 | 68,421,918 |
| 1962p. | 87,300 | 15,875,000 | 39,000,000 | 781,000,000 | 119,500,000 | 64,000 | 955, 526, 300 | 97,912,950 |

## Subsection 6.-Production of Structural Materials

Active construction throughout Canada has kept production of structural materials at a high level in recent years. The value of such materials produced reached the record total of $\$ 350,266,000$ in 1962. In point of value, sand and gravel is the most important of the structural materials, followed by cement, stone, clay products and lime. Developments in the cement and silica industries during 1962 are covered in the review at pp. 536-538.

Sand and Gravel.-Deposits of sand and gravel are numerous throughout Eastern Canada, with the exception of Prince Edward 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.

In 1962 an estimated $167,328,000$ tons of sand and gravel were produced, valued at $\$ 118,228,000$. This represented a decrease of 2 p.c. in quantity and an increase of 13 p.c. in value compared with 1961. Quebec and Ontario together contributed 66 p.c. of the quantity.
28.-Producers' Shipments of Sand and Gravel, by Province, and Total Value, 1953-62

| Year | Newfoundland | Prince <br> Edward Island | Nova Scotia | New Brunswick | Quebec | Ontario |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | tons | tons | tons | tons | tons | tons |
| 1953. | 1,908,187 | . | 1,523,083 | 2,648,235 | 26,694,125 | 43,658,099 |
| 1954. | 2,105,522 | .. | 1,330,979 | 3,528,318 | 30,052, 887 | 46,433,191 |
| 1955. | 3,142,226 | . | 1,156,710 | 5,731,835 | 36,722,008 | 51,488,067 |
| 1956 | 2,490,580 | .. | 1,675,458 | 6,140,029 | 37,175,708 | 61,436, 363 |
| 1957. | 2,796,273 | . | 1,933,070 | 7,342,928 | 40,913,961 | $66,129,158$ |
| 1958. | 4,032,985 |  | 2,333,792 | 4,015,976 | 40, 507,787 | 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, 197 | 5,574,377 | 5,014,234 | 44, 126, 199 | 70,208,199 |
| 1962p.......... | 3,038,458 | 697,070 | 3,291,741 | 5,909, 835 | 44,060,533 | 66,319,707 |
|  | Manitoba | Saskatchewan | Alberta | British Columbia | Canada |  |
|  |  |  |  |  | Quantity | Value |
|  | tons | tons | tons | tons | tons | \$ |
| 1953. | 4,685,323 | 4,770,368 | 7,651,261 | 7,494,268 | 101,033, 949 | 53,485, 401 |
| 1954. | 4,831,716 | 5,211,429 | 7,313,380 | 10,153,612 | 110,961,034 | 58,987,671 |
| 1955. | 5,272,676 | 5,039,682 | 7,819,933 | 11,151,337 | 127,524, 474 | 67,775,053 |
| 1956. | 6,883,026 | 6,466,810 | 10,522, 441 | 16,010, 353 | 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 | 13,226,668 | 13,216,976 | 160,210,945 | 96, 282,363 |
| 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, 163,886 |
| 1961. | 7,402,385 | 7,626,197 | 12,591,944 | 14,279,191 | 170,750,947 | 104,654,132 |
| 1962p | 9,801,943 | 6,518,262 | 12,076,845 | 15,613,703 | 167,328, 097 | 118,228,032 |

Cement.-The production of cement in Canada reached an all-time high in 1962, output in that year being 8 p.c. above the previous peak reached in 1959. Consumption, continuing the almost steadily upward trend in evidence throughout the postwar period, also attained a record in 1962. Of the Canadian total of $6,786,000$ tons produced in that year, Ontario contributed 36 p.c. and Quebec 33 p.c.; all other provinces except Prince Edward Island and Nova Scotia contributed to the remainder, and all producing provinces except British Columbia showed increased production.

## 29.-Quantity and Value of Production, Imports, Exports and Apparent Consumption of Cement, 1953-62

Note.-Figures from 1910 are given in the corresponding table of previous Year Books beginning with the 1939 edition.

| Year | Shipments (sold or used) |  | Imports | Exports | Apparent Consumption ${ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | tons | $\delta$ | tons | tons | tons |
| 1953. | 3,591,708 | 58, 842,022 | 434,487 | 2,577 | 4,323,618 |
| 1954. | 3,926,553 | 59,035, 644 | 401,135 | 21,638 | 4,306, 050 |
| 1955. | 4,404,480 | 65,650,025 | 517,890 | 168,907 | 4,753,463 |
| 1956. | 5,021,683 | 75, 233,321 | 677,6162 | 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, 147, 798 | 29,256 | 303,126 | 6,010,616 |
| 1960. | 5,787,225 | 93,261,473 | 22,478 | 181,117 | 5,628,586 |
| 1961. | 6,205, 948 | 103,923,644 | 29,217 | 249, 377 | 5,985,788 |
| 1962p. | 6,786,229 | 113, 364,118 | 26,525 | 219,164 | 6,593,590 |

[^167]${ }^{2}$ Includes imported clinker, other than white.

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.
30.-Producers' Shipments of Stone, ${ }^{1}$ by Province, and Total Value, 1953-62

| Year | Newfoundland | Prince Edward Island | Nova | cotia | New | Brunswick | Quebec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | tons | tons | tons |  |  | tons | tons |
| 1953. | 391,633 | $\cdots$ | $\begin{array}{r} 193,101 \\ 9,757,607 \end{array}$ |  |  | 987,977 | 7,754,248 |
| 1954. | 359,350 | . |  |  |  | 720,792 | 10,111,361 |
| 1955. | 333,982 |  | 367, 320 |  |  | 1,075,230 | 12,633,335 |
| 1955. | ?27, 943 | $\cdots$ |  |  |  | 2, 129,109 | 11,153,206 |
| 1957. | 348,373 | $\cdots$ | 4034,952 |  |  | 1,285,811 | 16,053,605 |
| 1958. | 282,439 | 1,700,000 | $\begin{array}{r} 435,047 \\ 1,393,668 \end{array}$ |  |  | 2,100,687 | 16,963,511 |
| 1959. | 352,231 |  |  |  |  | 2,119,136 | 20,437, 243 |
| 1960. | 380,843 | 750,000225,000 | $1,914,937$$1,021,880$ |  |  | 1,883, 867 | 20,394,509 |
| 1961. | 322, 820 |  |  |  |  | 2,957, 886 | 22,648,010 |
| 1962p. | 229,792 | 225,000 | -683,054 |  |  | ,497,756 | 21,627,582 |
|  | Ontario | Manitoba | Alberta | British Columbia |  | Canada |  |
|  |  |  |  |  |  | Quantity | Value |
|  | tons | tons | tons | to |  | tons | \$ |
| 1953. | 8,818, 886 | 377, 819 | 18,833 | 1,30 | , 520 | 19, 849,017 | 30,613,051 |
| 1954. | 10, 141, 156 | 207, 556 | 27,017 | 1,44 | , 086 | 32,767,925 | 39, 857, 134 |
| 1955. | 12, 739,139 | 228, 157 | 45,659 | 3.09 |  | 30,512,920 | 43,736,687 |
| 1956. | 15,734, 664 | 262,557 | 66,820 | 3,17 | ,067 | 33,257, 318 | 48, 809,918 |
| 1957. | 17, 390,438 | 454,972 | 80,565 | 4,23 |  | 40,282,081 | 59,197,662 |
| 1958. | 15,756,560 | 540,703 | 91,882 | 1,98 | , 818 | 38,156,647 | 55,582,929 |
| 1959. | 17,288,796 | 526,696 | 528,961 | 2,09 | 804 | 46,439, 5 ? 5 | 60, 958,784 |
| 1960. | 17, 938,583 | 673,598 | 167,201 | 2,25 | 911 | 45, 359,449 | 60,640,621 |
| 1961. | 18,361,843 | 594,921 | 96,753 | 2,70 | 691 | 48, 938,804 | 66,567,668 |
| 1962p... | 17,502, 951 | 661,723 | 87,301 | 1,75 | 317 | 45,270, 476 | 62, 808, 131 |

${ }^{1}$ Excludes limestone used to make lime or cement.
Clay Products.-The sales value of clay products produced in 1962 was slightly higher than in 1961. Common clays suitable for the production of building bricks and tile are found in all the provinces; production is greatest in Ontario and 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, nor have the ball clays of high bond strength occurring in the white mud beds of southern Saskatchewan been developed to any extent.

## 31.-Value (Total Sales) of Clay Products Produced, by Province, 1953-62

Nore.-Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1946 edition.

| Year | Newfoundland | Nova Scotia | New <br> Brunswick | Quebec | Ontario |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | \$ | \$ |
| 1953. | 39,500 | 1,234,319 | 620,769 | 8,070,942 | 14,829,222 |
| 1954. | 33,042 | 1,082,039 | 587,994 | 8,055,692 | 17,230,231 |
| 1955. | 49,338 | 1,196,968 | 704,025 | 8,451,362 | 18,314,320 |
| 1956. | 47,145 | 1,196, 868 | 975, 855 | 9,415,703 | 19,173,336 |
| 1957.. | 29,500 | 1,345,361 | 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. | 8?,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 |
| 1962p. | 140,000 | 1,645,654 | 737,325 | 7,625,076 | 19,956,263 |
|  | Manitoba | Saskatchewan | Alberta | British Columbia | Canada |
|  | \$ | \$ | \$ | \$ | \$ |
| 1953. | 568,477 | 742,959 | 2,135,085 | 1,536,458 | 29,777,731 |
| 1954. | 512,989 | 844,398 | 2,316,982 | 1,696,731 | 32,360,098 |
| 1955. | 635,554 | 992,307 | 2, 800,481 | 2,115,415 | 35,259,770 |
| 1956. | 754,503 | 1,054,071 | 3,038,544 | 2,128,955 | 37,784,980 |
| 1957.. | 827,697 | 1,015,389 | 2,628,187 | 2,020,701 | 35,922,158 |
| 1958. | 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. | 623, 966 | 1,115,474 | 3,517,473 | 2,091,353 | 36,982,948 |
| 1962p. | 580,000 | 1,279,260 | 3,631,491 | 2,143,029 | 37,738,098 |

## Section 5.-Industrial Statistics of the Mineral Industry

The scope of the annual statistics on mineral production published by the Dóminion Bureau of Statistics includes a general review of the principal mineral industries such as 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 Tables 32 and 33 are, in each table, 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 more nearly the actual returns to the different industries than do the values for the minerals in Table 5, p. 559 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, and of cobalt which is derived mainly from African ores. The net shipments of these plants include, therefore, the net value of the metals recovered from these imported ores and to this extent the net values added shown in Tables 32 and 33 include products of other than Canadian origin.

## 32.-Summary Statistics of the Mineral Industry, by Province, 1961

Note.- The figures in this table are not comparable with those given for earlier years in previous editions of the Year Book.

| Province or Territory | $\begin{gathered} \text { Plants } \\ \text { or } \\ \text { Estab- } \\ \text { lishments } \end{gathered}$ | Employees | Salaries and Wages | Cost of <br> Process Supplies, Fuel, <br> Electricity, Freight and Smelter Charges | Net Value Added by Processing |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | \$ | \$ | \$ |
| Newfoundland. | 22 | 4,293 | 20,967,991 | 30,660,495 | 53,752,858 |
| Prince Edward Island. | 4 |  | 1,972 | 2,349 | 124,563 |
| Nova Scotia. | 54 | 8,322 | 27,298,520 | 12,807,718 | 45,489,321 |
| New Brunswick | 57 | 1,460 | 4,730,053 | 3,144,402 | 7,724,629 |
| Quebec.. | 665 | 22,795 | 104,389,513 | 129,797,068 | 231,962,472 |
| Ontario. | 667 | 35,125 | 172, 860, 677 | 106,414,737 | 414,012,771 |
| Manitoba. | 75 | 3,306 | 16,866,255 | 7,645,576 | 34,060, 270 |
| Saskatchewan | 183 | 3,667 | 20,311,916 | 11,936,713 | 162,207,879 |
| Alberta. | 332 | 4,985 | 26,070,299 | 44,050,536 | 460, 199,339 |
| British Columbia. | 243 | 6,500 | 32,716,341 | 52, 174, 892 | 95,501,720 |
| Northwest Territories | 14 | 975 | 5,708,328 | 2,992,061 | 14,828,083 |
| Yukon Territory. | 27 | 719 | 4,256,748 | 2,500,053 | 9,125,571 |
| Canada | 2,343 | 92,149 | 436,178,613 | 404,126,600 | 1,528,989,476 |

A summary of the industrial statistics of the principal mineral industries operating in Canada in the year 1961 is presented in Table 33.

## 33.-Summary Statistics of the Principal Mineral Industries, 1961

Note.-The figures in this table are not comparable with those given for earlier years in previous editions of the Year Book.

| Industry | Plants or Establishments | Employees | Salaries and Wages | Cost of Process Supplies, Fuel, Electricity, Freight and Smelter Charges | Net Value Added by Processing |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | \$ | \$ | \$ |
| Metallics. | 704 | 59,597 | 298,760,653 | 288,298,257 | 662,631,629 |
| Placer gold. | 47 | 243 | 1,326,147 | 211,065 | 2,254,746 |
| Gold quartz. | 140 | 15,876 | $65,465,515$ | 28,154,371 | 106, 879,129 |
| Copper-gold-silve | 276 | 10,901 | 51,459,158 | 91,415,366 | 84, 047,866 |
| Silver-cobalt. | 20 | 560 | 2,216,805 | 1,091,559 | 3,424,158 |
| Silver-lead-zinc | 73 | 4,352 | 22,098,610 | 49,749,740 | $61,422,497$ 109 |
| Nickel-copper. | 50 | 13,697 | 74,754,694 | 25, 381,964 | 109,350,212 |
| Iron................. | 55 | 8,049 | 47,107,661 | $61,744,237$ $30,549,955$ | $124,588,726$ $170,664,295$ |
| Miscellaneous metals | 43 | 5,919 | 34,332,063 | 30,549,955 | 170,664, 295 |
| Non-metallics. | 175 | 11,282 | 51,162,835 | 34,514,027 | 151,727,847 |
| Asbestos. | 23 | 6,875 | 35,093,133 | 21,311,778 | 112, 095,379 |
| Feldspar, quartz and nepheline syenite | 23 | 339 | 1,312,770 | -974,935 | 3, 8220,235 |
| Gypsum... | 9 | 613 | 2, 272,477 | 1,763,451 | $4,833,947$ 110,979 |
| Mica. | 30 42 | 34 1,332 | 3,588,474 | 17,317 $2,550,040$ | 7,001,791 |
| Sealt. | 4 | 1,312 | 3,950,358 | 4,177,693 | 15, 390,252 |
| Talc and soapstone | 4 | 79 | , 264,622 | 124,140 | 612,200 |
| Miscellaneous non-metallics | 35 | 1,098 | 4,682,743 | 3,594,673 | 7,863,064 |
| Fuels. | 743 | 15,362 | 63,733,107 | 70,016,958 | 641,780,431 |
| Coal. | 113 | 10,461 | 35,607,905 | 14, 142, 188 | 58,067,774 |
| Natural gas processing | 49 | 744 | 4,477,319 | 41, 371, 321 | $36,648,692$ |
| Petroleum and natural gas. | 581 | 4,157 | 23,647,883 | 14,503,449 | 547,063,965 |
| Structural Materials. | 721 | 5,908 | 22,522,018 | 11,297,358 | 72,849,569 |
| Sand and gravel. | 493 | 2,513 | 9,898,545 | $3,717,478$ 7 | $35,720,504$ $37,129,065$ |
| Stone......... | 228 | 3,395 | 12,623,473 | 7,579,880 | 37,129,065 |
| Grand Totals. | 2,343 | 92,149 | 436,178, 613 | 404,126,600 | 1,528,989,476 |

## Section 6．－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 1961．These figures are taken from the United Nations Statistical Yearbook 1962 which presents production figures for a much more extensive list of mining and quarrying industries．The 1961 figures are provisional and have been con－ verted 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， 1961
Nors．－Where dashes occur throughout this table they indicate that no figures were given in the United Nations Statistical Yearbook either because there was no production or because the quantity was not available．

| Country | Gold | Silver | Copper | Iron | Lead | Zinc | Coal | Crude Petro－ leum |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | ＇000 oz．t． | ＇000 oz．t． | ＇000 tons | ＇000 tons | ＇000 tons | ＇000 tons | ＇000 tons | ＇000 tons |
| Afghanistan | － | － | － |  |  | － | 72.8 | － |
| Albania．．．． | 二 | 二 | 0.7 | －$\overline{643} 5$ |  |  |  | 714.3 |
| Angeris． |  |  | 0.7 1.0 | $1,643.5$ 519.2 | 10.0 | 46.3 | 86.0 | 17，261．1 114.6 |
| Argentina． |  | 1，414．6 |  |  | 30.5 | 33.3 | 379.2 | 13，321．4 |
| Australia． | 1，070．5 | － | 105.9 | 3，851．5 | 302.1 | 322.8 | 26，957．0 |  |
| Austria． |  | － | 2.2 | 1，272．1 | 6.7 | 9.0 | 116.8 | 2，597．0 |
| Bahrain．． | 0.3 |  | 二 | － | 二 | － |  | 2，478．0 |
| Belgium． |  |  | － | 43.0 | 二 |  | 23，742．7 |  |
| Bolivis． | 29.0 | 3，890．21 | 2.31 |  | 22.41 | 5.81 |  | 411.2 |
| Brazil． | 121.0 | ， | 2.3 | 7，000．8 | 109.3 | － | 2，425．1 | 5，014．4 |
| Britain． |  | － | － | 4，995．7 | 1.7 | － | 213，320．3 ${ }^{2}$ | 166.4 |
| British Guian | 1.6 | － | － |  |  |  | － |  |
| Brunei．${ }^{\text {Bulgaria }}$ | － |  | － | $\overline{212}$ | － |  | － | 4，545．9 |
| Bulgaria | － | ， | 16.8 | 212.7 | 100.0 | 81.5 | 651.5 | 228.2 |
| Burma．．． | 0.5 | 1，369．6 | 0.1 |  | 17.9 | 8.0 | 2.2 | 622.8 |
| Canada ${ }^{\text {a }}$ ． | 4，473．7 | 31，382．0 | 439.1 | 20，359．0 | 230.4 | 416.0 | 10，397．7 | 32，851．2 |
| Central African Republic | 0.1 |  |  |  |  |  |  |  |
| China（Taiwan only） | 52.5 17.5 | 1，736．1 | 599.0 | 4，855．7 | 2.2 | 0.2 | 1，835．3 | 1，331．6 |
| Colombia．．．．．．．．．．．．．．． | 378.9 | $\overline{128.6}$ | －2．4 | $\overline{300.9}$ | － | 二 | $\xrightarrow{4,670.5}$ | ${ }_{8}^{2.2}$ |
| Congo－ |  |  |  |  |  |  |  | 8，076．6 |
| Brazzaville | 3.4 | － | － | － | 0.8 | － | － | 113.5 |
| Cubs | 233.4 | 3，472．3 | 325.4 | － | － | 109.2 | 80.5 |  |
| Cyprus． | － | － | 31.6 | 3.3 | － | － | － | 11.0 |
| Czechoslovakia | － | － |  | 1，099．0 | － | － | 29，081．2 | 165.3 |
| Dominican Repu | － |  | － | 103.6 | － |  | 2 |  |
| Ecuador． | 15.2 | 38.6 | － | － | － | － | － | 425.5 |
| Eritrea． | 5.5 | － | － | － | － | － | － |  |
| Fiji Islands | 83.4 | － | － | 6.6 | － | － | － |  |
| Finland． | 20.6 | 456.5 | － | 203.9 |  |  |  |  |
| France．${ }^{\text {Fren }}$ | 47.6 | 2，594．6 | 二 | 23，851．8 | 20.8 | 17.2 | 57，714．8 | 2，385．4 |
| Gabon．．．．． | $15.9{ }^{7}$ | － | 二 | － | － | － | － |  |
| Germany－ |  |  | － | － | － | － |  | 853.2 |
| Eastern．．．．．．．．．．． | － | －$\overline{181} 5$ | 27.6 | 543.4 | － | － | 2，944．3 |  |
| Federal Republic of．．． | 81.3 | 16，181．5 | 1.9 |  | 54.7 | 96.2 |  | 6，839．8 |
| Ghana ．．．．．．．．．．．．．．．．． |  | 二 | － | 4，879．9 |  | － | 158，308．4 ${ }^{\text {r }}$ | － |
| Greece． | 833.0 | $\bar{\square}$ | － |  |  |  | － |  |
| Greenland | － | 112.5 | 二 | 165.3 | 10.8 | 17.2 |  |  |
| Guatemala | － | 二 | － | 二 | 10.1 | 8.5 | 33.1 |  |
| Honduras．． | 1.71 | $3.2{ }^{1}$ |  |  | 9.5 6.7 | 8．7 |  |  |
| Hong Kong |  |  |  | 73.9 | 6.7 |  |  |  |
| Inungary． | － | $\bar{T}$ | － | 176.4 |  |  | 3，385．2 | 1，606．1 |
| Indonesis | 153.3 | 189.7 | 10.3 | 8，262．9 | 4.6 | 6.1 | 61，801．1 | 576.5 |
| Iran．．． | 二 | 二 | 二 | － | － | － | 605.2 | 23，461．6 |
| Iraq． |  |  |  | 44.1 | 二 | － | 278.9 | 64，409．1 |
| Ireland | － | 二 | 6.5 | 二 | 0.9 | 0.8 |  | 54，013．2 |
| Israel． | － | － |  |  |  |  | 219.4 |  |
| Italy． | 0.7 | 974.2 |  | 643.7 | 52.7 | 142.2 | 816.8 | 2，172．7 |
| Japan． | 378.9 | 12，513．1 | 106.3 | 1，757．1 | 51.0 | 185.5 | 60，058．3 | 2，724．2 |

For footnotes，see end of table，p． 580.

34．－World Production of Certain Metallic Minerals and Fuels，1961－concluded

| Country | Gold | Silver | Copper | Iron | Lead | Zinc | Coal | Crude Petro－ leum |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | ＇000 oz．t． | ＇000 oz．t． | ＇000 tons | ＇000 tons | ＇000 tons | ＇000 tons | ＇000 tons | ＇000 tons |
| Kenya． | 12.3 | － | － | － | － | － | － | － |
| Korea－ |  |  |  |  |  |  |  |  |
| North Republic | 83.6 | $\overline{459.8}$ | 0.4 | $\overline{274.5}$ | 1.0 | 0.4 | $7,716.2$ $6,486.0$ | 二 |
| Kuwait．．． | － | － | － | － | － |  |  | 91，133．6 |
| Kuwait（neutral zone） | － | － | － |  | － |  |  | 10，383．8 |
| Liberia． | 2.1 | － | － | 2，400．8 | － |  |  | － |
| Libya． | － | － | － |  | － | － | － | 754.01 |
| Luxembourg | － | － | － | 2，239．9 | － |  | －2 |  |
| Madagascar．．．．．．． | 11．2 | － | － | 4，$\overline{223} .0$ |  |  | 2.2 | － |
| Mexico．．．．．．．．．．．．．． | 268.7 | 40，349．2 | 54.3 | ${ }^{7} 757.3$ | 199.8 | 296.5 | 1，171．8 | 16，841．1 |
| Mongolia | － | － | － | $\overline{8}$ | － |  | 825.6 |  |
| Morocco． | － | 900.2 | 1.9 | 898.4 | 97.3 | 44.4 | 451.9 | 88.2 |
| Mozambique | 0.1 | － | － | 二 | － |  | 353.8 |  |
| New Caledonia． | 二 | 二 | 二 | 172.0 | － | － | 13， 12.3 | 2，250．3 |
| New Guinea（Australia）． | 41.8 | 32.2 | － |  | － |  | － |  |
| New Zealand． | 28.3 | － | － | 1.1 | － | － | 843.3 | 1.1 |
| Nicaragua． | 224.61 | － | － | － | － |  |  |  |
| Nigeria． | 0.5 | 二 | $\overline{15.1}$ | 1，$\overline{166.2}$ | 2.5 | 10.3 | 669.1 399.0 | 2，538．6 |
| Pakistan | － |  |  | 1.1 | － |  | 1，015．2 | 416.7 |
| Peru． | 133.6 | 33，581．4 | 217.5 | 3，369．8 | 150.8 | 191.7 | 184.1 | 2，855．0 |
| Philippine | 424.0 | 794.1 | 65.8 | 723.1 | 0.1 | 3.6 | 167.6 |  |
| Poland． | － | － | 13.3 | 740.8 | 42.1 | 153.9 | 117，513．0 | 223.8 |
| Portugal． | － | － | 3.3 | 136.7 | － | － | 518.1 |  |
| Qatar．．．．．．．．．．．．．．．． | － | － | － | － | － | － |  | 9，237．4 |
| Rhodesia and Nyasaland， Federation of－ |  |  |  |  |  |  |  |  |
| Northern Rhodesia． | 4.3 | 742.7 | 627.1 | $\bar{\square}$ | 17.0 | 33.4 | － | － |
| Southern Rhodesia． | 570.1 | 106.1 | 15.2 | 248.0 | － | － | 3，387．4 |  |
| Romania． | 4. | － | － | 862.0 | 13.2 | － | 5，403．5 | 12，767．0 |
| Sarawak | 4.1 | － | － | － | 二 |  | － |  |
| Saudi Arabi | － | － | － | － |  |  |  | 76，315．2 |
| Senegal． | － | － | － | 1，220．3 ${ }^{1}$ |  |  | － |  |
| South Afric | 22，941．4 | 2，289．1 | 57.3 | 2，788．8 | 0.1 | － | 43，611．8 |  |
| South West | － | 1，832．6 | 27.6 |  | 69.3 | 21.8 |  | － |
| Spain．． | － |  | 11.1 | 3，265．0 | 91.5 | 97.7 | 15，207．5 |  |
| Sudan． | 1.5 | － | － | － | － | － | － |  |
| Surinam． | 4.0 | 二 | － | － | － | － |  |  |
| Swaziland | 1.3 83.2 | 2，$\overline{826.1}$ | 19.1 | 15，576．8 | 71.0 | 86.9 | 218.3 | － |
| Switzerland |  |  |  | 37.5 | － |  |  | － |
| Tanganyika | 100.1 | － | $0.1{ }^{1}$ | － | 0.41 | － | 2.2 | － |
| Thailand．．． | － | － | － | 40.8 | 2.4 | － | － |  |
| Trinidad and Tobago | － | －70 | 二 |  |  |  | － | 7，200．3 |
| Tunisia．． | － | 70.7 |  |  | 18.5 3.0 | 3.7 9.9 | 4，157．9 | 456.4 |
| Turkey． <br> Uganda． | 0.41 | 二 | 14.8 | 469.6 | 3.0 | 9.9 | 4，157．9 | 48.4 |
| Union of Soviet Socialist Republics． | － | － | － | 75，442．2 | － | － | 415，592．2 | 183，058．6 |
| United Arab Republic．．． |  |  |  | 232.6 |  |  |  | 4， 209.7 |
| United States．．．．．．．．．．． | 1，566．8 | 34，899．6 | 1，165．1 | 43，181．9 | 261.9 | 464.4 | 417， 405.5 | 390，552．1 |
| Venezuela． | 30.1 | － | － | 10，275．7 | － | － | 34.2 | 171，837．1 |
| Viet Nam－ |  |  |  |  |  |  |  |  |
| North．．．．． | － | － | － |  |  |  | $3,098.6$ 62.8 |  |
| West New Guine |  | － |  |  |  |  | 62.8 | 187.1 |
| Yugoslavia．．．．．．．． | 67.9 | 3，453．0 | 41.8 | 841.1 | 106.6 | 66.0 | 1，447．3 | 1，478．2 |

${ }^{1}$ Exports．$\quad 2$ Excludes Northern Ireland．$\quad{ }^{3}$ Final DBS figures．$\quad{ }^{4}$ Exports to United States．

# CHAPTER XII.-POWER GENERATION AND UTILIZATION 

## CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing $p .1$ of this volume.

## Section 1.-Water Power Resources-Available and Developed

Canada, a land of many large lakes and fast-flowing rivers, is richly endowed with immense water power resources. With the exception of the prairies of the mid-west, these resources are found in considerable magnitude in almost every part of the country.

British Columbia, traversed by three distinct mountain ranges and with, generally speaking, a high rate of precipitation, has many mountain rivers which offer abundant opportunity for the development of hydro-electric power. Notable for 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 part of British Columbia have supplied the province's major load requirements. The immense power resources of the larger rivers have gone unused, chiefly because of remoteness from present demand areas or because of conflicts of interest between fisheries and power development. The water power resources of British Columbia, in total magnitude the second greatest in Canada, have played and will continue to play a very important part in the development of the province.

Important water power sites await development on the Yukon River in the Yukon Territory and on the South Nahanni River in the Northwest Territories. Indications are that the rivers draining the District of Keewatin, north of Manitoba, will also contribute materially to the total power potential of the Northwest Territories. In view of the lack of developed native fuel sources and difficulties in transportation, water power is of special importance in the development of mining areas such as those at Yellowknife in the Northwest Territories and at Mayo in the Yukon Territory.

Of the three Prairie Provinces, Manitoba has the greatest water power potential. For many years, the more heavily populated southern region of the province has been supplied from hydro-electric developments on the Winnipeg River. With the advent of high-voltage, long-distance transmission, however, power from hydro-electric stations on northern rivers will flow south to help meet the constantly growing demands of industrial, urban and rural users. In both Alberta and Saskatchewan, abundant reserves of coal, oil and natural gas are used to fuel the thermal-electric plants which satisfy much of the demand for power in these provinces. In Alberta, the principal existing hydro-electric developments are located on the Bow River and its tributaries, but there are substantial
power resources in northern regions of the province, too remote from urban centres to warrant development at the present time. In Saskatchewan, existing hydro-electric plants are located in northern areas and their output is used almost exclusively for mining purposes. Water power sites of considerable importance remain to be developed in the central and northern parts of the province. Thermal-electric power feeding the transmission network serving the more settled areas will be augmented in 1963 by hydroelectric power from new developments on the Saskatchewan River.

The pace of industrial expansion in Ontario since the turn of the present century has made heavy demands on the province's substantial water power potential, to the extent that hydro-electric installed capacity in Ontario is exceeded in total magnitude only by that of Quebec. The largest hydro-electric development in the province is located on the Niagara River at Queenston, where the Sir Adam Beck-Niagara Generating Stations Nos. 1 and 2 and the associated pumping-generating station have a combined capacity of $2,521,000 \mathrm{hp}$. Completion of development of most of Ontario's water power sites located within economic reach of demand areas has led, within the past few years, to an increasing dependence upon electric energy generated in thermal plants. An important contributing factor is the growing recognition of the benefits offered by integrating the operation of hydro and thermal plants. Despite this growing emphasis on thermal power, development of a number of the province's more remote hydro sites is now considered economically feasible, largely as a result of recent marked advances in extra-high-voltage, long-distance transmission techniques. Several of these sites are under construction.

With more than 30 p.c. of the national recorded total, Quebec's water power resources are the most extensive in the country. Quebec leads the other provinces also in terms of installed turbine capacity with a total installation of $12,816,845 \mathrm{hp}$.-more than 47 p.c. of the total for all of Canada. The greatest concentration of hydro-electric capacity in one plant in Canada is installed in the $2,145,000-\mathrm{hp}$. Beauharnois development on the St. Lawrence River. Notable also are the Bersimis I development on the Bersimis River and the Shipshaw plant on the Saguenay River, each with an installed capacity of $1,200,000$ hp. A major power scheme involving the harnessing of the headwaters of the Manicouagan and Outardes Rivers is under construction. The completed project will make available nearly $6,000,000 \mathrm{hp}$. of additional capacity at new and existing developments on the two rivers.

The water power resources of New Brunswick and Nova Scotia, although small in comparison with those of other provinces, are a valuable source of energy. Numerous rivers in both provinces provide moderate-sized power sites advantageously situated for urban or rural use. In Prince Edward Island, there are no large streams and, consequently, water power plants are limited in size to those used for small mills. Topography and runoff conditions on the Island of Newfoundland are favourable for the development of power, even though river drainage areas are generally not large. Considerable power development has taken place on the Island, mainly to serve the pulp and paper industry. Labrador has what is considered to be one of the largest sources of water power in Canada in the Hamilton River and its tributaries.

An accurate comparison of the magnitude and state of development of Canada's water power resources with those of other countries is not possible because world statistics are incomplete and are not tabulated on the same basis. Available information would indicate, however, that Canada is exceeded only by the United States in the total amount of hydraulic turbine capacity actually installed. In terms of installed water power capacity per thousand population, Canada is second only to Norway. It is interesting to note that, with the exception of those of the United States, Canada's water power resources, fifth in order of magnitude, are more readily available to prospective markets than is the case in any of the countries that have greater power potential.

Table 1 gives, by province or territory, the estimated total water power resources of Canada and the total existing capacity of all water power plants.
1.-Available and Developed Water Power, by Province, as at Jan. 1, 1963

| Province or Territory | Available 24-Hour Power at 80 p.c. Efficiency |  | Turbine Installation |
| :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { At Ordinary } \\ \text { Minimum } \\ \text { Flow } \end{gathered}$ | At Ordinary Six-Month Flow |  |
|  | hp. | hp. | hp. |
| Newfoundland | 1,608,000 | 3,264,000 | 504,025 |
| Prince Edward Island. | , 500 | 3,000 | 1,660 |
| Nova Scotia.... | 30,500 | 177,000 | 204,538 |
| New Brunswick | 123,000 | 3334,000 | 309,726 |
| Quebec.. | 12,557,000 | 23,711,000 | 12,816,845 |
| Ontario... | 5,496,000 | 7,701,000 | 7,959,512 |
| Manitoba..... | 4,758,000 | 8,454,000 | 988,900 |
| Saskatchewan. | 552,000 | 1,131,000 | 142,135 |
| Alberta | 911,000 | 2,453,000 | -414,455 |
| British Columbia. | 18,200, $000{ }^{1}$ | 19,400, $000{ }^{1}$ | 3,701,326 |
| Yukon Territory....... | $4,678,000^{1}$ $1,367,0001$ | $4,700,000^{1}$ $1,795,000^{1}$ | - 38,190 |
| Northwest Territories. | 1,367,0001 | 1,795,000 ${ }^{1}$ | 22,250 |
| Canada.. | 50,281,000 | 73,123,000 | 27,103,562 |

${ }^{1}$ Reflects the effect of possible stream-flow regulation based on known storage potentials.
The figures in the first and second columns of Table 1 represent continuous 24-hour power based on available data on stream flow and hydraulic head at individual sites. The hydraulic head used is the feasible concentration of head, which has been measured or at least estimated at existing falls, rapids and known power sites. No consideration has been given to possible economic concentrations of head on rivers and streams of gradual gradient, except at those locations where the available head has been definitely established by field investigations.

It should be emphasized that the figures of available power represent only the minimum water power possibilities of Canada. Many unrecorded power sites exist on rivers and streams throughout the country, particularly in the less-explored northerly districts. As power surveys are extended, detailed information on new sites will become available and, undoubtedly, substantial additions to present figures of available power will result. With the exception of British Columbia, Yukon Territory and the Northwest Territories, estimates of available power are based upon existing river flows and do not take into account the benefits of stream-flow regulation that would result from the development of storage potential. In addition, the figures of available power do not include the power potential of major river diversions that have been investigated but not developed.

The figures in the third column of Table 1 are the totals of plant capacities based upon the manufacturer's rating as indicated on the name-plate of each unit. In a few cases where, subsequent to installation of the unit, a change in the normal operating head has been effected, a rating based on the new normal operating head is used. The maximum economic turbine installation at any power site can be determined only by careful consideration of all the conditions and circumstances pertinent to its individual development. It is the usual practice, however, to install turbines with a total capacity in excess of the power equivalent of the ordinary six-month flow at the site. This additional capacity may be installed for use at peak-load hours or to facilitate plant or system maintenance, or to take advantage of high river flow.

The extent to which the installed capacity exceeds the power equivalent of the ordinary six-month flow depends upon the factors that govern the system of power-plant operation, and varies widely in different parts of the country. In some developments, the difference
may amount to as much as several hundred per cent. For this reason, the figures in the third column of Table 1 are not directly comparable with those in column two. For the same reason, it is not feasible to forecast future capacity installation on the basis of estimates of available water power.

The steady growth of hydraulic turbine capacity is shown in Table 2. The average annual growth of $56,000 \mathrm{hp}$. in the period $1900-05$ increased sharply to about $150,000 \mathrm{hp}$. per annum in the 1906-22 period, largely as a result of improvements in electric power transmission and of the construction of large hydro-electric stations. Because of the heavier demand for electricity during the prosperous 1920's, the rate of installation increased appreciably in 1923 and continued at a nearly uniform rate of $377,000 \mathrm{hp}$. per annum until 1935. Conditions resulting from the economic depression of the early 1930's were responsible for a decrease in construction starts and the comparatively low rate of installation during the period 1936-39. The wartime demand for power accelerated the installation rate to an average of $481,000 \mathrm{hp}$. per annum for the period $1940-43$. Few new developments were started in the later war years or in the immediate postwar period so that from 1944 to 1947 only a small amount of new capacity came into operation. However, the program of construction of hydro-electric power plants gained momentum soon after the War and the results are apparent in the substantial growth in new capacity brought into service during the period 1948-60, when the average annual rate of installation exceeded $1,200,000 \mathrm{hp}$. In sharp contrast to this high average rate are the comparatively moderate net totals of $294,650 \mathrm{hp} .{ }^{*}$ and $415,468 \mathrm{hp}$. of new capacity put into service in 1961 and 1962, respectively. A return to the former high rate of installation can be expected in 1963, however, when a number of new hydro-electric projects will be completed.

The availability of large amounts of low-cost hydro-electric energy has been an essential factor in the development of Canadian industry. Power from hydro-electric plants ranging in capacity from a few hundred horsepower to more than a million horsepower is carried via transmission line networks to urban centres and rural districts. The ability to transmit power over relatively long distances has facilitated the decentralization of industry and has enabled manufacturers to carry on operations in many of the smaller centres of population.

* Does not reflect an increase of $60,000 \mathrm{hp}$. brought about by the re-rating of an existing plant in Quebec.


## 2.-Hydraulic Turbine Horsepower Installed, by Province, as at Dec. 31, Decennially 1900-50 and Annually 1951-62

Note.-Figures for the years 1900-30 are given in the 1939 Year Book, p. 362; for 1931-39 in the 1946 edition, p. 362 ; and for 1940-49 in the 1954 edition, pp. 556-557.

| Year | Newfoundland | Prince Edward Island | Nova Scotia | New <br> Brunswick | Quebec | Ontario |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | hp . | hp . | hp. | hp. | hp. | hp. |
| 1900. | - | 1,521 | 19,810 | 4,601 |  | 53,876 |
| 1910. |  | 1,760 | 31,476 | 11,197 | 334,763 | 490,821 |
| 1920. | 二 | 2,233 | 37,623 | 21,976 | 955,090 | 1,057,422 |
| 1930. |  | 2,439 | 114,224 | 133,681 | 2,718,130 | 2,088,055 |
| 1940. |  | 2,617 | 139,217 | 133,347 133,111 | $4,320,943$ $6,372,812$ | $2,597,595$ $3,513,840$ |
| 1950. | 262,810 | 2,299 | 150,960 | 133,111 | 6,372,812 | 3,513,840 |
| 1951. | 279,160 | 2,299 | 150,960 | 132,911 | 6,755,351 | 3,718,505 |
| 1952. | 292,660 | 2,299 | 162,455 | 135,511 | 7,263, 621 | 3,948,466 |
| 1953. | 311,150 | 1,900 | 162,433 | 164,130 | 7,719,122 | 4,006,686 |
| 1954. | 323,150 | 1,882 | 170,908 | 164,130 | 7,773,822 | 4,845,486 |
| 1955. | 329,150 | 1,882 | 177,018 | 164,130 | 7,975,657 | 5,367,866 |
| 1956. | 336,750 | 1,882 | 179,718 | 164,130 | 8,489,957 | 5,443,766 |
| 1957. | 337,970 | 1,882 | 181,958 | 209,130 | 8, 979, 857 |  |
| 1958. | 368,935 | 1,660 | 183,168 | 254,375 | 9,857,607 | 7,150,851 |
| 1959. | 370,925 | 1,660 | 184,538 184,538 | ${ }_{254}^{254,258}$ | $11,263,645$ $12,440,145$ | 7,788,062 |
| 1960. | 384,025 | 1,660 | 184,538 | 254,258 | 12,440,145 | 7,814,562 |
| 1961. | 384,025 | 1,660 | 204,538 | 254,258 | 12, 576, 845 | 7,959,512 |
| 1962. | 504,025 | 1,660 | 204,538 | 309, 726 | 12,816,845 | 7,959,512 |

2.-Hydraulic Turbine Horsepower Installed, by Province, as at Dec. 31, Decennially 1900-50 and Annually 1951-62-concluded

| Year | Manitoba | Saskatchewan | Alberta | British Columbia | $\begin{gathered} \text { Yukon } \\ \text { and } \\ \text { N.W.T. } \end{gathered}$ | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | hp. | hp. | hp. | hp. | hp. | hp. |
| 1900. | 1,000 | - 30 | 280 | 9,366 |  | 173,323 |
| 1910. | 38,800 | 30 | ${ }^{6} 655$ | 64,474 | 3,195 | 977,171 |
| 1920. | 85,325 | 35 | 33,122 | 309,534 | 13,199 | 2,515,559 |
| 1930. | 311,925 | 42,035 | 70,532 | 630,792 | 13,199 | 6,125, 012 |
| 1940. | 420,925 | 90,835 | 71,997 | 788,763 | 18,199 | 8,584,438 |
| 1950. | 595,200 | 111,835 | 107,225 | 1,284,208 | 28,450 | 12,562,750 |
| 1951. | 596,400 | 111,835 | 207,825 | 1,358,808 | 28,450 | 13,342,504 |
| 1952. | 716,900 | 111,835 | 207,825 | 1,432, 858 | 31,450 | 14,305, 880 |
| 1953. | 716,900 | 109,835 | 207, 960 | 1,496,518 | 32,440 | 14,929, 074 |
| 1954. | 756,900 | 109,835 | 258,710 | 2,246,868 | 32,440 | 16,684,131 |
| 1955. | 796,900 | 109,835 | 284,010 | 2,271,460 | 33,240 | 17,511,148 |
| 1956. | 796,900 | 109,835 | 285,010 | 2,514,960 | 33,240 | 18,356,148 |
| 1957. | 778,900 | 109,835 | 308,010 | 3,122,460 | 36,240 | 19, 891, 008 |
| 1958. | 778,900 | 109,835 | 312,595 | 3,310,460 | 51,240 | 22,379,626 |
| 1959. | 778,900 | 128,835 | 312,455 | 3,499,106 | 51,240 | 24,633,624 |
| 1960. | 946,900 | 132,135 | 414,455 | 3,700,326 | 60,440 | 26,333,444 |
| 1961. | 988,900 | 142,135 | 414,455 | 3,701,326 | 60,440 | 26,688,094 |
| 1962. | 988,900 | 142,135 | 414,455 | 3,701,326 | 60,440 | 27, 103,562 |

Table 3 indicates the respective amounts of water power developed by utilities and by industrial establishments. For the purposes of this tabulation, utilities are defined as companies, municipalities or individuals who sell most of the power they develop. In some cases, they include also certain subsidiary companies whose main purpose is to develop and sell power to a parent company for industrial purposes. The total of $21,012,661 \mathrm{hp}$. of turbine capacity installed in plants operated by utilities on Jan. 1, 1963 represented 78 p.c. of Canada's total installed capacity.

Industries are defined as companies or individuals who develop power mainly for their own use. The total installed capacity of plants operated by industrial establishments on Jan. 1, 1963 was $6,090,901 \mathrm{hp}$. In addition to the power generated in their own plants, industries purchase a considerable amount from utilities.

The total hydraulic installation at the beginning of $1963(27,103,562 \mathrm{hp}$.) is the total of all existing installations of water wheels and hydraulic turbines in Canada.
3.-Installed Water Power Capacity, by Province, as at Jan. 1, 1963

| Province or Territory | Turbine Installation |  | Total |
| :---: | :---: | :---: | :---: |
|  | Utilities ${ }^{1}$ | Industries ${ }^{2}$ |  |
|  | hp. | hp . | hp. |
| Newfoundland........ | 390,305 | 113,720 | 504,025 |
| Prince Edward Island. | , 240 | 1,420 | 1,660 |
| Nova Scotia.... | 189,345 283,408 | 15,193 26,318 | 204,538 309,726 |
| Quebec.......... | 9,159,678 | 3,657,167 | 12,816,845 |
| Ontario... | 7,516,110 | - 443,402 | 7,959,512 |
| Manitoba..... | 973,000 | 15,900 | 988,900 |
| Alberta....... | 125,500 413,390 | 16,635 1,065 | 142,135 414,455 |
| British Columbia. | 1,920,945 | 1,780,381 | 3,701,326 |
| Yukon and Northwest Territories | 40,740 | 19,700 | 60,440 |
| Canada | 21,012,661 | 6,090,901 | 27,103,562 |
| Percentage of total installation. | 78 | 22 | 100 |

[^168]
## Section 2.-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 1950. The annual rate of increase was 8.2 p.c. in the eleven-year period 1951-62 and 6.4 p.c. in the period 1958-62. In comparison, the forecast rate of growth for the years $1963-66$ is only 4.8 p.c.; thermal generating capability is expected to grow at the average rate of 9.8 p.c. a year in the forecast period compared with 15.7 p.c. in the period 1951-62, but hydro-electric capability is expected to increase at only 3.5 p.c. a year compared with 6.8 p.c. in the 1951-62 period.

Among the provinces, Quebec has the largest generating capability, followed by Ontario, British Columbia and Alberta. Quebec also has the largest hydro-electric generating 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 for 1965.

The largest absolute growth in generating capability for the forecast years is indicated for Ontario, amounting to $1,985,000 \mathrm{kw}$., followed by Quebec $1,427,000 \mathrm{kw}$., Alberta $498,000 \mathrm{kw}$., and British Columbia $379,000 \mathrm{kw}$. Quebec will meet most of its increased generating capability by adding over $1,127,000 \mathrm{kw}$. in hydro capability and $300,000 \mathrm{kw}$. in thermal capability. Ontario will add $1,478,000 \mathrm{kw}$. thermal, including $200,000 \mathrm{kw}$. nuclear, and $508,000 \mathrm{kw}$. hydro, and Alberta will add $300,000 \mathrm{kw}$. hydro and $228,000 \mathrm{kw}$. 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 7.0 p.c. a year from 1951 to 1962 but only 5.0 p.c. a year from 1958 to 1962; peak load demand is forecast to increase at the average rate of 6.5 p.c. a year in the period 1962-66. 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 1951 to 1962, with the exception of 1961. The forecast is for increases in 1963 and 1964 and declines in 1965 and 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 18.8 p.c. in 1966 , approximately the same as in 1958.
${ }^{*}$ Prepared by the Public Utilities Section, Public Finance and Transportation Division, Dominion Bureau of Statistics.
4.-Net Generating Capability, by Province, 1962
(Thousand kilowatts)

| Type of Generating Facility | Nfld. | P.E.I. | N.S. | N.B. | Que. | Ont. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Hydro-electric. | 350 | - | 141 | 233 | 8,830 | 5,285 |
| Thermal-electric- |  |  |  |  |  |  |
| Steam............ | 45 14 | 32 5 | 378 2 | 240 7 | 12 | ${ }^{1,92}$ |
| Gas turbine......... | 14 | $\underline{-}$ | 2 | 7 | 36 |  |
| Totals. | 409 | 37 | 521 | 480 | 8,919 | 7,223 |

4.-Net Generating Capability, by Province, 1962-concluded

| Type of Generating Facility | Man. | Sask. | Alta. | B.C. | $\begin{gathered} \text { Yukon } \\ \text { and } \\ \text { N.W.T. } \end{gathered}$ | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Hydro-electric.... | 735 | 107 | 327 | 2,599 | 44 | 18,651 |
| Thermalelectric- Steam........ | 291 | 575 | 643 | 424 | 1 | 4,596 |
| Internal combustion | 7 | 37 | 33 | 112 | 10 | , 251 |
| Gas turbine. | , | 33 | 130 | 172 | - | 371 |
| Totals. | 1,033 | 752 | 1,133 | 3,307 | 55 | 23,869 |

5.-Capability and Firm Power Peak Load Requirements, Actual 1951 and 1956-62 and Forecast 1963-66
(Thousand kilowatts)

| Item | Actual |  |  |  |  |  |  |  | Forecast |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1951 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 |
| Net Generating <br> Capability- |  |  |  |  |  |  |  |  |  |  |  |  |
| Steam-Conventional | $\begin{aligned} & 9,044 \\ & 1,032 \end{aligned}$ | 12,8412,142 | $\left\|\begin{array}{c} 14,143 \\ 2,326 \end{array}\right\|$ | $\left\{\begin{array}{c} 15,912 \\ 2,716 \end{array}\right.$ | $\left\{\begin{array}{l} 17,086 \\ 3,119 \end{array}\right.$ | $\left\|\begin{array}{r} 18,516 \\ 3,824 \end{array}\right\|$ | $\left\{\begin{array}{r}18,389 \\ 3,648 \\ \hline 240 \\ 351\end{array}\right.$ | 18,651 <br> 4,596 <br> 251 <br> 371 | $\begin{array}{r} 19,497 \\ 5,377 \end{array}$ | 20,184 5,993 | 6,268 | 21,441 6,728 |
| Nuclear............. |  |  |  |  |  |  |  |  |  | - | , 200 | 200 |
| Internal combustion. . . . . . . . . Gas turbine. |  |  |  |  |  |  |  |  | 248 376 | 255 379 | 258 379 | 262 397 |
| Totals, Net Generating Capability. | 10,076 | 14,983 | 16,469 | 18,628 | 20,205 | 22,340 | 22,628 | 23,869 | 25,498 | 26,811 | 28,042 | 29,028 |
| Receipts of firm power from United States. <br> Deliveries of firm power to <br> United States.. | $\begin{gathered} - \\ 175 \end{gathered}$ | 56147 | $-$ | $152$ |  |  | $\begin{array}{r} 2 \\ 146 \end{array}$ | $\begin{array}{r} 4 \\ 121 \end{array}$ |  |  |  | 456 |
|  |  |  |  |  | - | - 166 |  |  |  |  |  |  |
| Totals, Net Capability. . | 9,901 | 14,892 | 16,319 | 18,476 | 20,053 | 22,174 | 22,484 | 23,752 | 25,384 | 26,746 | 27,976 | 28,976 |
| ak Loads | 8,989321 | 13,668 | $\left\|\begin{array}{r} 14,664 \\ 2 \end{array}\right\|$ | $15,568$ | 16,201 | 17,264 | 18,353 | 18,972 | 20,377 | $21,656$ | $\begin{array}{r} 22,988 \\ 1 \end{array}$ | $\begin{array}{r} 24,446 \\ 4 \end{array}$ |
| Canada. |  |  |  |  |  |  |  |  |  |  |  |  |
| Indicated shortages. |  |  |  |  |  |  |  |  |  |  |  |  |
| Totals, Indicated Peak Load within Canada. | 9,310 | 13,715 | 14,666 | 15,568 | 16,201 | 17,264 | 18,353 | 18,972 | 20,377 | 21,656 | 22,989 | 24,450 |
| Indicated Rese | 591 | 1,177 | 1,653 | 2,908 | 3,852 | 4,910 | 4,131 | 4,780 | 5,007 | 5,090 | 4,987 | 4,526 |

## Section 3.-Electric Power Statistics

Electric power statistics 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 1945-55 shown in Table 6 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.

## 6.-Electric Energy Generated, by Type of Station 1945-61, and by Province 1960 and 1961

| Year and Province or Territory | Generated by- |  | Total | Year and Province or Territory | Generated by- |  | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Water Power | Thermal Power |  |  | Water Power | Thermal Power |  |
|  | '000 kwh. | '000 kwh. | ' 000 kwh . |  | '000 kwh. | '000 kwh. | '000 kwh. |
| 1945. | 39,131,020 | 999,034 | 40,130, 054 | 1954 | 62,572,316 | 3,364,124 | 65,936,440 |
| 1946 | 40,692,395 | 1,044,592 | 41,736,987 | 1955 | 69,478,003 | 3,432,589 | 72,910,592 |
| 1947 | 42,273,167 | 1,151,632 | 42,424,799 | 1956 | 73,524,583 | 4,479,770 | 78,004,353 |
| 1948 | 41,070,095 | 1,319,586 | 42,389, 681 | 19561 | 81, 839, 968 | 6,543,333 | 88,383,301 |
| $19+9$ | 42,779,199 | 1,639,374 | 44, 418,573 | 1957 | 82, 373,220 | 7,668,860 | 91,042,080 |
| 1950 | 46,624,218 | 1,869,500 | 48,493,718 | 1958 | 90,509,200 | 6,975,089 | 97,484,289 |
| 1951 | 52,955,002 | 1,896,842 | 54, 851,844 | 1959 | 97,039,830 | 7,588,653 | 104, 628,483 |
| 1952 | 57,023,530 | 2,385,668 | 59,409,198 | 1960 | 105,882,773 | 8,495,160 | 114,377,933 |
| 1953. | 58,926,462 | 3,934,465 | 62,860,927 | 1961 | 103,919,241 | 9,794,077 | 113,713,318 |
| 1960 |  |  |  | 1961 |  |  |  |
| Nfld. | 1,424,677 | 86,882 | 1,511,559 | Nfld............. | 1,320,552 | 137,008 | 1,457,560 |
| P.E.I. | , 415 | 79,037 | 79,452 | P.E.I. |  | 88,150 | 88,557 |
| N.S. | 655,164 | 1,158,769 | 1,813,933 | N.S. | 544,010 | 1,317,123 | 1,861,133 |
| N.B. | 816,105 | 922,273 | 1,738,378 | N.B. | 1,020,737 | 891,400 | 1,912,137 |
| Que. | 50,109,271 | 323,630 | 50,432,901 | Que. | 49,547,805 | 307,790 | 49,855,595 |
| Ont. | 34,948,511 | 866,553 | 35, 815,064 | Ont. | 33,737, 126 | 1,216,464 | 34, 953,590 |
| Man. | 3,659,920 | 81,991 | 3,741,911 | Man | 3,589,242 | 257,367 | 3,846,609 |
| Sask | 621,829 | 1,581,996 | 2,203,825 | Sask | 659,971 | 1, 885, 133 | 2,545, 104 |
| Alta | 886,595 | 2,556,813 | 3,443,408 | Alta | 1,017,731 | 2,752,745 | 3,770,476 |
| B.C. | 12,600,494 | 807,889 | 13,408,383 |  | 12,299,630 | 904,823 | 13,204,453 |
| Yukon and N.W.T. | 159,792 | 29,327 | 189,119 | $\begin{aligned} & \text { Yukon and } \\ & \text { N.W.T.. } \end{aligned}$ | 182,030 | 36,074 | 218,104 |
| Canada, 1960. | 105,882,773 | 8,495,160 | 114,377,933 | Canada, 1961. . | 103,919,241 | 9,794,077 | 113,713,318 |

${ }^{1}$ New series, see immediately preceding text.
Of the total generation in 1961 of $113,713,318,000 \mathrm{kwh} ., 91.4$ p.c. was produced from water power and 8.6 p.c. was generated thermally; the proportions differed somewhat among provinces as shown in the following statement.

| Province | Hydro | Thermal | Province or Territory | Hydro | Thermal |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | p.c. | p.c. |  | p.c. | p.c. |
| Newfoundland | 90.6 | 9.4 | Manitoba. | 93.3 | 6.7 |
| Prince Edward Island | 0.5 | 99.5 | Saskatchewan | 25.9 | 74.1 |
| Nova Scotia... | 29.2 53.4 | 70.8 46.6 | Alberta....... | 27.0 | 73.0 |
| New Brunswick | 59.4 | 40.6 0.6 | British Columbia. | 93.1 | 6.9 |
| Ontario............ | 96.5 | 3.5 | Yukon and N.W.T. | 83.5 | 16.5 |

Table 7 gives summary figures of power production and distribution classified by province, and Tables 8 and 9 give figures classified by type of production establishment. Total installed capacity in Canada amounted to $24,091,368 \mathrm{kw}$. in 1961, an increase of $1,056,366 \mathrm{kw}$. over 1960 . Of the 1961 total, $15,180,154 \mathrm{kw}$. were accounted for by utilities and the remainder by industrial establishments. During 1960 and 1961 total sales to ultimate customers amounted to $76,829,969,000 \mathrm{kwh}$. and $79,874,233,000 \mathrm{kwh}$., respectively, of which 99.7 p.c. was sold each year by utilities.

Sales to power customers made up 61.1 p.c. of the total in 1960 and 60.7 p.c. in 1961, sales to domestic and farm customers were 26.5 p.c. and 27.5 p.c., and commercial sales 11.5 p.c. and 10.9 p.c. in the respective years. Exports to the United States in 1961 amounted to $4,139,686,000 \mathrm{kwh}$. compared with $5,495,572,000 \mathrm{kwh}$. in 1960.

## 7.-Summary Electric Power Statistics, by Province, 1960 and 1961

| Year and Province or Territory | Installed Generating Capacity | Energy Made Available in Canada | $\begin{aligned} & \text { Exported } \\ & \text { to } \\ & \text { U.S.A. } \end{aligned}$ | Ultimate Customers | Total <br> Revenue from Ultimate Customers | Electric Utilities |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | Employees | Salaries and <br> Wages |
|  | kw. | '000 kwh. | '000 kwh. | No. | \$'000 | No. | \$'000 |
| 1960 |  |  |  |  |  |  |  |
| Newfoundland. ........ | 313,694 | 1,426,845 | - | 67,152 | 10,722 | 602 | 2,000 |
| Prince Edward Island.. | 37, 360 | 79,452 |  | 22,002 | 2,544 | 172 | 621 |
| Nova Scotia... | 506,865 | 1,733,333 |  | 197,021 | 28,753 | 1,603 | 6,256 |
| New Brunswick | 401,737 | 1,683,905 | 165,109 | 150,592 | 21,517 | 1,124 | 4,317 |
| Quebec. | 8,920,347 | 44,002,303 | 569,074 | 1,393,973 | 215,020 | 10,133 | 45,203 |
| Ontario. | 7,108,600 | 37, 157,107 | 4,759,717 | 1,951,686 | 305,648 | 18,312 | 86,033 |
| Manitoba. | 1,042,617 | 4,465,619 | 34 | 287,257 | 36,213 | 2,599 | 11,395 |
| Saskatchewan | 761,291 | 1,600,288 | - | 255,825 | 34,861 | 2,313 | 11,137 |
| Alberta. | 915,281 | 3,475,306 | - | 355,707 | 52,645 | 1,749 | 8,994 |
| British Columbia. | 2,963,117 | 13,425,962 | 1,638 | 501,947 | 93,922 | 2,267 | 13,196 |
| Yukon and N.W.T | 64,093 | 189,119 |  | 5,090 | 3,491 | 185 | 947 |
| Canada, 1960. | 23,035,002 | 109,239,239 | 5,495,572 | 5,188,252 | 805,336 | 41,059 | 190,099 |
| 1961 |  |  |  |  |  |  |  |
| Newfoundland. | 322,237 | 1,382,336 | - | 70,750 | 11,264 | 600 | 2,297 |
| Prince Edward Island. . | 37,396 | 88,557 | - | 23,541 | 2,812 | 177 | 675 |
| Nova Scotia... | 520,248 | 1,776,692 | - | 204,611 | 30,774 | 1,567 | 6,530 |
| New Brunswick | 441,700 | 1,824,504 | 204,863 | 156,210 | 23,304 | 1,244 | 4,689 |
| Quebec. | 9,138, 934 | 43,767,356 | 406,814 | 1,455, 449 | 228,046 | 10,365 | 48,879 |
| Ontario.. | 7,760,761 | 38, 276, 736 | 3,526,310 | 2,012,198 | 321, 201 | 16,170 | 87,257 |
| Manitoba.. | 1,087,959 | 4,748, 369 | 38 | 300, 234 | 40,872 | 2,520 | 11,700 |
| Saskatchewan | 785,287 | 1,894,034 | - | 265,091 | 39,146 | 2,450 | 11,924 |
| Alberta....... | 931,529 | 3,794,730 |  | 367,941 | 57,470 | 1,737 | 9,099 |
| British Columbia...... | 3,000,011 | 13,180, 221 | 1,661 | 513,734 | 100,033 | 2,335 | 14,111 |
| Yukon and N.W.T. | 65,306 | 218,104 | - | 5,686 | 3,956 | 224 | 1,255 |
| Canada, 1961. | 24,091,368 | 110,951,639 | 4,139,686 | 5,375,445 | 858,878 | 39,389 | 198,416 |

8.-Summary Electric Power Statistics, by Type of Establishment, 1960 and 1961

| Year and Item | Electrical Utilities |  |  | Industrial Establishments | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Publicly <br> Operated | Privately Operated | Total |  |  |
| 1960 |  |  |  |  |  |
| Installed generator capacity.......... . kw . | 12,532,652 | 5,886,097 | 18,418,749 | 4,616, 253 | 23,035,002 |
| Energy generated...................... ' 000 kwh . | 57,850, 106 | 31, 227,034 | 89,077, 140 | 25,300,793 | 114,377, 933 |
| Hydro............................. ${ }_{\text {Thermal....... }}$ |  | 28,962,784 | 83,202, 548 | 22,680,225 | 105, 882, 778 |
| Thermal............................... " | S,610, 348 | 2,264,250 | 5,874,592 | 2,620,568 | 8,495,160 |
| Energy Made Available in Canada . . .'000 kwh. | .. | .. | .. | .. | 109,239,239 |
| Disposal of energy in Canada. ......... ' 000 kwh . | 54, 217, 662 | 31,945,958 | 86,163,620 | 214,464 | 86, 378,084 |
| Energy exported to United States...... " | 4,920,977 | 461,853 | 5,382,830 | 112,742 | 5,495, 572 |
| Ulimate customers in Canada......... No. | 3,627, 288 | 1,550,761 | 5,178, 049 | 10, 203 | 5,188, 252 |
| Comestic and farm................... | 3,192,449 | 1,340,901 | 4,533, 350 | 9,430 | 4,542,780 |
| Power. | -66,752 | 168,882 38,595 | 105,347 | 46 48 | 534,696 105,393 |
| Street lighting | 2,981 | 2,983 | 5,364 | 19 | 5,389 |
| Revenue from ultimate customers...... \$'000 |  |  | 803,446 | 1,890 | 805,336 |
| Revenue from exports to United States. "\% | 11,318 | 2, 370 | 13,688 | 663 | 14,351 |
|  | 10,559 140,878 | 10,500 49,221 | 41,059 190,099 | $\cdots$ | $\ldots$ |

8.-Summary Electric Power Statistics, by Type of Establishment, 1960 and 1961-concluded

| Year and Item | Electrical Utilities |  |  | Industrial Establishments | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Publicly Operated | Privately Operated | Total |  |  |
| 1961 |  |  |  |  |  |
| Installed generator capacity........... kw. | 9,976,758 | 5,203,396 | 15,180, 154 | 3,838, 653 | 19, 018, 807 |
| Energy generated....................... . '000 kwh. | 59,739,877 | 29,648,758 | 89, 388, 635 | 24,324, 683 | 113,713, 318 |
| Hydro................................ | 55,170,410 | 27,155,454 | 82, 325,864 | 21,593, 377 | 108,919,241 |
| Thermal. . . . . . . . . . . . . . . . . . . . . . . . | 4,569,467 | 2,493,304 | 7,062,771 | 2,731,306 | 9,794,077 |
| Energy Made Available in Canada... '000 kwh. | . | . | . | . | 110,951,639 |
| Disposal of energy in Canada. . . . . . . . '000 kwh. | 56,677, 025 | 31,576,592 | 88, 253, 617 | 305,985 | 88,559,602 |
| Energy exported to United States...... "* | 3,481,345 | 543,103 | 4,024,448 | 115,238 | 4,139,686 |
| Ultimate customers in Canada......... No. | 3,770,691 | 1,595,051 | 5,365,742 | 9,703 | 5,375,445 |
| Domestic and farm................... " | 3, 325,923 | 1,381,964 | 4,707,887 | 8,932 | 4,716,819 |
| Commercial.......................... | 371,664 | 175,734 | 547, 398 | 718 | 548,111 |
| Power | 69,489 | 34,810 | 104,299 | 34 | 104,383 |
| Street lighting....... . . . . . . . . . . . . . . | 3,615 | 2,543 | 6,158 | 24 | 6,182 |
| Revenue from ultimate customers..... \$'000 | 567,551 | 288,958 | 856,509 | 2,369 | 858, 878 |
| Revenue from exports to United States. " | 5,642 | 2,919 | 8,561 | 991 | 9,552 |
| Employees..... . . . . . . . . . . . . . . . . . . . . . No. | 28,884 | 10,505 | 39,389 | - | .. |
| Salaries and wages..................... \$ $\$^{\prime} 000$ | 146,828 | 51,588 | 198,416 | . | . |

## 9.-Electric Power Generated classified by Type of Establishment, by Province,

 1960 and 1961| Year andProvince or Territory | Electrical Utilities |  | Industrial Establishments | Total |
| :---: | :---: | :---: | :---: | :---: |
|  | Publicly Operated | Privately Operated |  |  |
|  | '000 kwh. | '000 kwh. | '000 kwh. | '000 kwh. |
| 1960 |  |  |  |  |
| Newfoundland. | 10 | 1,083,702 | 427,847 | 1,511,559 |
| Prince Edward Island | 6,545 | 72,907 |  | 79,452 |
| Nova Scotia.... | 590,067 | 1,071,187 | 152,679 | 1,813,933 |
| New Brunswick | 1,107, ${ }^{\text {1, }}$ | 65,850 | 565,438 | 1,738,378 |
| Quebec. | ${ }_{31}^{16,117,174}$ | $20,071,192$ 1,704 | $14,244,535$ $2,178,259$ | $50,432,901$ $35,815,064$ |
| Ontario.. | $31,931,862$ $3,690,486$ | 1,704,943 | $2,178,259$ 51,425 | $35,815,064$ $3,741,911$ |
| Saskatchewan | 1,516,926 | 586,155 | 100,744 | 2,203,825 |
| Alberta. | 1,022,324 | 2,103,957 | 317,127 | 3,443,408 |
| British Columbia | 1,748,911 | 4,456,134 | 7,203,338 | 13,408,383 |
| Yukon and Northwest Territories. | 118,711 | 11,007 | 59,401 | 189,119 |
| Canada, 1960 | 57,850,106 | 31,227,034 | 25,300,793 | 114,377,933 |
| 1961 |  |  |  |  |
| Newfoundland........ | ${ }_{7}^{175}$ | 1,022,427 | 434,958 |  |
| Prince Edward Island | 7,269 589 | 81,288 $1,106,686$ | $\stackrel{\rightharpoonup}{165,310}$ | $\begin{array}{r} 88,557 \\ 1,861,133 \end{array}$ |
| New Brunswick | 1,275,455 | 1,63,797 | 572,885 | 1,912,137 |
| Quebec. | 17,899, 450 | 18,173,915 | 13,785,230 | 49,855,595 |
| Ontario. | 31,320,780 | 1,473,884 | 2,158,926 | 34, 953,590 |
| Manitoba. | 3,786,158 |  | 60,451 | 3,846, 609 |
| Saskatchewan | 1,801,531 | 620,239 | 123,334 |  |
| Alberta. | 1,091,039 | 2, 360, 203 | 6 319,234 | - $3,770,476$ |
| British Columbia................ | $1,825,184$ 146,699 | $4,733,244$ 13,075 | $6,646,025$ 58,330 | 13,204, 218,104 |
| Canada, 1961 | 59,739,877 | 29,648,758 | 24,324,683 | 113,713,318 |

Average domestic and farm consumption rose from $4,489 \mathrm{kwh}$. in 1960 to $4,660 \mathrm{kwh}$. in 1961. Among the provinces, the averages in 1961 varied from a low of $1,332 \mathrm{kwh}$. in

Nova Scotia to a high of $9,169 \mathrm{kwh}$. in British Columbia. For domestic and farm customers the average annual bill was $\$ 73.53$ in 1961 as against $\$ 71.75$ in 1960, an increase of 2.5 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 $4,345 \mathrm{kwh}$. per customer in 1960 to $4,654 \mathrm{kwh}$. in 1961 and the average bill from $\$ 96.49$ to $\$ 99.52$.
10.-Domestic and Farm Service by Electrical Utilities and Industrial Establishments, 1939, 1945 and 1958-61

| Item | 1939 | 1945 | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Customers................... No. | 1,623,672 | 1,987,360 | 4,188,946 | 4,381,564 | 4,542,780 | 4,716,819 |
| Kilowatt-hours sold. . . . . . . . '000 | 2,310,891 | 3,365,497 | 17,290,984 | 19,007,111 | 20,391,857 | 21,979,672 |
| Revenue received............. \$'000 | 43,793 | 55,736 | 278,531 | 305,662 | 325,946 | 346,807 |
| Kilowatt-hours per customer.. No. | 1,423 | 1,693 | 4,128 | 4,338 | 4,489 | 4,660 |
| Average annual bill........... \$ | 26.97 | 28.05 | 66.49 | 69.76 | 71.75 | 73.53 |
| Revenue per kwh. . . . . . . . . . cts. | 1.90 | 1.66 | 1.61 | 1.61 | 1.60 | 1.58 |

In 1961, natural gas accounted for 43.5 p.c. of thermal generation by utilities, coal for 41.6 p.c. and petroleum fuels for 14.9 p.c.; corresponding percentages in 1960 were 45.8 p.c., 41.1 p.c. and 13.1 p.c., respectively.
11.-Fuel Used by Electrical Utilities to Generate Power, by Province, 1960 and 1961

| Year and Province or Territory | Coal |  | Petroleum Fuels |  | Gas |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quantity | Value | Quantity | Value | Quantity | Value |
|  | tons | \$ | Imp. gal. | \$ | Mcf. | \$ |
| 1960 |  |  |  |  |  |  |
| Newfoundland. | - | - | 4,501,955 | 345,675 | - | - |
| Prince Edward Island |  |  | 7,026,967 | 465,383 | - | - |
| Nova Scotia......................... | 493,916 | 5,203,562 | 12,115,327 | 814,190 | - | - |
| New Brunswick. .................... | 202,324 | 1,620,457 | 8 8,635, 326 | 1,022,938 | 二 | - |
| Ouebec. | 117, 898 |  | 2,343, 068 | 364,943 | 100,648 |  |
| Manitoba | 117,898 | 1,028,244 | $1,652,894$ $1,087,564$ | 292,528 176 | 100,648 129,127 | 36,578 37,467 |
| Saskatchewan | 769,833 | 1,393,327 | 26,644,175 | 1,570,726 | 8,155,690 | 1,082,655 |
| Alberta. | 206,592 | -316,850 | 1,639,773 | 1, 135,082 | 27,876,986 | 3,549,288 |
| British Columbia. | - | - | 4,908,510 | 902,978 | 1,678,277 | 438,759 |
| Yukon and Northwest Territories... |  | - | 1,151,817 | 304,949 |  |  |
| Canada, 1960 | 1,846,149 | 9,791,636 | 71,707,376 | 6,395,850 | 37,940,728 | 5,144,747 |
| 1961 |  |  |  |  |  |  |
| Newfoundland..................... | - | - | 6,376,192 | 506,426 | - | - |
| Prince Edward Island. . . . . ${ }^{\text {Nova }}$ Scotis.... |  |  | 7,684,587 | 510,779 | - | - |
| Nova Scotia. | 504,071 | 5,393,919 | 19,330, 109 | 1,223, 384 | - | - |
| Quebec.............................. | 167,814 | 1,632,814 | $9,278,872$ $2,936,700$ | 710,229 458,449 | - |  |
| Ontario.. | 272,115 | 2,083,059 | 2,272,763 | 249,244 | 114,928 | 40,608 |
| Manitoba. | 115,954 | 2,475,248 | 2,991,675 | 166,217 | 1,674,707 | 270,039 |
| Saskatchewan | 963,989 | 1,464,312 | 28,811,726 | 1,628,011 | 9,270,157 | 1,378,699 |
| Alberta.......................... | 229,455 | 1,375,526 | 3,078, 048 | 182,586 | 28, 058,763 | 4,081,333 |
| Yukon and Northwest Territories... |  | - | $4,708,311$ $1,767,870$ | 843,111 435,979 | 2,134,637 | 553,227 |
| Canada, 1961. | 2,253,398 | 11,424,878 | 87,236,853 | 6,924,415 | 41,253,192 | 6,323,906 |

## Section 4.-Progress in the Development of Hydro-Electric and Thermal-Electric Facilities, 1962

During 1962, Canada's total electric power production capacity was expanded by the addition of $415,468 \mathrm{hp}$. of new hydro capacity and $713,210 \mathrm{kw}$. of new thermal capacity. This was the second consecutive year that thermal capacity put into service exceeded hydro capacity installed but this trend will be reversed in 1963 when approximately $1,200,000 \mathrm{hp}$. of hydro capacity and $660,000 \mathrm{kw}$. of thermal capacity will be added. Subsequent to 1963, power production facilities at present under construction or in the planning stage will yield almost $8,000,000 \mathrm{hp}$. of new hydro capacity and over $2,000,000 \mathrm{kw}$. of new thermal capacity.

Progress in construction of hydro-electric and thermal-electric plants during 1962 is outlined below, by province and territory.

Atlantic Provinces.-In Newfoundland, new power production facilities brought into service during 1962 consisted of $120,000 \mathrm{hp}$. of hydro capacity and $4,100 \mathrm{kw}$. of thermal capacity. Twin Falls Power Corporation Limited completed the initial stage, comprising two $60,000-\mathrm{hp}$. units, at the Twin Falls development on the Unknown River in Labrador and two other units of the same capacity will be added in 1963. The ultimate capacity of the site is expected to total $300,000 \mathrm{hp}$. in five units. Construction was started at the Newfoundland Light and Power Company Limited hydro development on Sandy Brook; the plant, scheduled to commence operation in 1963, will consist initially of a single $8,000-\mathrm{hp}$. unit. Southern Newfoundland Power and Development Limited is planning to construct a hydro-electric station on the Salmon River at Head Bay d'Espoir with an initial installation of $77,000 \mathrm{hp}$. in two units and an ultimate capacity of $350,000 \mathrm{hp}$. and Bowater Power Company Limited proposes to install a $54,000-\mathrm{hp}$. hydro-electric plant on Hinds Brook. Addition of a $1,000-\mathrm{kw}$. diesel unit at the Wabush Lake plant of Wabush Mines brought the capacity of that plant to $2,000 \mathrm{kw}$.; two additional $1,000-\mathrm{kw}$. units will be installed in 1963. United Towns Electric Company Limited added $1,240 \mathrm{kw}$. of diesel equipment at the St . George's plant and a total of $1,850 \mathrm{kw}$. of new diesel generating equipment was put into service by the Newfoundland Power Commission.

In Prince Edward Island, the capacity of the Summerside thermal plant was increased by the installation of a $2,200-\mathrm{kw}$. unit, bringing the total generating capacity of the plant to $7,281 \mathrm{kw}$. in nine units.

There was no increase in either hydro or thermal capacity in Nova Scotia in 1962, but the Nova Scotia Power Commission is actively considering the construction of two hydro-electric developments-a $10,800-\mathrm{hp}$. one-unit plant at Riverdale on the Sissiboo River, and a plant at Wreck Cove on Wreck Cove Brook with a possible ultimate capacity of $90,000 \mathrm{hp}$. Under consideration by Nova Scotia Light and Power Company Limited are a $7,500-\mathrm{hp}$. plant at Lequille on the Allain (Lequille) River and a $6,500-\mathrm{hp}$. Alpena plant on the Nictaux River.

In New Brunswick, the New Brunswick Electric Power Commission installed the third and final unit at Beechwood on the St. John River, the addition of this 55,000-hp. unit bringing the total capacity of the Beechwood plant to $145,000 \mathrm{hp}$. Capacity of the Commission's Milltown plant on the St. Croix River was raised to $4,200 \mathrm{hp}$. by the installation of a $468-\mathrm{hp}$. unit. Engineering studies were continued on the proposed $600,000-\mathrm{hp}$. Mactaquac development on the St. John River near Fredericton and attention was being given to the possibility of extending the $80,000-\mathrm{hp}$. Grand Falls development. A $47,500-\mathrm{kw}$. steam unit went into service at the Courtenay Bay Station in East Saint John, the ultimate generating capacity of which will be $300,000 \mathrm{kw}$. The addition of a $240-\mathrm{kw}$. unit increased total installation at the Grand Manan thermal plant to 990 kw . and, at Newcastle Creek on Grand Lake, work progressed on the installing of a $60,000-\mathrm{kw}$. unit for service in 1964.

Quebec.-In 1962, the pace of development of hydro-electric power resources in Quebec accelerated with a total of $240,000 \mathrm{hp}$. of new capacity put into service; in contrast, the province's total thermal capacity increased by only 80 kw . Estimates for 1963 indicate a total of $480,000 \mathrm{hp}$. of new hydro capacity and in subsequent years an additional $5,200,000 \mathrm{hp}$., exclusive of an estimated $627,000 \mathrm{hp}$. that could be added at two existing developments when construction of storage reservoirs associated with the Manicouagan scheme are completed. Thermal plants under construction or in the planning stage will make available $310,000 \mathrm{kw}$. of additional generating capacity within the next few years.

Quebec Hydro-Electric Commission's Carillon hydro development on the Ottawa River began initial service with $240,000 \mathrm{hp}$. in four units; Carillon should be complete in 1964 with a total capacity of $840,000 \mathrm{hp}$. in 14 units. Studies continued relating to a proposed increase in generating facilities at the Commission's Rapid II plant on the upper Ottawa River, involving installation of a $16,000-\mathrm{hp}$. unit to bring the plant to an ultimate capacity of $64,000 \mathrm{hp}$. in four units. Construction progressed on the Commission's huge Manicouagan-Outardes development, which will make available some $3,650,000 \mathrm{hp}$. at three sites on the Manicouagan River and $1,440,000 \mathrm{hp}$. at two sites on the Outardes River. In addition, regulation from upstream reservoirs will permit the installation of as much as $627,000 \mathrm{hp}$. of new capacity at existing plants on the two rivers. At one of the sites on the Manicouagan River, a start was made on what will be one of the highest and most massive dams in the world. The structure, expected to take eight years to complete, will create a reservoir containing $115,000,000$ acre-feet of water, covering a surface area of 800 sq . miles. Preliminary construction was begun at a second site on the Manicouagan River.

The Shawinigan Water and Power Company postponed indefinitely the construction of a $210,000-\mathrm{hp}$. development at Rapide des Coeurs on the St. Maurice River. Construction of a $300,000-\mathrm{kw}$. thermal plant at Tracy near Sorel progressed, with the first of two $150,000-\mathrm{kw}$. steam turbines scheduled to go into service in mid-1964.

Asbestos Corporation Limited announced tentative plans to build a $10,000-\mathrm{kw}$. diesel plant at Asbestos Hill in the Ungava region.

Ontario.-In 1962, a total of $320,000 \mathrm{kw}$. of new thermal capacity went into operation in Ontario; estimates for 1963 indicate a further $400,000 \mathrm{kw}$. and, for subsequent years, an increase of $1,100,000 \mathrm{kw}$. is forecast. For the first time in 17 years, the province's total hydro-electric capacity remained unchanged. On the basis of present information, however, new hydro capacity to go into service during the next few years will amount to as much as $1,496,000 \mathrm{hp}$., $288,000 \mathrm{hp}$. of which is scheduled for 1963 .

The Hydro-Electric Power Commission of Ontario estimates that, over the next five years, power loads will increase at a compound rate of approximately 6 p.c. per annum. To meet these increasing loads, the Commission, during 1962, was engaged in the construction or planning of eight generating stations-four hydro-electric, two conventional thermalelectric, and two nuclear-electric. In addition, extensive engineering investigations were being carried out at a number of potential power sites on rivers in the James Bay watershed. Studies of the Madawaska River, to be completed in 1963, may indicate the possibility of developing another site on this river. Other potential sites within reach of present demand areas are located on the Montreal, English and Mississagi Rivers.

There is considerable interest in Ontario in the development of pumped-storage installations such as the pumping-generating station at Niagara Falls. The units at this station can be used either as pumps or generators. Operating as pumps in off-peak periods, the units use surplus power from the Sir Adam Beck plant to raise water to a reservoir at a higher level. The process is reversed during periods of peak power demand and the units, operating as generators, are driven by water from the reservoir. Plans are being made to build a station of this type near Collingwood, where the storage reservoir would be filled by the use of off-peak power from the Douglas Point Nuclear Station. In this way, the best use would be made of the power produced in the nuclear station, which is designed to operate continuously at or near full capacity.

The hydro-electric stations under construction or in the planning stage during 1962 were the Otter Rapids station on the Abitibi River and the Little Long, Harmon and Kipling stations on the Mattagami River. The Otter Rapids station, with two $60,000-\mathrm{hp}$. units already in service, is being expanded by the addition of two similar units scheduled for service in 1963. The construction program for the Little Long station calls for installation of two 84,000-hp. units in 1963 and of two additional units at a later date. Two units of $94,000 \mathrm{hp}$. each are scheduled for installation at Harmon by 1965 with provision for two additional units, and at Kipling, two $94,000-\mathrm{hp}$. units should be in service in 1966 , with provision for two additional units.

The two conventional thermal plants under construction in 1962 were the Commission's Lakeview station near Toronto and its Thunder Bay station at Fort William. A second $300,000-\mathrm{kw}$. unit was installed at Lakeview, bringing the total generating capacity to $600,000 \mathrm{kw}$.; unit 3 is scheduled to go into service in 1963, unit 4 in 1964, unit 5 in 1966 and unit 6 in 1967 or later. Ultimate capacity of the station will be $1,800,000 \mathrm{kw}$. At Thunder Bay, the $100,000-\mathrm{kw}$. unit is scheduled to go into service in 1963, after a number of modifications have been carried out.

The $20,000-\mathrm{kw}$. Nuclear Power Demonstration Station near Rolphton, Ont., was built as a joint undertaking by The Hydro-Electric Power Commission of Ontario, Atomic Energy of Canada Limited and the Canadian General Electric Company Limited. The station produced its first commercial electric power in June 1962 and since that time has performed satisfactorily. The success of its operation is a matter of widespread interest in many parts of the world. The Douglas Point Nuclear Station, now under construction on the shore of Lake Huron, is scheduled to go into service in 1965 with a generating capacity of $200,000 \mathrm{kw}$.

The Great Lakes Power Company is considering the development of a hydro-electric power site on the Montreal River. Installation at the plant would consist of a single $20,000-\mathrm{hp}$. unit, for operation in 1964. Also being considered by the Company is the addition of a third unit at the Lower Falls station on the Montreal River. Addition of this unit, rated at $21,000 \mathrm{kw}$., would raise the generating capacity of the plant to $37,200 \mathrm{kw}$.

Prairie Provinces.-In Manitoba, construction progressed at the site of Manitoba Hydro's Grand Rapids development on the Saskatchewan River; two 150,000-hp. units will go into service in 1964 and a third in 1965 and provision is being made for the eventual addition of a fourth unit. Engineering studies of potential sites on the Nelson River between Lake Winnipeg and Sipiwesk Lake were continued during the year. The addition of a $1,100-\mathrm{kw}$. diesel unit at The Pas generating station brought its total capacity to $5,250 \mathrm{kw}$. in five units and a thermal station housing two $40-\mathrm{kw}$. diesel units was built at Baker's Narrows, 20 miles south of Flin Flon, to serve the nearby airport.

In Saskatchewan, construction continued at Saskatchewan Power Corporation's Squaw Rapids development on the Saskatchewan River, the ultimate capacity of which will be $375,200 \mathrm{hp}$. in eight units. The first four units will be commissioned in 1963, two others in 1964 and two in 1966. The Prairie Farm Rehabilitation Administration of the Canada Department of Agriculture continued construction of the Saskatchewan River dam and reservoir at Coteau Creek. These are being provided primarily for irrigation purposes but hydro-electric generating facilities will be incorporated in the project by the Saskatchewan Power Corporation which plans an initial installation of three units and an ultimate installation of five units, each of approximately $60,000 \mathrm{hp}$. Two of the initial units are expected to be commissioned in 1967 and the third in 1968.

In Alberta, Calgary Power Limited continued construction at the Big Bend hydro site on the Brazeau River. The storage dam, creating a reservoir of 350,000 acre-feet, was completed and construction of the powerhouse eight miles downstream was well under way. A single 200,000 -hp. unit is expected to be in service in 1964. It will be necessary to increase the height of the storage dam before additional units can be installed.

The company completed the installation of a $150,000-\mathrm{kw}$. gas turbine at the Wabamun plant, raising the installed capacity to $282,000 \mathrm{kw}$. in three units. The total generating capacity of the City of Edmonton's municipal thermal station will be increased to $330,000 \mathrm{kw}$. in May 1963 when a new $75,000-\mathrm{kw}$. steam unit goes into operation.

British Columbia.-In March 1962, as a result of legislation enacted by the Government of British Columbia, the British Columbia Power Commission and the British Columbia Electric Company Limited were amalgamated to form the provincial government agency known as the British Columbia Hydro and Power Authority.

Two contracts for preliminary projects associated with future development of the Peace River were completed in 1962, one involving construction of a 500 -foot steel-arch access bridge near the Portage Mountain site and the other the driving of a pilot tunnel to obtain information for subsequent construction. First power from the Portage Mountain site is scheduled for 1968 and estimates indicate a feasible installation of approximately $4,200,000 \mathrm{hp}$. at two sites on the river.

The Power Authority continued its studies of the Duncan Lake, High Arrow and Nica developments. These three developments, which constitute the basis of the Columbia River Treaty signed on behalf of Canada and the United States in 1961, would be capable of controlling approximately $20,000,000$ acre-feet of usable storage in Canada. The Treaty provides that Canada would receive half of the power benefits which result in the United States from the regulation of $15,500,000$ acre-feet of this storage and half the value of the estimated flood damage prevented in the United States through operation of the projects for flood control. The Treaty had not yet been ratified by Canada by the end of 1962.

The Power Authority's Burrard thermal station near Vancouver went into operation in 1962 with one $150,000-\mathrm{kw}$. unit. A second unit with the same rating is scheduled for operation in 1963 and a third in 1964; ultimate capacity will be $900,000 \mathrm{kw}$. in six units. Increases in the capacities of a number of smaller thermal plants were reported in 1962: at Prince George, the addition of two units with a combined capacity of $2,000 \mathrm{kw}$. raised the total plant capacity to $23,000 \mathrm{kw}$.; at Chetwynd, two units totalling $1,800 \mathrm{kw}$. were added, bringing the total capacity of the plant to $3,000 \mathrm{kw}$.; and the capacity of the Alert Bay station on Vancouver Island was increased to $1,200 \mathrm{kw}$. by the addition of a $150-\mathrm{kw}$. unit. A new $1,200-\mathrm{kw}$. station went into service at Sandspit on the Queen Charlotte Islands.

Installation of the third unit at the Consolidated Mining and Smelting Company Limited Waneta hydro station on the Pend d'Oreille River, rated at $120,000 \mathrm{hp}$., will be in service in 1963 and will boost the total capacity of the plant to $360,000 \mathrm{hp}$. MacMillan, Bloedel and Powell River Limited completed the installation of a $25,000-\mathrm{kw}$. steam unit at the Port Alberni plant, raising the total capacity to $27,000 \mathrm{kw}$. The generating capacity of the Harmac plant at Nanaimo was raised to $5,250 \mathrm{kw}$. with the installation of a $4,000-\mathrm{kw}$. unit, and a $30,000-\mathrm{kw}$. unit will be installed at that plant in 1963. Bamfield Light and Power Company began initial service to the Bamfield area in the southwestern part of Vancouver Island with power from two $125-\mathrm{kw}$. generators. The City of Revelstoke carried out a survey in the Cranberry Creek watershed for the purpose of finding additional storage which would permit an increase in the capacity of the Cranberry Creek plant.

The Yukon and Northwest Territories.-In 1962, the net total of $3,100 \mathrm{kw}$. of thermal generating capacity put into service was confined to the Northwest Territories. The Northern Canada Power Commission installed a $600-\mathrm{kw}$. diesel unit at Fort Simpson and a $400-\mathrm{kw}$. unit at Fort Smith, bringing the total capacities of these plants to $1,075 \mathrm{kw}$. and $2,275 \mathrm{kw}$., respectively. Construction of a new power and central-heating plant was begun at Frobisher Bay in 1962; two new 1,000-kw. thermal units are being installed and two similar units transferred from the existing Frobisher Bay plant to give the new plant a generating capacity of $4,000 \mathrm{kw}$. Four $250-\mathrm{kw}$. units remaining at the existing plant
will be operated by the Department of Transport for its own use. The Commission plans to install a $1,500-\mathrm{kw}$. diesel unit at the Inuvik plant in 1963, increasing its total capacity to $3,960 \mathrm{kw}$.

During the summer of 1962, an investigation was carried out of a hydro-electric power site on the Taltson River about 35 miles northeast of Fort Smith to determine the feasibility and the cost of developing the site as a source of power for the Fort Smith and Pine Point mines area. On the basis of this investigation, the Commission considers that an initial installation of $25,000 \mathrm{hp}$. is feasible.

Canada Tungsten Mining Corporation installed four diesel units with a total capacity of $1,600 \mathrm{kw}$. at its Flat River mining operation. At Hay River, Northland Utilities Limited installed a $652-\mathrm{kw}$. diesel unit and removed two units totalling 152 kw . from the plant.

## 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 XIX, 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 9, p. 590, giving statistics by type of establishment, shows that 53 p.c. of the total electric power generated in 1961 was produced by publicly operated utilities, 26 p.c. by privately operated utilities and 21 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 while 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 Newfoundland 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.

[^169]Financially, the Commission is self-supporting, repaying borrowings from revenue. The balance sheet at Nov. 30, 1962 showed total fixed assets of $\$ 67,223,873$ including work in progress amounting to $\$ 1,892,735$. Current assets amounted to $\$ 1,206,905$ and liabilities were as follows: fixed $\$ 56,433,139$; current $\$ 2,994,818$; contingency and renewal reserves $\$ 6,581,012$; sinking fund reserves $\$ 10,996,461$; and general and special reserves $\$ 3,007,507$.

The initial development of the Commission was an $800-\mathrm{hp}$. installation on the Mushamush River which went into operation in 1921 and delivered $208,752 \mathrm{kwh}$. in the first complete year of operation. Succeeding years showed a marked growth in installed capacity, which at Nov. 30, 1961 reached $132,650 \mathrm{hp}$. in hydraulic turbines, 700 kw . in diesel units and $60,000 \mathrm{kw}$. in steam turbines.

The territory of the Commission extends over the entire province and embraces six systems which include 24 generating stations and more than 4,500 miles of transmission and distribution lines. No new power plant construction was undertaken in Nova Scotia during 1962.
12.-Capacity and Output of the Nova Scotia Power Commission, Year Ended Nov. 30, 1962

| System ${ }^{1}$ and First Year of Operation | Present Installed Capacity | Output | System ${ }^{1}$ and First Year of Operation | Present Installed Capacity | Output |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | kw. | kwh. |  | kw. | kwh. |
| Western Network- |  |  | St. Margaret (1921).. | 10,400 | 36,458,000 |
| Harmony (1943).......... | 600 | 4,644,330 |  |  |  |
| Roseway (1930). | ${ }^{888}$ | 3,977,680 | Mersey- |  |  |
| Gulch (1952). | 6,000 | 21,577, 561 | Original development |  |  |
| Ridge (1957).... | 4,000 200 | $8,265,220$ 2,730 |  | 21,780 7,200 | $109,137,500$ $42,639,200$ |
| Sissiboo (1960)... | 6,000 | 26,091, 400 | Deep Brook (1950)......... | 9,000 | 48, 264, 500 |
| Weymouth (1961) | 9,000 | 40,790,080 | Lower Great Brook (1955). | 4,500 | 20,742,850 |
| Eastern Network- |  |  | Canseau (diesel) (1937)...... | 700 | 17,280 |
| Barrie Brook (1940)....... | ${ }_{3}^{360}$ | 1,647,110 |  |  |  |
| Dickie Brook (1948)..... Malay Falls (1924)...... | 3,800 3,600 | $10,412,000$ $13,654,306$ | Tusket (1929)............... | 2,160 | 13,000,723 |
| Ruth Falls (1925).......... | 6,970 | 40, 106, 600 |  |  |  |
| Liscomb (1957).......... | ${ }_{60} 450$ | 3, ${ }^{\text {3 }}$-48, 340 |  |  |  |
| Trenton (thermal) (1951).. | 60,000 | 172,787, 473 | Totals............. | 157,608 | 617,264,883 |

${ }^{1}$ Hydro unless otherwise noted.
New Brunswick.-The New Brunswick Electric Power Commission was incorporated under the Electric Power Act, 1920. Generating stations owned by the Commission at Mar. 31, 1963 were as follows:-

| Plant | Type | Capacity | Plant | Type | Capacity |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | hp. |  |  | hp. |
| Grand Falls. | Hydro. | 80,000 | Courtenay Ba | Steam. | 63,800 ${ }^{1}$ |
| Musquash. | Hydro. | 9,320 | Saint John (D) | Steam | 21,500 ${ }^{1}$ |
| Tobique. | Hydro. | 27,000 | Chatham. | Steam. | 43,600 ${ }^{1}$ |
| Beechwood | Hydro. | 145,000 | Grand Manan. | Diesel. | 1,3301 |
| Milltown. | Hydro | 4,200 |  |  |  |
| Grand Lake. | Steam. | 58,7001 | Total | Y..... | 454,450 |

${ }^{1}$ Capacity rating of generators in kw . converted to hp .
All the above generating units with the exception of Grand Manan were interconnected in a province-wide grid system. The statistical information given in Table 13 shows the growth of the Commission's undertakings since 1959. Power plant construction completed or under way in New Brunswick during 1962 is outlined at p. 592.

# 13.-Growth of the New Brunswick Electric Power Commission, Years Ended Mar. 31, 1959-63 

| Item | 1959 | 1960 | 1961 | 1962 | 1963 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| High-voltage transmission line...miles | 1,272 | 1,396 | 1,585 | 1,744 | 1,845 |
| Distribution line. . . . . . . . . . . . . . " | 7,286 | 7,512 | 7,905 | 7,996 | 8,390 |
| Direct customers................ . No. | 84,025 | 100,475 | 103,029 | 107,415 | 117,073 |
| Plant capacities . . . . . . . . . . . . . . . . hp. | 256,720 | 346,180 | 346,180 | 412,715 | 454,450 |
| Power generated. . . . . . . . . . . . . . kwh. | 754,714, 180 | 1,184,798,350 | 1,273,719,910 | 1,425,489,140 | 1,644,740,890 |
| Capital invested................... \$ | 104,511,683 | 132,844,276 | 148,280,363 | 156,190,514 | 170, 859, 403 |
| Revenue. . . . . . . . . . . . . . . . . . . . . \$ | 13,527,290 | 16,665,153 | 18,971,596 | 20,309,856 | 22,591,554 |

Quebec.-The Quebec Streams Commission.-Created by SQ 1910, c. 5, and given additional powers in 1912 (RSQ 1925, c. 46) and SQ 1930, c. 34, the Quebec Streams Commission 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 provincial Hydraulic Resources Department. 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 North River, two in the watershed of the Ste. Anne de Beaupré River, and one at the outlet of Lake Morin on Rivière du Loup (lower).

Other Reservoir Control.-Storage reservoirs otherwise controlled or operated are: the Lake St. John, the Lake Manouane and Passe Dangereuse on the Peribonca River, and the Onatchiway on the Shipshaw River; Témiscouata Lake on the Madawaska River, controlled by the Gatineau Power Company; Memphremagog Lake on the Magog River, controlled by the Dominion Textile Company; Témiscamingue and Quinze Lakes on the Ottawa River, controlled by the federal Department of Public Works; Kipawa Lake on the Ottawa River, controlled by the Gatineau Power Company; and 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, controlled by the Quebec Hydro-Electric Commission.

Power developments on the Saguenay River, benefiting from the Peribonca and Lake St. John reservoirs, have a total capacity of $1,950,000 \mathrm{hp}$.

The Quebec Hydro-Electric Commission.-The Quebec Hydro-Electric Commission was established by SQ 1944, c. 22, with the object 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. The Commission at the end of 1962 controlled, among other assets, the following hydro-electric plants:*-


The Commission operates three systems. The Southwestern Quebec system is the most important. In addition to supplying all types of customers in the Metropolitan

[^170]Montreal area, it supplies power to customers in the Beauharnois-Valleyfield area, plus contracts for large deliveries to The Hydro-Electric Power Commission of Ontario, the Aluminum Company of America at Massena, N.Y., the Gatineau Power Company and the Shawinigan Water \& Power Company. The Northeastern Quebec system is composed of three regional areas-Bersimis, Gaspe and Chibougamau. The Bersimis and Gaspe areas are interconnected with the Southwestern Quebec system. Chibougamau is isolated and is served by the Commission through a purchase power contract. Gaspe region is supplied by a transmission line linking Les Boules with system resources near Quebec. The Bersimis and Gaspe regions normally receive their power supply from Bersimis plants 1 and 2 which furnish large blocks of power to the Southwestern Quebec system for use in the Montreal area and to the Shawinigan Water \& Power Company near Quebec City. These plants also supply the requirements of customers on the north shore of the lower St. Lawrence River.

## 14.-Growth of the Hydro-Quebec System, 1953-62

Nots.- Figures for the years 1935-46 will be found in the 1950 Year Book, p. 572, and for the years 1947-52 in the 1957-58 edition, p. 579.

| Year | Municipalities Served | $\begin{aligned} & \text { Customers } \\ & \text { Served } \\ & \text { (end of year) } \end{aligned}$ | Power Distributed |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  | Total | Primary |
|  | No. | No. | hp . | hp. |
| 1953. | 67 | 413,439 | 1,748,000 | 1,625,000 |
| 1954. | 67 | 430,774 | 1,700,000 | 1,687,000 |
| 1955. | 65 | 451,820 | 1,760,000 | 1,725,000 |
| 1956 | 65 | 475,499 | 2,061,000 | 1,955,000 |
| 1957 | 64 | 499,005 | 2,561,000 | 2,390,000 |
| 1958 r. | 64 | 515, 834 | 2,736,000 | 2,671,000 |
| 1959 r | 63 | 536,487 | 3,402,000 | 2,926,000 |
| 1960 r. | 63 | 558,600 | 3,590,000 | 3,174,000 |
| 1961 r. | 73 | 574,992 | 3, 855,000 | 3,310,000 |
| 1962....... | 73 | 589,291 | 3,904,000 | 3,589,000 |

15.-Distribution of Hydro-Quebec Primary Power, by Customer Group, 1956-62
(Coincident with Montreal System peak)

| System | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | hp . | hp. | hp. | hp. | hp. | hp. | hp. |
| Montreal | 1,351,000 | 1,436,000 | 1,617,000 | 1,698,000 | 1,905,000 | 1,949,000 | 2,143,000 |
| Beauharnois (local) | 138,000 | 265,000 | 253,000 | 255,000 | 208,000 | 201,000 | 244,000 |
| Beauharnois (Ontario) | 250,000 | 250,000 | 267,000 | 261,000 | 261,000 | 250,000 | 250,000 |
| Massena. . | 75,000 | 75,000 | 75,000 | 75,000 | 75,000 | 75,000 | 75,000 |
| Shawinigan Water and Power Company. | 110,000 | 198,000 | 276,000 | 359,000 | 452,000 | 503,000 | 496,000 |
| Gatineau... | 20,000 | 30,000 | 37,000 | 50,000 | 67,000 | 87,000 | 100,000 |
| Gaspe. | 20,00 | 35,000 | 41,000 | 48,000 | 51,000 | 67,000 | 68,000 |
| Northwestern | - | 86,000 | 86,000 | 85,000 | 53,000 | 56,000 | 57,000 |
| Chibougamau. | - | 15,000 | 19,000 | 25,000 | 25,000 | 27,000 | 29,000 |
| Northeastern (north shore) | - | - | - | 70,000 | 77,000 | 95,000 | 127,000 |
| Totals. | 1,944,000 | 2,390,000 | 2,671,000 | 2,926,000 | 3,174,000 | 3,310,000 | 3,589,000 |

Power plant construction completed or under way in Quebec during 1962 is outlined at p. 593.

Nationalization of Utilities.-In November 1962, the Quebec Government proposed to nationalize 11 private power companies. Nationalization became effective May 1, 1963.

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.

With the enactment of legislation effective Jan. 1, 1962, the Commission achieved the ultimate in what has been over a period of several decades a series of system amalgamations that has brought the entire provincial area served into a financial and administrative unit. Service is provided for the most part on a co-operative basis, and predominantly for the benefit of more than 350 municipalities supplied by the Commission with power at cost. Since 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 presented for two operating systems called the East System and the West System. The first includes the former Southern Ontario System and the former Northeastern Division, and the second coincides with the former Northwestern Division.

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, particularly 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 eight regions with regional offices located in eight major municipalities.

The Commission is primarily concerned with the provision of electric power by generation or purchase, and its delivery to the electrical utilities for resale in the more than 350 municipalities having cost contracts with the Commission. The Commission supplies power in bulk, though not under cost contract, to approximately 200 direct customers, some located within the areas of the municipalities already referred to and some outside these areas. These direct customers include industrial customers whose requirements are so large or so unusual as to make service by the local municipal utilities impracticable. They also include mines, industries in unorganized territories, and certain interconnected systems, including a number of independent municipal utilities. These interconnected systems purchase power for resale either within or beyond the boundaries of the province.

In addition to these operations, which represent about 90 p.c. of its energy sales, 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. A much larger part of retail service throughout the province is provided, 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 1962, the Commission's investment in fixed assets at cost increased by $\$ 105,405,379$ and at the end of the year amounted to $\$ 2,567,014,636$. Total assets after deducting accumulated depreciation were $\$ 2,702,226,836$ (exclusive of pension and insurance funds amounting to $\$ 141,643,845$ ).

In 1962 a total of 355 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 $\$ 751,930,873$, of which $\$ 305,826,987$ represented the equity acquired in the Commission's systems by the utilities operating under cost contracts.

The Commission's power development program as at Dec. 31, 1962 is given in Table 16 and is also outlined at pp. 593-594.

## 16.-Current Power Development Program of The Hydro-Electric Power Commission of Ontario, as at Dec. 31, 1962

| System and Development | Units | In Service | Capacity ${ }^{1}$ |
| :---: | :---: | :---: | :---: |
|  | No. |  | kw. |
| East System - |  |  |  |
| Lakeview-near Toronto. | 6 | 1961-67 | 1,800,000* |
| Douglas Point Nuclear Power-near Kincardine. | 1 | 1965 | 200, $000{ }^{*}$ |
| Otter Rapids-Abitibi River. | 4 | 1961-63 | 172,000 |
| Little Long-Mattagami River. | 2 | 1963 | 114,000 |
| Harmon-Mattagami River. | 2 | 1965 | 110,000 |
| Kipling-Mattagami River. | 2 | 1966 | 132,000 |
| West System- |  |  |  |
| Thunder Bay-Fort William. | 1 | 1963 | 100,000 |

[^171]
## 17.-Resources of The Hydro-Electric Power Commission of Ontaris Generated and Purchased (All Systems), December 1960-62



[^172]18.-Distribution of Power to Systems of The Hydro-Electric Power Commission of Ontario, Years Ended Dec. 31, 1957-62
Noтe.-Peak load generated and purchased, primary and secondary, in terms of generation.

| System | 1957 | 1958 | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | kw. | kw. | kw. | kw. | kw. | kw. |
| East System. | 4,563,696 | 4,928,415 | 5,464,008 | 5,583,206 | 5,915,484 | 6,362,585 |
| West System. | 406,880 | 489,121 | 554,196 | 574,328 | 548,448 | 606,300 |
| Totals. | 4,970,576 | 5,417,536 | 6,018,204 | 6,157,534 | 6,463,932 | 6,968,885 |

19.-Growth of The Hydro-Electric Power Commission of Ontario, 1952-62

| Year | Communities Served | Ultimate Customers Served Directly or Indirectly | Total <br> Power Distributed ${ }^{1}$ | Assets of Commission and Municipal Utilities |
| :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | kw. | \$ |
| 1952. | 1,244 | 1,315,862 | 3,330,286 | 1,442,511,467 |
| 1953. | 1,279 | 1,389,750 | 3,480,646 | 1,687,947,082 |
| 1954. | 1,301 | 1,467,034 | 3,778,744 | 1,883, 311,970 |
| 1955. | 1,325 | 1,540,011 | 4,436, 340 | 2, $040,174,745$ |
| 1956. | 1,340 | 1,612,049 | 4,909,104 | 2,293,492,487 |
| 1957. | 1,376 | 1,674,062 | 4,970,576 | 2,563, 058,384 |
| 1958. | 1,387 | 1,757,405 | 5,417,536 | 2,756,758,142 |
| 1959. | 1,405 | 1,830, 453 | 6, 018,204 | 2,909, 088,086 |
| 1960. | 1,414 | 1,881,472 | 6,157, 534 | 3, 044, 800,819 |
| 1961. | 1,418 | 1,938, 898 | 6,463,932 | 3, 196, 429, ${ }^{3} \mathbf{3}$ |
| 1962. | 1,434 | 1,991,288 | 6,968,885 | 3,148,330,722 |

[^173]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 the amalgamation of the two former provincial government electrical utilities engaged in the generation and distribution of electric power. It operates five hydro-electric generating stations, two thermal type plants and a limited number of diesel generating installations. The combined generating capability of the corporation is $829,200 \mathrm{kw}$. which will be increased by $330,000 \mathrm{kw}$. in 1965 following the completion of the Grand Rapids hydro-electric development on the Saskatchewan River.

Hydro installations account for $580,000 \mathrm{kw}$. of the total generating capability, thermal for $244,000 \mathrm{kw}$., and diesel for $5,200 \mathrm{kw}$. Of the hydro stations, four are located on the Winnipeg River and, like the thermal installations, produce power for the southern section of the province; the fifth hydro station, rated at $160,000 \mathrm{kw}$., is situated on the Nelson River 425 miles north of Winnipeg and supplies power for The International Nickel Company of Canada, Limited, development and the townsite at Thompson in northern Manitoba. Diesel installations are used to provide power in three northern areas.

In serving its 193,622 urban, rural, commercial and industrial customers, the corporation maintains some 33,931 miles of primary transmission and farm distribution lines. Approximately 95 p.c. of the total resident-occupied farms in the province are electrified, and 532 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 basic power requirements.

Power plant construction in Manitoba in 1962 is outlined at p. 594.
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.

In 1962, the Corporation served 957 urban communities (with six or more customers) 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 also sold to the City of Regina and to the Manitoba Hydro Electric Board on an exchange basis. Activities of the Corporation cover the entire province with the exception of the city of Regina, which owns and operates municipal plants and a distribution system.

At the end of 1962, the Corporation served 235,386 customers, 197,811 of whom were retail customers and 37,575 of whom were located in communities supplied with power through bulk sales. The retail customers included 133,903 urban customers and 63,908 classified as rural, predominantly farmers. During $1962,1,645,862,278 \mathrm{kwh}$. were made available to customers, of which $1,624,482,258 \mathrm{kwh}$. were generated in Corporation plants and $21,380,020 \mathrm{kwh}$. were purchased in bulk, primarily from Manitoba. At the end of the year, the Corporation had invested, at cost, a total of $\$ 375,428,535$ in electric and natural gas plant in service ( $\$ 255,432,044$ in electric only).

During 1962, the Corporation owned and operated six steam generating plants-one at Prince Albert, two each at Saskatoon and Estevan, and a sixth plant at Moose Jaw. These plants supplied 93 p.c. of total system requirements and two internal combustion gas dual fuel plants at Kindersley and Swift Current supplied most of the remainder; a third plant at Unity was retired early in 1962. System capability in operation at the end of 1962 was assessed at $540,150 \mathrm{kw}$. with $499,000 \mathrm{kw}$. in steam plants, and $41,150 \mathrm{kw}$. in gas dual fuel units and diesel plants. At the end of 1962, the Corporation owned and operated 69,453 miles of transmission and rural lines (excluding urban distribution and hi-lines).

Power plant construction in Saskatchewan in 1962 is outlined at p. 594.
20.-Growth of the Saskatchewan Power Corporation, 1953-62

| Year | Communities Served in Bulk and Retail Sales | Individual Meters in Communities Served | Power Distributed | Revenue |
| :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | kwh. | \$ |
| 1953. | 631 | 122,676 | $398,211,673$ 472 | 10,363,752 |
| 1955. | 742 | 149,134 | 556,776,981 | 13,350,177 |
| 1956. | 799 | 162,594 | 659, 720,877 | 15,566,910 |
| 1957. | 870 | 178,567 | 780,613,534 | 18,152,460 |
| 1958. | 880 | 188,293 | 909,086,629 | 20,687,771 |
| 1959. | 962 | 197,451 | 1,067,349,615 | 23,909,113 |
| 1960 | 984 | 221,675 | 1,233,'531,753 | 26,667,471 |
| 1961. | 901 | 229,336 | 1,498,055,955 | 30,263,598 |
| 1962 | $961{ }^{1}$ | 235,386 | 1,645, 862,278 | 33,106,018 |

[^174]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.

Plant additions completed or under way in Alberta during 1962 are outlined at pp. 594-595.

British Columbia.-British Columbia Hydro and Power Authority was created on Mar. 30, 1962 under the provisions of the British Columbia Hydro and Power Authority Act which amalgamated British Columbia Electric Company Limited with British Columbia Power Commission. The new organization provides electric service for most of British Columbia.

## 21.-Summary Statistics of the British Columbia Hydro and Power Authority, Year Ended Mar. 31, 1963

| Item | Amount | Item | Amount |
| :---: | :---: | :---: | :---: |
| Customers (electric).......... No. | $\begin{array}{r} 459,098 \\ 1,865,000 \end{array}$ | Annual revenue (electric).......... \$'000 | 92,457 |
| Installed plant capacity........ kw. |  |  |  |
| Transmission (high voltage). miles | 3,211 | Capital Investment (plant in operation)-Generation plant.............................Transmission plant..........Distribution and general plants.... \& | 417,651, 296 |
| Distribution primaries....... " | 11,393 |  | 144, 122,363 |
| Power Requirements-Generated................ 000 kwh.Purchased................... | $\begin{array}{r} 6,568,000 \\ 229,000 \end{array}$ |  | 283, 943,027 |
|  |  | Total, Capital Investment (plant in operation). |  |
| Total, Power Requirements. '000 kwh. | 6,797,000 |  | 845,716,686 |

Of the Authority's total power requirements of $6,797,000,000 \mathrm{kwh}$. for the year ended Mar. 31, 1963, $6,209,000,000 \mathrm{kwh}$. or 91.3 p.c. was produced by hydro-electric plant, $359,000,000 \mathrm{kwh}$. or 5.3 p.c. was produced by thermal plant and the remainder, amounting to $229,000,000 \mathrm{kwh}$., was purchased.

Power plant construction in British Columbia in 1962 is outlined at p. 595.
Northwest Territories and Yukon Territory.-The Northern Canada Power Commission, formerly Northwest Territories Power Commission, was created by Act of Parliament in 1948 to bring 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 Landing, Y.T., and the Snare River northwest of Yellowknife, N.W.T. Diesel-electric plants are operated at Fort Simpson, Fort Smith, Fort Resolution, Frobisher Bay and Inuvik, N.W.T., and at Field, B.C.

The Whitehorse Rapids power development, which has been in service since November 1958, supplies the power for the Department of National Defence at Whitehorse, most of the power for the city of Whitehorse, and the power for heating systems of the Department of National Health and Welfare Hospital and two hostels operated by the Department of Citizenship and Immigration.

The Snare River hydro developments supply power to the mines in the Yellowknife area and, with the Bluefish hydro-electric plant of the Consolidated Mining and Smelting Company of Canada Limited, supply the town of Yellowknife. The original Snare Rapids plant has been in operation since September 1948 and the Snare Falls plant, situated on the same river about 10 miles downstream from the original plant and remotely controlled from Snare Rapids, was placed in service in November 1960.

The Mayo River plant has supplied power to mining properties in the Elsa and Keno areas and to the Mayo Landing and Keno City communities since 1952.

The diesel-electric plants supply the needs of Federal Government departments and the general public in the communities in which they are located. In addition to these plants the Commission operates a power and heating plant at the Fort McPherson residential school for the Department of Northern Affairs and National Resources, and the municipal water system and central heating plant supplying the hostel and school premises at Fort Simpson, N.W.T. Details of construction completed or under way in the Territories during 1962 are outlined at pp. 595-596.

## CHAPTER XIII.-FISHERIES AND FURS

## CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing $p .1$ of this volume.

## PART I.-FISHERIES

## Section 1.-Commercial Fishing and Marketing*

Canadian fishermen reap the harvests of two mighty oceans-the Atlantic and the Pacific-and the most extensive system of inland rivers and lakes in the world. The annual catch of some $2,000,000,000 \mathrm{lb}$. of fish and shellish has a marketed value of more than $\$ 200,000,000$. Canada is surpassed only by Norway and Japan as an exporter of fish products, retaining about one third of its catch and shipping the remainder abroad in fresh, frozen, canned, salted, dried or otherwise preserved form. There are over 79,000 commercial fishermen in Canada and many more thousands of people are employed in the fish processing industry.

Canadian fisheries were more prosperous in 1962 than at any previous time in their history. Records were achieved in every major sector; the effects of the expansion reached as far as the construction and boat-building industries, adding impetus to their activities. The Maritime Provinces reported the most productive period ever experienced. Fishermen there earned a record gross income of over $\$ 43,000,000$; the value of each of the two major catches, lobster and cod, increased by about $\$ 1,000,000$; scallops, until recently a minor fishery, moved up to third place; and a marginal enterprise, the harvesting of Irish moss from the sea, showed signs of sudden expansion to importance. Newfoundland established new levels in both the landed value of its catch $(\$ 17,000,000)$ and the output of its rapidly growing frozen fish industry, and the volume of its traditional product, light-salted cod, showed an upturn for the first time since 1959. In Quebec both quantity and value of the seafish catch ran from 20 p.c. to 25 p.c. ahead of 1961 in almost every month of the year. British Columbia set a new mark for the number of salmon taken in one season; produced the largest pack of pink salmon ever canned in one year; received a higher value for its halibut catch than ever before; and made its first serious venture into the world-wide tuna fishery. The freshwater operations, which now contribute about 10 p.c. of the annual marketed value of all Canadian fish products, made more than proportionate advances.

[^175]Atlantic Fisheries.-The major elements of prosperity in the Atlantic industry during 1962 were the very steady high level of market demand and the return of normal quantities of cod to the fishing banks after a two-year scarcity. Figures indicating world per capita consumption of fish showed an upward trend in 1962 and, of more immediate import, per capita consumption of frozen groundfish rose in the United States. Saltfish prospects also improved. The biggest buyers of salt cod are the British West Indies and the general level of trade with this area has risen in the past two or three years.

The Maritime Provinces.-Nowhere was there more optimism than in the Maritimes. At the end of 1962 four large steel draggers for the offshore fleet were being built to the most modern specifications and at least five more were on order. In the inshore fleet there was notable expansion in two new methods of groundfishing, Danish seining by the larger boats and gillnetting by the smaller ones. These two types of gear were tried out a few years ago, almost as a last resort, in an effort to revive the then languishing fishery on the Gulf side of Cape Breton Island. They both proved extremely successful. Plants in the area were adding extensions in 1962 and the gear was being proved on other fishing grounds.

Output of frozen fresh seafish in the Maritimes exceeded $87,000,000 \mathrm{lb}$., an increase of $12,000,000 \mathrm{lb}$. over the 1961 production. Even so, at the end of December stocks were only $1,000,000 \mathrm{lb}$. higher than at the end of 1961 ; the market had absorbed the remainder. Production gains were mainly in fillets, blocks of cod and blocks of flounders although output of raw breaded fish portions also expanded sharply.

Lobsters provide about one third of the fishermen's gross income in the Maritimes. In 1962 lobster landings were a little smaller than in the previous year but, with much higher prices, landed value increased by $\$ 1,000,000$ to a total of $\$ 19,000,000$. Even during the latter part of the year when the traps are usually brought ashore, fishing was so profitable that the gear was left in the water, the lobstermen feeling that their gains would be more than sufficient to cover normal storm losses. At the same time, the largest holding pool in the Maritimes began an expansion to double its capacity of $125,000 \mathrm{lb}$. of live lobsters.

Third largest money-maker for the fishermen in 1962 was the scallop catch. Landings increased again in that year and production of shucked meats reached a record $14,000,000$ lb., having an estimated value of $\$ 4,500,000$. Over 90 p.c. was taken by the mobile offshore fleet, fishing almost exclusively on Georges Bank.

Herring were scarce everywhere until after midsummer and off Nova Scotia throughout the year. Heavy runs came briefly into the Gulf of St. Lawrence in the late summer and, later and for longer, into the Bay of Fundy in the fall. Fishing was pushed and, especially in New Brunswick, landings were heavy. The sardine canneries, pickling plants and smoke houses were all anxious for supplies and further large quantities were frozen for bait, which was in acute demand in Newfoundland because of failure of the squid fishery there. Mackerel were more plentiful than in 1961. Prince Edward Island had a surplus after filling its orders for the fresh market and, as it has no large pickling industry, salted the excess for bait.

The expansion of Irish moss facilities at three points in Nova Scotia, planned in 1962, is expected to add several million pounds to the province's output and a million dollars in job opportunities. The moss is gathered from the sea, dried and shipped to United States manufacturers of colloids.

Newfoundland.-Newfoundland fishermen increased their gross earnings by $\$ 2,000,000$ in 1962 when the industry established several new records: the annual output of frozen fish reached its highest point at $74,000,000 \mathrm{lb}$.; the landed value of the catch reached a record $\$ 17,000,000$; unit landed prices for cod, haddock and redfish were higher than they had ever been; and fishermen received more per quintal for their light salted cod than ever before. The year was characterized by a very strong market for the blocks of frozen cod which account for most of the output of the freezing plants and are sold mainly to United States manufacturers of fish sticks. Ten years ago in Newfoundland, the freezing industry took only 15 p.c. of the cod landings but the proportion has grown steadily and in 1962
reached nearly 40 p.c. This included the entire catch of the offshore fleet and as much of the inshore catch as a greatly expanded transport service could collect from the fishermen and bring to the plants.

Newfoundland's catch of cod from the banks returned to normal after two lean years, and heavy runs of cod arrived on the trap fishing grounds. However, there were also a few disappointments. After only a brief stay, cod left the trap grounds as suddenly as they had come, and Newfoundland's usual runs of squid failed to appear, so that bait for the autumn trawl fishery presented a problem.

In $1962,32,000,000 \mathrm{lb}$. of cod blocks were frozen, $10,000,000 \mathrm{lb}$. of other groundfish blocks and $30,000,000 \mathrm{lb}$. of groundfish fillets, altogether an increase of $8,000,000 \mathrm{lb}$. over the previous record. At the end of the year, as a measure of market demand, stocks on hand were smaller than at the beginning. Mainly because of difficulties besetting fresh fish transport, 60 p.c. of the expanded cod catch remained for salting and total saltfish production rose by 16 p.c. With a successful Labrador floater fishery contributing, output of light salted fish increased for the first time in several years. Shipments of heavy salted fish to Nova Scotia drying plants were also considerably higher.

Expansion of the inshore fisheries was foreseen in a heavy schedule of small boat building. About 350 craft were completed during 1962 and 500 more planned for 1963.

Pacific Fisheries.-In 1958, the year of the great sockeye bonanza, British Columbia fishermen sold their salmon catch for a record $\$ 37,000,000$ and the canneries produced a pack of $1,900,000$ cases. In 1962, which will go down in history as the "year of the pinks", the salmon fishermen received over $\$ 30,000,000$ for their catch, making it the second-best year, and the canneries put up $1,800,000$ cases. The total number of salmon caught was $33,000,000$, by far the greatest since the record was started in 1951. The catch weighed $164,000,000 \mathrm{lb}$., of which $93,000,000 \mathrm{lb}$. and $23,000,000$ fish were pink salmon, the largest pink catch ever taken in one year in the province. The previous record of $22,000,000$ pinks had stood since 1930. Even by working around the clock, plants could not cope with such landings and were obliged to put catch limits on their boats. The pink pack of $1,188,000$ cases broke a record which had been unchallenged for 32 years.

The sockeye catch was small because of near failure of the Adams River run to the Fraser River. This was the run that provided the bonanza of 1958 and returned for the first time in 1962, as sockeye have a four-year life cycle. However, the Fraser River was low in 1960 when the yearlings moved down river and out to sea and few of them survived this migration. On the other hand, the coho catch was the second heaviest on record and, as much of it is frozen rather than canned, it accounted for an increase of $3,500,000 \mathrm{lb}$. in the year's sales of frozen salmon. The catch of springs, low in 1961, failed to improve in 1962. Chum landings were high, partly because several runs came in with the pinks when the fishing effort was at its height.

When the halibut season closed on Oct. 15, the men had landed more fish and received higher unit prices for them than ever before. The catch totalled $35,000,000 \mathrm{lb}$., exceeding the record of $33,700,000 \mathrm{lb}$. established in 1960. The Canadian and United States catches together added up to $75,300,000 \mathrm{lb}$., compared with the $44,000,000 \mathrm{lb}$. which was all the depleted stocks could produce when international management was initiated as a recovery measure in 1931. The halibut industry moved from third to second position of importance among British Columbia fisheries, and it was significant that most of the big keels laid during the year were for the halibut fleet.

A summer herring fishery yielded a record 41,000 tons and, although the main fleet was tied up by price negotiations for six weeks in the fall, the total catch of 223,000 tons about equalled that of the previous year. The market for herring meal strengthened during 1962 and herring oil prices, rather depressed for several years, showed signs of improving late in the year.

Two converted salmon seiners fished tuna off California about five days sailing from Vancouver. They came back convinced that the new Canadian brine spray system provides the world's finest shipboard refrigeration, eager for more experience in detecting and catching tuna fish, and making plans for expanding operations in 1963.

In the shellfisheries the oyster industry expanded and shrimp landings rose but crab production was the lowest in ten years.

Inland Fisheries.-Ontario's output of frozen lake fish increased to $6,800,000 \mathrm{lb}$. from $5,700,000 \mathrm{lb}$. in 1961, with emphasis on whole smelts and perch fillets. Markets were strong and warehouse stocks at the end of the year were 20 p.c. lower than at the beginning.

In the Prairie Provinces and the Northwest Territories, freezings increased from under $9,000,000 \mathrm{lb}$. to over $11,000,000 \mathrm{lb}$., with major increases in the output of pickerel fillets and dressed whitefish; stocks declined by $1,000,000 \mathrm{lb}$. during the year.

Exports of lake fish increased in value by about $\$ 700,000$. Most of the shipments went to the United States but they did include small-volume amounts of eels for Europe, marking the beginning of a hoped-for revival in this trade, which flourished until the beginning of World War II.

## Section 2.-Governments and the Fisheries

The British North America Act gave the Federal Government full legislative jurisdiction for the coastal and the inland fisheries of Canada and under this Act laws are made for the protection, conservation and development of the fisheries throughout the country. However, the provinces have, by agreement, assumed administrative responsibilities in varying degree. Consequently, though all the regulations governing fishing are made by the Federal Government, the work of administering the fisheries (enforcing the different laws and regulations, inspecting fish products, issuing licences, etc.) is done without duplication of staff either by federal or by provincial officers, according to arrangement.

Specifically, all tidal or sea fisheries except those of the Province of Quebec are administered by the federal Department of Fisheries, and the freshwater or non-tidal fisheries, with some exceptions, are administered by the provincial departments. Quebec takes responsibility for all its fisheries including those in salt waters. Ontario, Manitoba, Saskatchewan and Alberta administer their freshwater species. In British Columbia, provincial government control extends to the freshwater forms and the Federal Government is responsible for marine and anadromous species. In Prince Edward Island, Nova Scotia, New Brunswick, Newfoundland and the Yukon and Northwest Territories, the Federal Government maintains complete control; administration of the fisheries of the National Park areas throughout Canada is the responsibility of the Canadian Wildlife Service, Department of Northern Affairs and National Resources.

## 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 Department of Fisheries proper with headquarters at Ottawa, Ont., and area offices under Area Directors at Vancouver, B.C., Winnipeg, Man., Halifax, N.S., and St. John's, Nfld.
(2) The Fisheries Research Board of Canada with headquarters at Ottawa and eight stations across Canada.
(3) The Fisheries Prices Support Board with headquarters at Ottawa.

A brief outline of the functions of these agencies is given in this Subsection.

The Department of Fisheries.-The chief responsibilities of the Department of Fisheries throughout Canada 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 optimum utilization of the resource; and to develop a proper public understanding of the resource and the industry.

The larger part of the staff of the Department is stationed in the field and is composed mainly of protection and inspection officers. The protection officers, including those on the Department's 82 patrol and protection vessels, are concerned with the enforcement of the conservation regulations under the Fisheries Act and other Acts designed to ensure a continuing maximum yield of fish, and are also responsible for the inspection of fish products and processing plants under the Fish Inspection Act and relevant section of the Meat and Canned Foods Act.

A conservation program is carried out by the Conservation and Development Service of the Department. Protection officers enforce regulations pertaining to restricted areas, close seasons, limitations in location and types of gear, and also inspect spawning streams and keep them clear of obstructions. Biologists investigate such problems as pollution and water supply, and engineers construct fishways to enable fish to bypass obstructions of all kinds. Hatcheries are maintained to restock waters where the fisheries are under federal administration.

For the past few years a bounty has been paid for the killing of the parasite-carrying harbour seals along the Atlantic and Pacific Coasts at a rate of $\$ 10$ for adult and $\$ 5$ for young seals. Total payments for the year ended Mar. 31, 1963 amounted to $\$ 20,620$.

Inspection of fish and fish products to ensure a high standard of quality is carried out by the Inspection Service, and fish inspection laboratories are maintained on the Atlantic and Pacific Coasts and in Toronto and Winnipeg. A staff of home economists operates test kitchens in Ottawa, Toronto, Vancouver, Montreal, Halifax, Edmonton and Winnipeg, and conducts demonstrations and lectures on methods of preparing and cooking fish and fish products.

Through the medium of printed material, films, radio, television and exhibitions, the Information and Consumer Service of the Department informs the public on the various aspects of the industry and the work of the fisheries services, with the object of developing a better understanding of the resource and those engaged in its exploitation. This Service works closely with the Conservation and Development Service in matters concerning the conservation of fisheries and with the Inspection Service toward encouraging increased consumption of Canadian fish products in the domestic, United States and other markets.

The Economics Service has two related fields of responsibility: (1) to provide the government and the commercial fishing industry with current information, including statistical data, under the general heading of trade intelligence, and (2) to carry out studies and investigations in the primary fisheries and in the processing and distribution of fish products. In the first field, the Service works in close co-operation with the Dominion Bureau of Statistics and the Foreign Trade Division of the Economics Branch of the Department of Trade and Commerce; in the second, there is similar collaboration with the Fisheries Research Board. In both, a necessary contribution is made to the formulation of policy for fisheries management, industrial development and market services.

In addition to these regular services, the Department assists the commercial fishing industry in several special ways. To promote efficient primary fishing operations and improve the marketing of fishery products, assistance is provided for the construction of draggers and longliners and for bait-freezing and storage facilities on the Atlantic Coast. The Fishermen's Indemnity Plan affords low-cost protection from losses of boats and lobster traps through storms and other causes. The Plan, in operation since 1953, meets a long-standing need on the part of small-scale individual fishermen. Vessels valued at from $\$ 250$ to $\$ 10,000$ may be insured with payment of a premium of 1 p.c. of the appraised
value per annum. Up to Dec. 31, 1962, a total of 6,468 vessels with an appraised value of approximately $\$ 21,578,000$ had been insured under the Plan. In response to considerable demand for a similar type of protection against unusual losses of fishing gear and equipment other than vessels, a first step was taken by the introduction of regulations giving a measure of compensation to the lobster fisherman suffering abnormal losses of lobster traps, provided that a small premium has been paid by the fisherman. The premium rate varies in accordance with conditions in the different fishing areas but has been kept low. The Department also provides financial assistance to educational institutions agreeing to carry out specialized educational work among fishermen.

International Fisheries Conservation.-Conservation of the resources of the high seas can be effected only through regulation, and for this purpose international treaties have had to be made. Canada's obligations under such treaties with the United States and other countries are administered by the Department of Fisheries.

Canada and the United States have led the world in joint fisheries conservation development. Major examples of this joint effort are the International Pacific Halibut Convention, concerned with the preservation of the halibut stocks of the north Pacific and the Bering Sea, and the International Pacific Salmon Fisheries Convention, concerned with the conservation and development of the sockeye and pink salmon of the Fraser River. Investigations carried out under the auspices of Commissions appointed under these conventions, subsequent regulation and limitation of catches, and the construction of salmon fishways appear to have been successful in arresting and reversing an earlier trend toward depletion of these fisheries. Another example of restoring a depleted marine resource by international agreement and action is that of the fur seals of the Pribilof Islands in the Bering Sea. Under a treaty signed in 1911, known as the (North Pacific) Sealing Convention, pelagic sealing was prohibited while the animals were migrating to and from the Pribilofs where most of them breed. This treaty had been signed by the United States, Canada, Russia and Japan, and was one of the earliest conventions on resources of the sea. In 1941 Japan abrogated the treaty and the following year Canada and the United States signed a Provisional Fur Seal Agreement under which Canada, in return for abstaining from pelagic sealing, received 20 p.c. of the annual catch, which was supervised by the United States. A conference to re-negotiate the original convention was begun in Washington in November 1955 and a new settlement was signed by the original four countries on Feb. 9, 1957.

In 1949 the Government of Canada became a signatory, along with nine other countries, to the International Northwest Atlantic Fisheries Convention which came into force in 1950. The Commission established under this Convention, with headquarters at Halifax, N.S., makes scientific investigations of the fishery resources of the northwest Atlantic. The Commission has no regulatory powers but can make recommendations to the respective governments regarding measures that may be necessary for maintaining the stocks of fish that support the international fisheries in the Convention area. Treaty signatories now are: Canada, Denmark, Iceland, the United States, Britain, France, Italy, Norway, Poland, Portugal, Spain, the Federal Republic of Germany and the Union of Soviet Socialist Republics.

A step toward international action in regulating the high seas fisheries of the northern Pacific Ocean was achieved in December 1951 when Canada, the United States and Japan conferred at Tokyo. The resulting Convention was ratified by the three contracting governments and instruments of ratification were deposited at Tokyo in June 1953. The treaty is known as the International Convention for the High Seas Fisheries of the North Pacific Ocean and aims at providing the maximum sustained yield of the fishery resources of the northern Pacific non-territorial waters with each of the parties assuming obligations to encourage conservation measures. The Commission established under this Convention is studying the northern Pacific fisheries and will determine the application of the treaty principles and promote and co-ordinate the necessary scientific studies.

The seventh, and latest, 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 predator lamprey in these waters. This Convention came into force in October 1955.

Canada is a member of the International Whaling Commission and is obligated to collect biological data on whales caught by Canadian vessels. Whaling operations are conducted in some years off the coasts of Newfoundland and British Columbia.

The Fisheries Research Board of Canada.-The Fisheries Research Board is a research organization established by Act of Parliament for the purpose of conducting basic and applied research on Canada's living aquatic resources, their environment and their utilization. It is the only Canadian federal research agency in this broad field. The antecedents of the present Board go back to 1898 when a Board of Management of the Canadian Marine Biological Station, consisting of eight university professors and the Commissioner of Fisheries, was created in the Department of Marine and Fisheries. This early organization was formalized by Parliament in 1912 when by special Act it established the Biological Board of Canada. Later, in 1937, as the scope and the research responsibilities of the Board were increased the Act was revised and the Board renamed the Fisheries Research Board of Canada. The Act was revised again in 1952-53, further broadening its scope. Thus, the present Fisheries Research Board is a 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 fiveyear terms. The composition of the Board is further defined by the Act to require 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 [of 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 businessmen 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-thespot 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 Board carries out biological research through five centres across Canada, oceanographic research at two locations and technological research at five others. The Board employs approximately 800 persons, of whom about 200 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 studies 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 well known 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 shellish 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 stations located at St. Andrews, N.B., and St. John's, Nfld.; work on Arctic fisheries and on sea mammals is directed from a laboratory situated in Montreal, Que.; freshwater work is carried out from a station in London, Ont.; and work on the Pacific Coast is directed from research laboratories situated at Nanaimo, B.C. The Board operates 15 research vessels for its biological studies. These vary from small inshore and lake craft to large seagoing ships specially built for this purpose. The Board also 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 Halifax, N.S., and Nanaimo, B.C., with strong ship support from the Navy and the Department of Transport.

Technology.-Technological studies in general are aimed at making the best possible use of Canada's fish catches. Investigations are conducted toward improving methods of preserving, processing, storing and distributing fish products, as well as of utilizing all parts of the fish including parts now wasted. These include developments in refrigeration and the use of antibiotics 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 also under way. In recent years handling and processing techniques have been investigated for the purpose of increasing over-all production efficiency and improving the product.

Technological investigations on the Atlantic Coast are carried out at research laboratories situated at Halifax, N.S., and Grande Rivière, Que., and applied work for Newfoundland is carried out at a Technological Unit at St. John's. For inland areas there is a Technological Unit in London, Ont., and a Technological Research Laboratory in Vancouver, B.C., undertakes investigation of Pacific Coast problems.

The Fisheries Prices Support Board.-Under the Fisheries Prices Support Act passed in 1944, this Board was set up in July 1947 to recommend to the Government pricesupport 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 co-operative firms in the industry, representative of the various fish-producing 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 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 $\$ 25,000,000$ but only on recommendation of the federal Treasury Board and authorization of the Governor in Council.

The Board maintains a small staff for administrative activities. The work is closely integrated with that of the Department's Economics Service and, where possible, services required by the Board are carried out by Department personnel. The Board has carried out field surveys on market conditions and possibilities and on factors affecting the income of fishermen in the various producing areas. The financial position of fishermen is kept under continuous review and recommendations are made to the Government on the basis of the findings. Special investigations are made when serious problems arise in particular areas.

## 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 $\$ 160$ per ton for newly constructed vessels under the Fishing Ships (Bounties) Act, 1955. The Fishing and Coastal 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 $\$ 300$ per ton for vessels measuring from 15 to less than 100 gross tons, and $\$ 150$ per ton for vessels of between 100 and 400 gross tons. An Inshore Fisheries Assistance Programme provides a maximum bounty of $\$ 10$ per 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 the operation of fisheries training schools in navigation and engineering; 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 implements more 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.

[^176]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. From its reorganization in 1949 until the end of March 1962, the Board has lent approximately $\$ 1,804,000$ for the modernization of the inshore and offshore fleets. Loans for the construction or expansion of processing plants are available through the Industrial Establishments Promotion Act under which loans may be made for facilities handling agricultural, horticultural or fishery products.

Game fisheries are the responsibility of the Department of Industry and Natural Resources. 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 Fisheries Division of the Department of Trade and Industry. The Fishermen's Loan Board and the Industrial Loan Board are administered within this Department; 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. A staff of fisheries engineers performs inspection and survey duties for the Loan Boards and provides technical assistance and advice to loan applicants and others in the fisheries and allied industries, notably the boatbuilding industry. A staff of instructors conducts training courses for fishermen in the care and maintenance of marine engines, in basic navigation and in the design, construction and maintenance of nets and other gear. This program receives substantial assistance from the Vocational Training Branch of the federal Department of Labour. 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 Fisheries Division, with financial and/or technical assistance provided by the Industrial Development Service of the federal Department of Fisheries, also organizes and conducts demonstrations of fishing methods and gear of types untried in some or all of the several fishing areas of the province.

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 the improvement of certain streams in the province with a view to aiding salmon migration. A system of salmon-rearing ponds has been established on the Medway River in Queens

County, capable of producing 500,000 smolts each year, as well as a system of troutrearing ponds on the Moser River in Halifax County with an annual capacity of $1,000,000$ fingerlings. A full-time fisheries biologist is employed by the Division.

New Brunswick.-Commercial fishing is one of the most important basic industries of New Brunswick, employing more than 6,500 fishermen with annual earnings of over $\$ 9,000,000$, as well as about 2,800 plant workers. The annual marketed value of fish products is about $\$ 32,000,000$.

The fisheries of New Brunswick, both tidal and inland, are under the jurisdiction of the federal Department of Fisheries and angling in Crown waters is under the jurisdiction of the provincial Department of Lands and Mines. To supplement the activities of the federal Department of Fisheries and to establish closer liaison between the fishing industry and various government departments and agencies, both federal and provincial, the New Brunswick Government created in 1946 a Fisheries Branch and a Fishermen's Loan Board within its Department of Industry and Development.

Since its inception, the Fishermen's Loan Board has disbursed more than $\$ 7,500,000$ for the construction of fishing vessels and the purchase of modern equipment and diesel motors for fishermen of the province. Loans of $\$ 1,500$ to $\$ 2,500$ are made available to inshore fishermen for the purchase of lobster boats and engines, and amounts of $\$ 10,000$ to $\$ 60,000$ to offshore fishermen for the building and equipping of modern longliners, Danish seiners and draggers. These amounts represent the net amount lent to fishermen, which is about 70 p.c. of the total cost of the vessels after deducting the required downpayment and the Federal Government subsidy of $\$ 225$ per gross ton. New Brunswick now has a fleet of 92 groundfish draggers and 25 longliners and Danish seiners.

New designs of fishing vessels are under continuing study by the technical staff of the Fisheries Branch in co-operation with the federal Department of Fisheries, naval architects, boatbuilders and fishermen. A certain pattern of standardization is followed to keep building and maintenance costs at the lowest level, because fishing in New Brunswick is generally a marginal operation. Multi-purpose types have been successfully introduced in the inshore fisheries of the Gulf of St. Lawrence area. Modified versions of the 65 -foot groundfish dragger, equipped with more powerful diesel engines and bigger equipment have proven to be more efficient than the original type. A prototype 84 -foot steel stern trawler of Norwegian design, with a reinforced hull permitting winter operation in ice, was launched at Bathurst in June 1962 and two larger units of Dutch design were built at Saint John. A second unit of the same design as the prototype was put in service later in the year and contracts were awarded for the construction of two 92 -foot steel stern trawler/purse seiners, basically of the same design, which will operate as tuna seiners during the summer months on the first commercial tuna fishing operation in Eastern Canada. All these vessels are eligible for the 50-p.c. subsidy on trawlers granted by the Canadian Maritime Commission.

Exploratory projects aimed at improving fishing boats and gear are carried out by the Fisheries Branch with the financial and technical assistance of the federal Department of Fisheries. After a few years of experimental fishing and demonstrations with cod gillnets, Danish seines, mid-water trawls, mechanical clam diggers, etc., these new types of gear are being used by commercial fishermen along the New Brunswick coast. Practical training is made available by the Fisheries Branch to dragger operators and inshore fishermen during the winter season in various parts of the province. A permanent school of fisheries has been in operation at Caraquet since 1959 which conducts a three-year course (November to April). More than 30 young fishermen from 17 to 30 years of age attend each year.

Quebec.-The Quebec Government, through its Department of Industry and Commerce, gives much consideration to the administration of the commercial fisheries of the province. For the benefit of producers and fishermen, it operates a network of cold storage plants for the freezing and preservation of fish. The network comprises 60 plants, together having a daily freezing capacity of 500 tons and a storage capacity of $25,000,000 \mathrm{lb}$. of fish.

These plants also perform a valuable service to fishermen by providing them with frozen bait and ice. In addition, the Department owns and maintains 123 stations in small fishing ports where fish is kept under proper conditions while awaiting collecting trucks or boats, and also operates 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 at Quebec City with an office at Gaspe for the administration of cold storage plants. Fish inspection is carried out by federal inspectors who are vested with 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 obtaining high-quality products. The Fisheries Training School at Grande Rivière gives to fishermen of all ages the opportunity of taking free theoretical and practical courses in fishery, and the Superior School of Fisheries at Ste. Anne de la Pocatière conducts a four-year course for technologists. Encouragement is given to the co-operative associations of fishermen through the Social Economic Service of the latter institution. Under a maritime credit system, fishermen may obtain loans from credit unions for the purchase of boats and gear. The fish trade is promoted through advertising campaigns in newspapers and magazines, cooking demonstrations, educational films and the free distribution of fish recipes and publicity leaflets as well as through exhibits at fairs.

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. At the end of 1962, the fishing fleet of Quebec consisted of 65 draggers, 10 longliners and 49 Gaspésiennes or small longliners, and four Danish seiners, representing an investment of over $\$ 4,000,000$. After deduction of the federal subsidy of $\$ 165$ per gross ton, the cost to the fishermen was approximately $\$ 3,400,000$.

Biological and hydrographical research in the Gulf of St. Lawrence is directed by the Marine Biology Station at Grande Rivière. The Department also operates a Limnological Laboratory at Quebec City for studying the biology of the freshwater fish of the St. Lawrence River and its tributaries. The Quebec Aquarium at Quebec City exhibits freshwater and saltwater fish in 30 large tanks.

Sport Fisheries.-The Department of Tourism, Game and Fish exercises jurisdiction over the inland waters; it employs 350 full-time wardens. Licences are required for sport fishing and hunting, the revenue from which is applied to the improvement of fishing and hunting conditions. Five hatcheries are maintained at strategic points throughout the province-St. Faustin, Lachine, Lac Lyster, Tadoussac and Gaspe. These establishments distribute speckled trout, Atlantic salmon and grey trout fry, maskinonge fingerlings and older fish.

The Department administers five parks and 13 reserves in all of which, except for Mount Orford Park, excellent fishing may be found. 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 Romaine River, the St. Jean River, the Petite Cascapédia River, the Matane River and the Port Daniel River. A joint committee composed of departmental officials and the directors of the larger fish and game associations studies 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. The Branch operates under the authority of the federal Fisheries Act, the Special 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 3,200 persons directly and for many more indirectly, and produces an annual yield of from $35,000,000 \mathrm{lb}$. to $45,000,000 \mathrm{lb}$. of fish. The landings of fish in 1962 amounted to over $62,000,000 \mathrm{lb}$. This figure exceeds by more than $2,000,000 \mathrm{lb}$. the previous record catch of 1956. Very heavy catches of smelt and of yellow perch accounted largely for the greater than average catch. The industry, although widely scattered throughout the province, is centred chiefly on the Great Lakes, particularly Lake Erie which is the most productive of these lakes. 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 the most common gillnets, pound-nets and trap-nets, 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 steam-driven wooden tugs, such aids as depth-sounding devices, radar, ship-toshore 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 for smelt is being carried out experimentally in Lake Erie. This fishing technique is new in the Ontario fishery but has been proven very efficient in harvesting smelt on a year-round basis in this lake.

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 sports 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 forestry 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, Hills 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 of fish parasites have been initiated.

A selective breeding experiment concerning the hybrid between lake trout and speckled trout is progressing favourably. The deep-swimming character of the lake trout and the character of maturity at early age of the speckled trout are those being selected for combination in the hybrid.

Co-operation by Ontario in the field of gear development is being extended through the Federal-Provincial Committee for Ontario Fisheries and in the field of sea lamprey control through the Great Lakes Fishery Commission.

Manitoba.-The Province of Manitoba possesses a very extensive and valuable freshwater fishing industry. Its fishing waters extend from the international boundary to the far northern reaches of the province and include approximately $39,000 \mathrm{sq}$. miles of lake and stream. In 1962 the commercial industry produced $30,661,500 \mathrm{lb}$. of fish valued at $\$ 5,663,000$ and provided full- or part-time employment for 5,018 fishermen and for at least 6,000 persons engaged in fish processing, transportation, boat-building and other related industries.

Some 1,600 commercial fishing boats are in operation throughout the province, varying in size from diesel lake freighters to small skiffs powered by outboard motors. The value of these boats together with nets and other equipment is estimated to be $\$ 3,285,000$. The largest single item is gillnets; 113,472 , having an estimated value of $\$ 1,826,000$, were in use. New types of gear are continually being tested to determine their efficiency and cost under Manitoba's fishing conditions.

The freshwater fisheries of the province are administered by the Fisheries Branch of the Department of Mines and Natural Resources. Fishery regulations are enforced by the use of a fleet of modern patrol boats during the open-water season and a fleet of bombardiers and light trucks during the winter season, and remote operations are supervised by the use of departmental aircraft. All patrol units are equipped with two-way communication systems. In the management of the fisheries resources, fish culture plays an important role. Four main hatcheries are in operation, three of them to provide stock for commercial fishing waters. In addition, two seasonal spawn camps are operated to provide lake trout, whitefish and pickerel eggs which are subsequently reared and planted. Biological research and investigations include pollution studies, analysis of fishing success, spawning habits, sampling of catch to determine year, class, abundance and fish growth, tagging to chart migratory patterns and fish mortality, and the collecting of other data necessary for sound management of the fishery resources. To ensure quality fish products, the Fisheries Branch, in co-operation with the Department of Health, maintains a continuing program of inspection and plant improvement to meet the sanitation standards set out under the Public Health Act.

Sport Fisheries.-Angling is becoming increasingly popular in Manitoba both in summer and winter; in the 1961-62 season more than 100,000 licences were issued, 13,731 of them to non-residents. The Department has a program under which certain lakes are selected each year for fish eradication after which they are re-stocked with rainbow and speckled trout. In 1962 two new species were introduced to the province-Kokanee, a landlocked sockeye salmon, and the maskinonge, a prized species of sport fish. This program has diversified fishing in southern Manitoba where these species did not formerly occur. One of the province's four hatcheries is operated expressly for the production of sport fish.

Saskatchewan.-Almost 32,000 sq. miles of fresh water, about one eighth of Saskatchewan's surface area, provide the basis for the province's fishing industry. The administration of the fisheries, which includes the planning of policies and the development of programs to insure their proper management and utilization, is the responsibility of the Fisheries Branch of the Department of Natural Resources, with head office at Prince Albert. The Branch has three main divisions-Fish Management (Commercial and Sport Fisheries Sections), Fish Research and Fish Culture.

During the year ended Mar. 31, 1962, Saskatchewan became the highest Canadian producer of whitefish and lake trout; $7,596,806 \mathrm{lb}$. of whitefish were harvested and $2,161,846$
lb. of lake trout. Approximately 1,500 commercial fishermen harvested a record of $14,515,030 \mathrm{lb}$. of fish (all species) with a market value of $\$ 3,165,696$. The value of this production to the primary producer was $\$ 1,385,423$. The 14 processing plants operating in the province produced $2,682,149 \mathrm{lb}$. of fillets. There has been noted improvement in handling and processing methods. A program for the development of improved harvesting techniques and production equipment is being undertaken to assist the commercial fisherman to increase his efficiency as a producer. Interest has been expressed by the fishermen in a boat-building program, which has been facilitated by the Fisheries Branch providing the blue prints and assisting in the construction of boats in a number of fishing areas.

During the 1961-62 fiscal year, 1,256 domestic fishing licences were issued and an estimated $1,256,000 \mathrm{lb}$. of fish harvested; 276 free Indian permits were issued and 73 fur farm fishing licences. Mink ranchers utilized $5,610,310 \mathrm{lb}$. of coarse fish (mainly burbot, suckers and cisco). Sport fishing continues to be the main outdoor recreational attraction in the province; in 1961-62, 96,623 angling licences were sold, 87,777 of them to residents.

During the past 15 years, biological and fisheries investigations have been carried out on major water bodies ranging from the Precambrian Shield to southern agricultural areas. Study projects are conducted by the Fish Research Division to: (1) determine productivity of water bodies; (2) secure information on relationship of fish species; (3) investigate ecology and assess factors which may affect environment of fish; (t) develop techniques to achieve maximum harvest of fish populations without prejudice to continued production. Among the 11 major projects carried out during 1962 was the examination of saline lakes reported to contain brine shrimp (Artemia salina); observations suggest that populations of brine shrimp exist in most of the major sodium sulphate lakes of Saskatchewan. Basic limnological and fisheries surveys were continued on lakes in the Precambrian area, along the highway from Lac la Ronge to the Churchill River and the Hanson Lake road and on provincial park lakes. The creel census project on Lac la Ronge was carried out for the twelfth consecutive year.

Lake trout, northern pike, pickerel (walleye), rainbow and eastern brook trout eggs were incubated and hatched at the Fish Culture Station located at Fort Qu'Appelle. In addition, 215,000 Kokanee fingerling were stocked in Madge Lake on an experimental basis and whitefish fry were stocked in four water bodies. In all, 71 lakes were stocked with 29,827,000 fry, 576,550 fingerling and 3,157 yearling and adults.

Alberta.-Commercial and game fishing is administered by the Fish and Wildlife Division of the Department of Lands and Forests under authority of the Fisheries Act (Canada) and the Fishery Act (Alberta).

Commercial production of fish from Alberta waters in 1962 amounted to $9,263,000 \mathrm{lb}$. which had a market value of $\$ 1,416,000$. This represented a considerable decrease from the production of the previous year, the result of a 50-p.c. reduction in the catch from Lesser Slave Lake which usually amounts to about one half the provincial total. Whitefish accounted for about one third of the catch and 60 p.c. of the market value; other fish taken in order of market value were pickerel (walleye), tullibee-a low-priced animal food fish-northern pike, lake trout, yellow perch, burbot, sucker and goldeye.

Fisheries research at the Alberta Biological Station at Gorge Creek during 1962 involved a study of the relationship between stocking rates and the mortality of hatchery trout stocked in streams. Biological studies and investigations included sampling of populations to determine growth and abundance, analysis of basic lake productivity, and comprehensive continuing studies of major commercial lakes. In connection with sport fisheries, eleven lakes and a number of streams in the North Saskatchewan, Athabasca and Churchill drainages were examined and coarse fish removed with the use of chemicals in seven lakes and three streams in preparation for trout stocking. Study of the recovery by anglers of hatchery-reared trout was continued on Carbondale River and Jumping Pound Creek and evaluation of trout-stocking practices in lakes was conducted by creel census at two locations in the province.

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 scientific 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 rests with the federal authority. The ownership of the fisheries in the non-tidal waters is vested in the Crown in the right of the province, as are the shell fisheries such 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 restocking 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.

## Section 3.-Fishery Statistics

The review of commercial fishing and marketing given in Section 1, pp. 606-609, covers the situation in 1962 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 industry and the fish products industry were those for 1961 contained in the following Subsections.

## Subsection 1.-Primary Production

Atlantic Coast fishermen had a better-than-average year in 1961. Although the quantity of all fish landed was down 10 p.c., higher unit prices for most species brought the value received by fishermen up to $\$ 59,004,000$ compared with $\$ 59,763,000$ in 1960 . Lobster, the major money-maker for the third consecutive year, had a landed value of $\$ 18,054,000$, followed by cod at $\$ 15,646,000$, haddock $\$ 4,647,000$, flounder and sole $\$ 3,311,000$ and scallops $\$ 3,082,000$.

The Newfoundland catch amounted to $503,079,000 \mathrm{lb}$. valued at $\$ 14,922,000$, compared with the record $573,771,000 \mathrm{lb}$. valued at $\$ 15,856,000$ landed in 1960 . Strong competition for supplies by freezing plants to meet an expanded export demand for frozen groundfish gave fishermen higher returns for their catch. The cod fishery, with landings of $328,052,000$ lb. valued at $\$ 9,028,000$ in 1961, remains the top fishery for Newfoundland.

The 1961 Nova Scotia catch of $439,662,000 \mathrm{lb}$. valued at $\$ 27,741,300$ was up 2.5 p.c. over the 1960 quantity but down slightly from the 1956-60 average. Heavier landings of haddock, herring and scallops and higher unit prices for most species gave the fishermen of that province their highest recorded return. Lobster, cod, haddock and scallops, in that order, were the main species. The fact that the annual herring run chose to come up the

Nova Scotia side of the Bay of Fundy instead of the New Brunswick side was mainly responsible for a 37 -p.c. drop in New Brunswick landings in 1961; they amounted to $144,464,000 \mathrm{lb}$. compared with $228,121,000 \mathrm{lb}$. in 1960 and their value was $\$ 7,624,800$ compared with $\$ 9,206,100$. Smaller landings of lobster and smelts also added to the decline. In Prince Edward Island declines were reported in landings of most species, the total quantity dropping from $42,283,000 \mathrm{lb}$. in 1960 to $36,664,000 \mathrm{lb}$. and the value from $\$ 4,639,600$ to $\$ 4,489,100$.

Quebec fishermen landed $109,174,000 \mathrm{lb}$. of fish in 1961 valued at $\$ 1,710,000$, an increase of 10 p.c. in quantity and 5 p.c. in value over 1960. Cod with a landed value of $\$ 1,810,100$ and lobster at $\$ 1,086,500$ remained the major species taken.

The British Columbia fishery was above normal in 1961, recording total landings of $635,550,000 \mathrm{lb}$. valued at $\$ 38,778,000$ compared with $335,040,000 \mathrm{lb}$. valued at $\$ 27,961,000$ in 1960; this was a $90-$ p.c. gain in quantity and a 39-p.c. gain in value. Increased landings of coho, pinks and sockeye brought the total salmon landings up to $121,634,000 \mathrm{lb}$. against $75,153,000 \mathrm{lb}$. for the previous year. The herring fishery, with good markets for meal, more than doubled its 1960 catch, landing $448,433,000 \mathrm{lb}$. valued at $\$ 4,589,000$. Halibut landings, on the other hand, were down 8 p.c. to $24,951,000 \mathrm{lb}$. but the value rose 21 p.c. from $\$ 4,379,000$ in 1960 to $\$ 5,316,000$. The groundfishery as a whole was down from the previous year because trawlers found it more profitable to transport salmon from the seiner to the cannery than to fish.

The 1961 inland fishery had landings of $123,073,000 \mathrm{lb}$. valued at $\$ 12,450,000$, little changed from 1960.

## 1.-Quantity and Value of Sea and Inland Fish Landed, by Province, 1957-61

Note.-Figures for the years 1918-56 are given in the corresponding table of previous Year Books, beginning with the 1947 edition.

| Province or Territory | 1957 | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quantity |  |  |  |  |
|  | '000 lb. | '000 lb. | ' 000 lb . | '000 lb. | '000 lb. |
| Newfoundland | 575,825 | 464,024 | 562,228 | 573,771 | 503,079 |
| Prince Edward Island. | 39,635 | 39,078 | 42,025 | 42,283 | 36,664 |
| Nova Scotia....... | 438,687 | 468,462 | 423,273 | 430,310 | 439,662 |
| New Brunswick | 192,299 | 160,972 | 227,994 | 232,662 | 147,925 |
| Quebec. | 140,845 | 123,868 | 112,954 | 98,851 | 109,174 |
| Ontario. | 51,109 | 47,175 | 48,984 | 47,600 | 54,951 |
| Manitoba. | 31,571 | 31,929 | 31,052 | 31,944 | 30,658 |
| Saskatchewan | 11,065 | 12,600 | 12,550 | 14,530 | 14,515 |
| Alberta. | 10,415 | 11,482 | 12,664 | 15,852 | 11,317 |
| British Columbia. | 490, 187 | 650,589 | 613,597 | 335,040 | 635,550 |
| Northwest Territories. | 6,584 | 5,894 | 5,747 | 5,543 | 5,676 |
| Totals | 1,988,222 | 2,016,073 | 2,093,068 | 1,828,386 | 1,989,171 |
| Sea Fish. | 1,868, 633 | 1,901, 460 | 1,975, 856 | 1,705,362 | 1,866,098 |
| Inland Fish | 119,589 | 114,613 | 117,212 | 123,024 | 123,073 |
|  | Value |  |  |  |  |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Newfoundland. | 13,672 | 11,312 | 14,529 | $\begin{array}{r} 15,856 \\ 4,640 \end{array}$ | $\begin{array}{r} 14,922 \\ 4,489 \\ 27,741 \end{array}$ |
| Prince Edward Island. | 3,550 | 3,754 | 4,287 |  |  |
| Nova Scotia.......... | 23,084 | 24,954 | 27,112 | 26,094 |  |
| New Brunswick | 7,014 | 7,499 | 8,763 | 9,358 | 7,7304,710 |
| Quebec. | 4,068 | 4,195 | 4,316 | 4,504 |  |
| Ontario. | 7,047 | 7,271 | 4,866 | 4,983 | 4,710 5,745 |
| Manitoba. | 3,279 | 3,540 | 3,757 | 3,867 | 3,174 1,385 |
| Saskatchewan | 939 | 1,091 | 1,190 | 1,3671,159 | 1,385 |
| Alberta........... | 854 | - 879 | 1,016 |  | 88338,778675 |
| British Columbia..... | 30,021 | 51,352 | 34,995 | 27,961 |  |
| Northwest Territories. | 720 | 682 | 703 | 702 | 675 |
| Totals | 94,248 | 116,529 | 105,534 | 100,491 | 110,232 |
| Sea Fish <br> Inland Fish. | 80,777 | 102,505 | 93,431 | 87,725 | $\begin{aligned} & 97,782 \\ & 12,450 \end{aligned}$ |
|  | 13,471 | 14,024 | 12,103 | 12,766 |  |

## 2.-Quantity and Value Landed and Marketed Value of the Chief Commercial Fish, by Selected Species, 1960 and 1961

| Area and Species | Quantity Landed ${ }^{1}$ |  | Value Landed ${ }^{2}$ |  | Marketed Value of Products ${ }^{2}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1960 | 1961 | 1960 | 1961 | 1960 | 1961 |
|  |  |  |  |  |  |  |
| Groundfish | 963,806 | 885,249 | 28,844 | 28,523 | 63,006 | 67,090 |
| Catfish | 3,508 | 3,787 | 104 | 113 | 309 | 368 |
| Cod. | 604,621 | 516,861 | 16,538 | 15,646 | 34,821 | 36,652 |
| Flounder and sole | 121,434 | 107,265 | 3,780 | 3,311 | 8,638 | 7,298 |
| Haddock. | 95,126 | 118,395 | 3,685 | 4,647 | 8,961 | 11,524 |
| Hake. | 16,857 | 16,733 | 326 | 349 | 540 | 603 |
| Halibut | 6,618 | 6,143 | 1,712 | 1,668 | 2,479 | 2,137 |
| Pollock | 57,604 | 49,655 | 1,262 | 1,067 | 3,092 | 3,318 |
| Redfish | 46,859 | 56,216 | 1,172 | 1,458 | 2,689 | 3,653 |
| Other. | 11,179 | 10,194 | 265 | 264 | 1,477 | 1,537 |
| Pelagic and Estuarial. | 297,716 | 238,832 | 8,093 | 6,842 | 22,935 | 18,603 |
| Alewives............. | 7,673 | 7,712 | 144 | 150 | ${ }^{460}$ | 259 |
| Herring. | 246,329 | 193,369 | 3,682 | 2,756 | 6,901 | 4,970 |
| Mackerel | 13,138 | 14,118 | 724 | 1694 | 1,218 | 1,376 |
| Salmon. | 3,577 | 3,466 | 1,461 | 1,417 | 2,350 | 1,993 |
| Sardines |  |  |  |  | 9,026 | 5,661 |
| Smelts. | 3,443 | 2,267 | 347 | 221 | 638 | 292 |
| Swordfish | 3,890 | 3,196 | 1,342 | 1,238 | 1,415 | 1,635 |
| Other. | 19,666 | 14,704 | 393 | 366 | 947 | 2,417 |
| Molluses and Crustaceans | 77,658 | 86,140 | 20,862 | 22,081 | 33,683 | 32,255 |
| Clams - |  |  |  |  |  |  |
| Quahaugs. | 404 | 199 | 16 | ${ }_{15}^{8}$ | 18 | ${ }^{8}$ |
| Soft-shelled | 2,718 | 3,225 | ${ }^{144}$ | ${ }^{156}$ | - 280 | 316 25,957 |
| Oysters. | 51,517 3,510 | 47,547 4,083 | 18,031 | 18,054 | 28,818 | 25,540 |
| Scallops. | 7,716 | 10,516 | 2,021 | 3,082 | 3,465 | 4,322 |
| Other. . | 11,793 | 20,570 | 247 | 326 | 684 | 1,112 |
| Other. | ... | ... | 1,964 | 1,558 | 5,123 | 6,863 |
| Totals, Atlantic Coast. | ... | $\ldots$ | 59,763 | 59,004 | 124,767 | 124,811 |
| Pacific Coast |  |  |  |  |  |  |
| Groundfish | 46,124 | 40,701 | 5,652 | 6,429 | 9,339 | 9,485 |
| Cod | 5,244 | 3,439 | 260 | 170 | 794 | 689 |
| Halibut ${ }^{\text {a }}$ | 27,161 | 24,951 | 4,379 | 5,316 | 6,830 | 7,427 |
| Ling cod. | 4,516 | 4,518 | 402 | 424 | 593 | 569 |
| Sablefish | 1,044 | 668 | 170 | 118 | 254 | 147 |
| Sole. | 7,637 | 6,080 | 407 | 356 | 795 | 552 |
| Other | 822 | 1,045 | 34 | 45 | 73 | 101 |
| Pelagic and Estuarial | 270,407 | 578,700 | 20,843 | 31,012 | 41,505 | 66,668 |
| Herring. | 187,675 | 448,433 | 2,178 | 4,589 | 3,450 | 8,207 |
| Salmon. | 75,153 | 121,634 | 18,401 | 26,152 | 35,963 | 57,314 |
| Chum. | 20,313 | 14,602 | 3,106 | 1,917 | 5,736 | 4,198 |
| Coho. | 12,845 | 22,503 | 4,986 | 6,569 | 7,457 | 12,321 |
| Pink | 16,915 | 49,525 | 2,014 | 5,696 | 5,657 | 17,186 |
| Sockeye | 15,470 | 26,595 | 5,453 | 8,860 | 11,489 | 18,621 |
| Spring. | 9,364 | 8,200 | 3,380 | 3,064 | 4,988 | 4,426 |
| Other | 245 | 204 | 62 | 46 | 1706 | 712 |
| Tuna. | 468 | 10 | 66 | 2 | 1,940 | 935 |
| Other | 7,111 | 8,623 | 198 | 269 | 152 | 212 |
| Molluses and Crustaceans. | 16,976 | 14,554 | 1,286 | 1,111 |  | 2,335 |
| Clams, butter, little neck, razor | 4,348 | 2,337 | 133 | 1, 76 | 535 | , 324 |
| Crabs..... | 5,068 | 4,602 | 515 | 470 | 1,200 | 1,144 |
| Oysters......... | 5,879 | 6,388 | 339 | 369 | 405 | 480 |
| Shrimps and prawns Other | 1,678 | 1,207 | 299 | 194 | 528 | 367 |
| Other. | ... | ... | 181 | 226 | 462 | 270 |
| Totals, Pacific Coast | ... | ... | 27,962 | 38,778 | 53,983 | 78,758 |

For footnotes, see end of table, p. 624.
2.-Quantity and Value Landed and Marketed Value of the Chief Commercial Fish, by Selected Species, 1960 and 1961 -concluded

| Area and Species | Quantity Landed ${ }^{1}$ |  | Value Landed ${ }^{2}$ |  | Marketed Value of Products ${ }^{2}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1960 | 1961 | 1960 | 1961 | 1960 | 1961 |
|  | '000 lb. | '000 lb. | \$'000 | \$'000 | \$'000 | \$'000 |
| Inland |  |  |  |  |  |  |
| Freshwater Fish. | 105,228 | 105,743 | 12,031 | 11,854 | 18,471 | 18,669 |
| Bass. | 3,304 | 3,413 | 298 | 308 | 335 | 347 |
| Catfish. | 1,234 | 1,146 | 199 | 188 | 220 | 204 |
| Herring, lake (cisco) | 2,226 | 1,854 | 82 | 67 | 92 | 76 |
| Perch........ | 13,814 | 19,723 | 1,413 | 2,005 | 1,624 | 2,305 |
| Pickerel (blue)... |  |  | ${ }^{2}$ | , 1 |  |  |
| Pickerel (yellow) | 13,890 | 13,346 | 3,020 | 2,455 | 4,600 | 4,014 |
| Pike... | 7,958 | 7,864 | 457 | 409 | 1,093 | 962 |
| Saugers.. | 4,741 | 3,300 | 1,048 | 566 | 1,614 | 987 |
| Sturgeon. | 518 | 567 | 308 | 351 | 340 | 378 |
| Trout.. | 3,947 | 3,891 | 542 | 537 | 944 | 1,163 |
| Tullibee | 12,582 | 10,398 | 761 | 780 | 960 | 984 |
| Whitefish | 27,068 | 27,184 | 3,494 | 3,814 | 5,992 | 6,569 |
| Other. | 13,941 | 13,055 | 407 | 373 | 655 | 679 |
| Other. | 17,796 | 17,330 | 736 | 596 | 784 | 641 |
| Totals, Inland <br> Grand Totals | 123,024 | 123,073 | 12,767 | 12,450 | 19,255 | 19,310 |
|  | ... | ... | 100,492 | 110,232 | 198,005 | 222,879 |

[^177]3.-Persons Employed in the Primary Fishing Industry, by Province, 1959-61

| Province or Territory | Sea Fisheries |  |  | Inland Fisheries |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1959 | 1960 | 1961 | 1959 | 1960 | 1961 |
|  | No. | No. | No. | No. | No. | No. |
| Newfoundland. | 18,430 | 18,291 | 18,756 | - | - | - |
| Prince Edward Island. | 3,260 | 3,274 | 3,464 | - |  | - |
| Nova Scotia. | 13,012 | 12,780 | 12,578 | - |  |  |
| New Brunswick | 6,211 | 6,012 | 6,083 | 171 | 163 | 145 |
| Quebec.. | 5,387 | 4,989 | 3,771 | 1,037 | 1,015 | 1,173 |
| Ontario.. | , | , |  | 3,527 | 3,409 | 3,059 |
| Manitoba. | - | - | - | 5,330 | 5,289 | 5,018 |
| Saskatchewan | - | - | - | 1,650 | 1,700 | 1,750 |
| Alberta. |  |  |  | 6,089 | 5,730 | 5,422 |
| British Columbia...... Northwest Territories | 15,456 | 15,159 | 16,805 | - 503 | ${ }^{-} 360$ | - 336 |
| Totals | 61,756 | 60,505 | 61,457 | 18,307 | 17,666 | 16,903 |

## Subsection 2.-The Fish Products Industry

The Census of Industry survey of the fish products industry covers establishments engaged in the processing of fish at the secondary industrial level. Some fishermen process the fish they land to a certain degree but their operations are not included nor are the minor amounts of processing done in the inland areas (Ontario, the Prairie Provinces, and the Northwest Territories). In 1961, products of fish processing establishments had a selling value of $\$ 169,825,300$, slightly higher than in 1960 . The East Coast fish plants contributed $\$ 96,838,200$ compared with $\$ 101,319,900$ in the previous year and those of British Columbia $\$ 72,987,100$ compared with $\$ 67,564,000$.

## 4.-Summary Statistics of the Fish Products Industry, 195\%-61

Note.-Based on revised Standard Industrial Classification and New Establishment Concept. Figures for 1957-60 have been revised since publication of the 1962 Year Book in order to maintain comparability.

| Item | 1957 | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Fstablishments......................... . No. | 410 | 426 | 400 | 387 | 340 |
| Newfoundland. | 36 | 36 | 37 | 38 | 31 |
| Prince Edward Island | 22 | 21 | 19 | 16 | 18 |
| Nova Scotia. . . . . . . . . . . . . . . . . . . . . . | 120 | 134 | 138 | 131 | 122 |
| New Brunswick......................... | 122 | 126 | 93 | 89 | 67 |
| Quebec................................ " | 66 | 65 | 69 | 69 | 56 |
| British Columbis....................... " | 44 | 44 | 44 | 44 | 46 |
| Employees............................... No. | 13,067 | 13,234 | 12,933 | 13,399 | 13,542 |
| Salaries and wages........................ §'000 | 27,419 | 28, 243 | 27,732 | 29,829 | 30,433 |
| Fuel and electricity..................... " | 2,930 | 2,869 | 2,941 | 2,701 | 2,951 |
| Cost of materials used. | 89,740 | 114,853 | 95,380 | 94,607 | 110,693 |
| Value added by manufacture | 1 | 56,861 | 47,853 | 48,679 | 59,475 |
| Value of shipments....................... " | 137,291 | 169,005 | 147,694 | 155,362 | 169,826 |

${ }^{1}$ Not available because of lack of inventory data.
The most important products of the fish products industry are canned salmon in British Columbia and frozen groundfish fillets on the Atlantic Coast. With the Pacific salmon catch back to normal in 1961, production of canned salmon at $1,405,159$ cases was more than double the 1960 figure of 631,150 cases; value increased by 103 p.c. to $\$ 46,151,000$.
5.-Pacific Coast Production of Canned Salmon, 1957-61

| Species | 1957 | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quantity (cases 48 lb.$)$ |  |  |  |  |
| Chum. | 239,641 | 230,636 | 133,129 | 86,819 | 95,385 |
| Coho | 193,058 | 131,527 | 213,105 | 91,505 | 241,379 |
| Pink. | 751,609 | 451,802 | 458,596 | 219,563 | 661,291 |
| Sockeye. | 228,452 | 1,074,304 | 256,171 | 226,844 | 398,204 |
| Spring. | 10,480 | 10,704 | 15,230 | 5,915 | 7,921 |
| Steelhead | 1,318 | 1,205 | 1,256 | 504 | 979 |
| Totals. | 1,424,558 | 1,900,178 | 1,077,487 | 631,150 | 1,405,159 |
|  | Value |  |  |  |  |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Chum. | 4,490 | 3,792 | 2,662 | 1,787 | 2,050 |
| Coho. | 5,497 | 3,997 | 7,919 | 3,908 | 8,634 |
| Pink. | 15,763 | 9,437 | 11,372 | 5,487 | 16,767 |
| Sockeye. | 9,265 | 41,240 | 12,103 | 11,407 | 18,468 |
| Steelhead. | 242 38 | 252 31 | 360 45 | 163 15 | 202 30 |
| Totals. | 35,295 | 58,749 | 34,461 | 22,767 | 46,151 |

Increased demand for Atlantic Coast frozen groundfish fillets and blocks resulted in a 12-p.c. increase in production over 1960. The quantity produced amounted to $153,961,000$ lb . in 1961 compared with $137,500,000 \mathrm{lb}$. in 1960 and the value increased 14 p.c. to $\$ 35,224,000$. Other important items included lobster products, dried salted fish, pickled fish and canned sardines.
6.-Atlantic Coast Production of Frozen Fillets and Fish Blocks, 195\%-61

| Area and Species | 1957 | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quantity |  |  |  |  |
|  | '000 lb. | '000 lb. | '000 lb. | '000 lb. | '000 lb. |
| Maritimes | 65,834 | 69,639 | 71,714 | 67,600 | 75,940 |
| Cod.. | 23,995 | 26,685 | 28,674 | 24,449 | 25,989 |
| Haddock | 18,567 | 16,593 | 19,868 | 16,048 | 19,885 |
| Redfish. | 7,670 12,515 | 8,147 | 4,957 | 6,214 | 6,423 |
| Other............. | 12,50 3,087 | 11,845 6,369 | 11,200 7 | 15,623 5,266 | 13,355 10,288 |
| Quebec. | 10,243 | 10,784 | 11,791 | 12,483 | 14,012 |
| Cod.. | 8,645 | 8,779 | 9,145 | 9,458 | 10,415 |
| Other. | 1,598 | 2,005 | 2,646 | 3,025 | 3,597 |
| Newfoundland. | 52,129 | 53,975 | 58,581 | 57,447 | 64,009 |
| Cod..... | 30,275 | 32,129 | 39,688 | 36,497 | 38,309 |
| Haddock | 12,304 | 8,377 | 7,971 | 6,735 | 11,129 |
| Redfish. | 4,529 | 7,273 | 4,087 | 5,137 | 6,976 |
| Flatfish. | 4,874 | 5,864 | 6,366 | 8,589 | 6,992 |
| Other. | 147 | 332 | 469 | 489 | 603 |
| Totals, Atlantic Coast. | 128,206 | 134,398 | 142,086 | 137,530 | 153,961 |
| Cod. | 62,915 | 67,593 | 77,507 | 70,404 | 74,713 |
| Haddock | 30,917 | 24,987 | 28,076 | 22,913 | 31,119 |
| Redfish. | 13,198 | 16,867 | 10,814 | 12,887 | 15,327 |
| Flatfish........ | 17,932 | 18,182 | 18,197 | 25,523 | ${ }_{11,750}$ |
| Other........................ | 3,244 | 6,769 | 7,492 | 5,803 | 11,052 |
|  | Value |  |  |  |  |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Maritimes | 15,056 | 17,940 | 17,678 | 16,019 | 17,870 |
| Cod. | 4,605 | 5,815 | 6,052 | 4,841 | 5,522 |
| Haddock | 4,727 | 5,116 | 5,773 | 4,318 | 5,468 1,400 |
| Redfish. | 1,661 3,256 | 1,894 3,731 | 1,118 3,384 | 4,665 | 3,778 |
| Other.. | -807 | 1,384 | 1,351 | , 821 | 1,702 |
| Quebec. | 1,667 | 2,001 | 2,294 | 2,320 | 2,909 |
| Cod. | 1,350 | 1,586 | 1,747 | 1,652 | 2,102 |
| Other.. | , 317 | 1415 | 547 | , 668 | 807 |
| Newfoundland. | 10,052 | 11,508 | 12,863 | 12,542 | 14,445 |
| Cod........... | 5,471 | 6,393 | 7,885 | 7,126 | 7,967 |
| Haddock | 2,416 | 1,986 | 1,972 | 1,570 | 2,619 |
| Redfish. | , 853 | 1,466 | , 858 | 1,012 | 1,592 |
| Flatfish. | 1,276 | 1,583 | 2,037 | 2,728 | 2,131 |
| Other. | 36 | 80 | 111 | 106 | 136 |
| Totals, Atlantic Coast. | 26,775 | 31,449 | 32,835 | 30,881 | 35,224 |
| Cod. | 11,426 | 13,794 | 15,684 | 13,619 | 15,591 |
| Haddock | 7,151 | 7,107 | 7,818 | 5,918 |  |
| Redfish. | 2,669 4,685 | 3,622 5,452 | 2,266 5,602 | 2,639 7,758 | 3,367 6,274 |
| Flatfish. | 4,685 844 | 5,452 1,474 | 5,602 1,465 | 7,758 | 6,274 1,880 |

The value of all sea and inland fishery products processed or handled by processors, handlers and fishermen during 1961 amounted to $\$ 222,879,000$, which was 4 p.c. below the record year of 1958 when $\$ 231,540,000$ was realized but 13 p.c. above the 1960 figure of $\$ 198,005,000$. The value of Atlantic Coast seafish products was down slightly from that of the previous year but the value of British Columbia fishery products was 46 p.c. higher.

## 7.-Value of All Products of the Fisheries, by Province, 1957-61

Nore.-Figures for the years 1917-56 are given in the corresponding table of previous Year Books beginning with the 1922-23 edition. Totals for five-year intervals from 1870 are given in the 1956 edition, p. 597.

| Province or Territory | 1957 | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Newfoundland. | 26,750 | 25,746 | 31,675 | 33,783 | 33,119 |
| Prince Edward Island. | 4,410 | 5,449 | 5,961 | 7,261 | 6,093 |
| Nova Scotia. | 45,779 | $50,812 \mathrm{r}$ | $50,480{ }^{\text {r }}$ | 51,753 | 55,593 |
| New Brunswick | 22,293 | 24,623 | 28,367 | 33,130 | 26,386 |
| Quebec.. | 7,580 | 7,827 | 7,856 | 7,622 | 8,131 |
| Ontario.. | 7,928 | 8,180 | 5,475 | 5,606 | 6,464 |
| Manitobs. | 5,929 | 6,844 | 6,689 | 7,035 | 6,214 |
| Saskatchewan. | 2,010 | 2,339 | 2,596 | 2,830 | 3,166 |
| Alberta. | 1,451 | 1,450 | 1,684 | 2,021 | 1,701 |
| British Columbia. | 63,650 | 97,016 | 67,067 | 53,983 | 78,758 |
| Northwest Territories. | 1,298 | 1,235 | 1,146 | 1,075 | 1,179 |
| Totals ${ }^{1}$. | 188,018 | 231,540 | 203,040 | 198,005 | 222,879 |
| Sea Fish. | 168,769 | 210,931 | 184,879 | 178,750 | 203,568 |
| Inland Fish | 19,249 | 20,609 | 18,161 | 19,255 | 19,311 |

${ }^{1}$ Totals differ from the sum of provincial totals because salted groundfish (except boneless) are based on sales rather than production; duplications for bloaters are also removed.

## PART II.-FURS

## Section 1.-The Fur Industry*

Fur Trapping.-Without furs the history of Canada might well have been very different. It was with tales of a country teeming with fur bearers that Groseilliers and Radisson interested Charles II in 1665, leading directly to the formation of the Hudson's Bay Company, and it was with furs that the early French colonists in their settlements along the St. Lawrence River purchased their necessities from France. The early settlers soon found that although their new homeland contained boundless resources, markets were lacking for the produce of farm and woodlot, and in most cases fur trapping was the sole activity that could be counted upon to produce immediate revenue. The furs from the New World met with a ready market in Europe and, from the advent of settlement right up to the commencement of the nineteenth century, trapping remained the most important industry in Canada.

Although the relative importance of the fur industry in the Canadian economy has declined through the years, fur trapping continues to contribute substantially to the national income. Despite almost unbroken trapping activity over a period of many years, the production of wild fur bearers has been well maintained and, even in the settled areas, some varieties are still taken in large numbers. However, in most cases the wildlife has retreated before the advance of settlement so that the principal trapping areas now lie in the northern portions of the provinces and in the Northwest Territories.

Conservation measures, including the establishment of natural preserves and the protection of scarce types by limiting the catch or closing the season completely for a time, have been of material assistance in maintaining the numbers of wild fur bearers. Also, in many fur-producing areas, provincial and territorial authorities have instituted a registration system in accordance with which trapping areas are assigned to individuals on a constant basis. This system puts the responsibility on the trapper for the conservation of fur bearers in his own area, and encourages him to trap less intensively any species that show signs of becoming scarce. Prior to the allotment of individual areas, each trapper

[^178]tended to take every skin possible, with the knowledge that if he attempted to practise conservation someone else would probably come along and trap the area out completely.

In recent years, realizations for most types of wild furs have not kept pace with rising commodity prices. As a result, returns from the trapping enterprise have not been sufficiently attractive to keep trappers on their traplines on a full-time basis. Some have abandoned trapping completely, while in areas where other forms of employment are available many trappers have become full-time or part-time wage-earners, carrying on their trapping activities on week-ends or off days. This situation applies generally throughout the central and southern portion of the country, and one of the undesirable results of this part-time approach has been the failure to cover the trapping grounds adequately. Many of the less accessible areas tend to be neglected, with consequent wastage of the fur resource. However, in the northern regions trapping still plays an important part in the lives of the native Indians and Eskimos, providing an independent means of livelihood in these remote areas.

Mink Farming.-Mink farming originated in Canada in the early 1900's and has since grown to be the most important branch of fur farming. The industry apparently had its beginnings in Eastern Canada around 1910 but, being completely overshadowed at that time by the thriving silver fox business, very little in the way of records is available for the early years. Originally most ranched mink were raised on farms where the main business was the production of silver foxes and, since ranched mink pelt realizations were far from attractive at that time, it must be assumed that the raising of this species was adopted as a precaution against the recurring threat of an over-production of fox pelts. The following figures indicate the growth of the industry since 1935:-

| Year | Pelt Production | Average Realization | Year | Pelt Production | Average Realization |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | \$ |  | No. | \$ |
| 1935. | 30,558 | 10.58 | 1955. | 786,760 | 20.07 |
| 1940. | 229, 202 | 9.64 | 1960. | 1,204,077 | 14.03 |
| 1945. | 255, 968 | 21.51 | 1961.. | 1,269,050 | 14.50 |

Through the years, large numbers of live mink were exported from this country to stock farms in many parts of the world. The results of this expansion in other countries were soon apparent in the increasing quantities of mink pelts marketed each year and, as early as 1939, concern was expressed by the trade concerning the ability of the market to absorb these quantities. Perhaps fortunately for the future of the industry, the rising production coincided with the appearance on the market of the first colour mutation. Initially, all ranch mink were brown or dark brown in colour, produced through crosses of various strains of wild mink. However, around 1936 the first mutation occurred-the Silverblu or Platinum, produced from conventional dark brown parents. This mutation was quickly followed by others and breeders soon learned to produce new exciting colours, so that today there exist more than 200 types, including variations of basic shades.

The appearance on the market of this wide range of natural coloured mink supplied an enormous fillip to the industry. In addition to the popularity gained through the many natural advantages of mink, the merits of owning a mink piece have been most effectively advanced through vigorous promotional campaigns. As a result, mink has achieved a popularity far surpassing that of any other fur or, indeed, of all the remainder of the world's furs combined. It is estimated that, in 1962, of a total world trade in raw furs amounting to $\$ 350,000,000$, mink accounted for $\$ 240,000,000$ and Persian lamb for $\$ 65,000,000$.

Canada Mink Breeders' Association, the national association of Canadian mink producers, was formed in 1952 through the amalgamation of several bodies. This Association is responsible for the promotion of Canadian mink in both the domestic and overseas markets and also works closely with fur auction outlets in formulating plans for marketing the annual pelt crop. In addition, the Association assists financially the undertaking by
universities and colleges of extensive research on diseases of mink, studies of mink nutrition, genetics and general ranching practices. Funds for these undertakings are obtained by a deduction at the auction level (currently 1.5 p.c. of the sales price) made from all members' pelts sold. The better quality portion of Canada Mink Breeders' pelt crop is marketed under the name Canada Majestic, followed by the generic name of the mink type; thus, Canada Majestic Sapphire or Canada Majestic Pastel. The Canada Department of Agriculture works closely with the Association in many phases of the mink farming industry, including the dissemination of information concerning results of research on mink diseases and nutrition, undertaken at the Experimental Fur Farm, Summerside, P.E.I.

The quantities offered and average prices realized in auctions sponsored by Canada Mink Breeders' Association during the 1961-62 season were as follows:-

| Type | Quantity | Average Price | Type | Quantity | Average Price |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | \$ |  | No. | \$ |
| Dark. | 181,969 | 17.15 | Violet | 4,290 | 24.65 |
| White. | 54,537 | 13.26 | Lavender | 3,858 | 22.74 |
| Pastel... | 346.270 | 14.80 | Taupe. | 3,991 | 15.43 |
| Gunmetal | 54,834 | 17.02 | Hope.. | 2,384 | 23.36 |
| Pearl. | 56,873 | 21.17 | Sapphire. | 147,870 | 18.34 |
| Palomino. | 17,711 | 15.36 | Miscellaneous mutations. | 16,747 | 14.20 |
| Silverblu. | 25,668 1,753 | 15.45 14.83 | All Mink Pelts...... | 918,755 | 16.26 |

Fox Farming.-In 1961 there were 1,815 fox pelts produced on Canadian farms, the average realization being estimated at $\$ 10$. No improvement in the demand for ranched fox pelts has been evidenced recently, and although the fur trimmings industry is currently using large numbers of fox pelts for dyeing and trimming purposes, there has been no indication of a revival of interest in the use of fox furs for capes or garments. Prices now being realized for ranch-raised fox pelts do not cover the cost of production and those breeders who remain in the industry doubtless do so with the hope that some day a reversal of fashion will once more bring their product into demand.

Chinchilla Farming.-The production of chinchilla pelts in Canada in 1961 totalled 10,559 , an increase of some 16 p.c. over the 1960 output. In addition to the animals pelted, substantial numbers of live animals for breeding purposes were exported to various European countries where chinchilla raising is becoming increasingly popular. Currently, the bulk of the Canadian chinchilla pelt crop is "lotted" together with the United States production and sold in New York, the larger quantities resulting from this combination making it possible to produce attractive, well-matched bundles.

This luxury fur has met with an excellent market recently and an outstanding feature has been the demand from Europe, especially Italy, for finest quality chinchilla pelts. In the earlier stages of the industry, efforts of the many beginners were hampered by the low quality of much of the breeding stock that was available. However, the emphasis placed by marketing outlets on quality, together with the obvious benefits accruing to a producer marketing better grade pelts, has encouraged breeders to concentrate on herd improvement and a noticeable upgrading of much of the breeding stock has taken place.

Nutria, the only other fur bearing animal reported on Canadian farms, is raised in limited numbers.

Fur Marketing.-Up to the end of World War I, most of Canada's fur production was marketed in London, England, and in New York. In 1920, the first Canadian fur auction was held in Montreal, and shortly afterwards fur auction houses were established in Winnipeg, Edmonton and Vancouver. Today, the bulk of Canadian furs is sold through eight fur auction houses located in Montreal, North Bay, Winnipeg, Regina, Edmonton and Vancouver. At the auction sales, furs are purchased through competitive bidding by buyers who may be purchasing for their own accounts or who may represent major
firms in any part of the world; Canadian pelts are traditionally sold in the raw or unprocessed state, facilitating entry into the many countries which maintain tariffs on imports of processed furs. The fur industry contributes about $\$ 25,000,000$ annually to Canada's export trade, approximately two thirds of the annual production going outside the country.

Most Canadian ranched mink pelts are shipped directly from farm to auction house where they are sold for the account of the producer, the fur auction house charging a commission for its services based on a percentage of the selling price. A small percentage of the total catch of wild furs goes direct from the trapper to the auction house. However, because most trappers require an outlet close at hand where they can dispose of their pelts immediately in exchange for needed supplies, the bulk of Canadian wild furs passes initially from the trapper to the local dealer who is often the operator of a small country store. Here, furs from many trappers are assembled and may then be shipped to the fur auction house or may await the arrival of a travelling buyer who will add them to his larger collection before shipping.

The selling season commences in December with large offerings of fresh ranched mink pelts, and later in the same month initial quantities of the new season's wild furs become available. Trapping in the northern regions gets under way around the same time as the pelting of ranch-raised mink, but because of the slower process involved in passing from trapper to country dealer to fur auction house, major quantities of wild furs are not generally available until January. In this and succeeding months, offerings of ranched mink continue, along with quantities of the world-famed Canadian wild mink, beaver and many other varieties.

Canada's production of ranched mink pelts currently constitutes approximately one twelfth of the total value of world production of ranched mink, while the value of the wild furs produced in this country amounts to approximately one quarter of the total value of the world's production of furs in this category. The Canadian production is therefore of major importance in the world's fur industry and in recent years it has been gratifying to note that, in addition to the competition provided by Canadian and United States buyers, fur auction offerings in this country have also benefited through participation of a substantial attendance of European buyers. During the 1961-62 selling season, these people set the pace at many Canadian auction sales and their determination to take home with them the top quality merchandise contributed materially to the success of these events.

## Section 2.-Provincial and Territorial Fur Resource Management

Most of the fur resources of the provinces of Canada are under the administration of the respective provincial governments. Exceptions include those resources within the boundaries of the National Parks and the Indian reserves, and the fur resources of the Yukon and Northwest Territories, all of which are under the administration of the Federal Government. The Canadian Wildlife Service of the Department of Northern Affairs and National Resources is responsible for all Federal Government interests in wildlife resources except for those related to Indian affairs. The Canadian Wildlife Service co-operates with provincial governments and other agencies concerned and handles federal interests in relevant national and international problems. The functions of the Canadian Wildlife Service together with provincial information on wildlife resources and conservation measures are covered in Chapter I of this volume at pp. 44-52.

## Section 3.-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

[^179]trappers. In 1920 the Dominion Bureau of Statistics commenced an annual survey of 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, 1943-62

| $\begin{aligned} & \text { Year Ended } \\ & \text { June 30- } \end{aligned}$ | Pelts |  | Percentage of Value Sold from Fur Farms ${ }^{1}$ | $\begin{aligned} & \text { Year Ended } \\ & \text { June 30- } \end{aligned}$ | Pelts |  | Percentage of Value Sold from Fur Farms ${ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Value |  |  | Number | Value |  |
|  |  | \$ |  |  |  | \$ |  |
| 1943 | 7,418, 971 | 28,505, 033 | 24 | 1953. | 7,568,865 | 23,349,680 | 43 |
| 1944. | 6,324,240 | 33,147, 392 | 28 | 1954. | 6,274,727 | 19,287,522 | 49 |
| 1945. | 6,994,686 | 31,001,456 | 31 | 1955. | 9,670,796 | 30,509,515 | 43 |
| 1946. | 7,593,416 | 43, 870,541 | 30 | 1956. | 7,727,264 | 28,051,746 | 56 |
| 1947. | 7,486,914 | 26,349,997 | 37 | 1957. | 6,919,724 | 25,592,130 | 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 | 1960. | 5,999,414 | 31,186,078 | 60 |
|  | 7,479,272 | 31,134,400 | 36 |  | 6,237, 360 | 28,737,087 | 59 |
| 19522.. | 7,931,742 | 24, 215,061 | 42 | 1962 | 5,759,819 | 28,938, 360 | 64 |

${ }^{1}$ Approximate. $\quad 2$ Wildlife pelts for Newfoundland included from 1952.
Ontario continued to lead the provinces in value of fur production, accounting for 28 p.c. of the total in the 1961-62 seasou. British Columbia followed with 17 p.c., Manitoba with 15 p.c., Alberta 14 p.c., Quebec 9 p.c., Saskatchewan 8 p.c., the Atlantic Provinces 6 p.c., and the Yukon and Northwest Territories combined 3 p.c.
2.-Pelts of Fur Bearing Animals Produced, by Province, Years Ended June 30, 1961 and 1962

| Province or Territory | 1961 |  |  | 1962 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Pelts | Value | Percentage of Total Value | Pelts | Value | Percentage of Total Value |
|  | No. | \$ |  | No. | \$ |  |
| Newfoundland. | 52,870 | 472,510 | 1.6 | 50,178 | 531,671 | 1.8 |
| Prince Edward Island. . | 4,561 | 62,807 | 0.2 | 4,299 | 66,966 | 0.2 |
| Nova Scotia..... | 86,154 | 706,820 | 2.5 | 83,832 | 882,243 | 3.0 |
| Quebec......... | 40,688 443,482 | 213,343 $2,791,889$ | 0.7 | 57,150 | 228,853 | 0.8 |
| Ontario. | 1,033,932 | 2,791,889 | 26.1 | 1,021,220 | 2,599,850 | 9.0 28.3 |
| Manitoba..... | 1,843,381 | 4,679,199 | 16.3 | -662,112 | 4,243,578 | 14.7 |
| Saskatchewan | 1,104,602 | 2,674,861 | 9.3 | 842,367 | 2,444,653 | 8.4 |
| Alberta.......... | 1,471, 811 | 3,781,761 | 13.2 | 1,679, 403 | 3,957,050 | 13.7 |
| British Columbia | 722,648 | 4,419, 893 | 15.4 | -566,115 | 4,773,727 | 16.6 |
| Yukon Territory....... | 116,787 | 105,031 | 0.4 | 98,902 | 125,348 | 0.4 |
| Northwest Territories. | 316,340 | 1,319,748 | 4.6 | 337,145 | 888,964 | 3.1 |
| Canada ${ }^{1}$. | 6,237,360 | 28,737,087 | ... | 5,759,819 | 28,938,360 | ... |

[^180]The ten principal kinds of pelts taken according to their total value in 1961-62 were: ranch mink, $1,269,050$ pelts valued at $\$ 18,405,102$; beaver, 386,823 pelts at $\$ 4,249,632$; wild mink, 147,011 pelts at $\$ 1,992,629$; muskrat, $1,524,363$ pelts at $\$ 1,334,229$; squirrel, $1,869,940$ pelts at $\$ 681,969$ (excluding Ontario); white fox, 45,358 pelts at $\$ 534,907$; lynx, 47,625 pelts at $\$ 448,052$; otter, 17,202 pelts at $\$ 387,371$; marten, 36,102 pelts at $\$ 201,809$; and ermine, 148,714 pelts at $\$ 135,288$. These accounted for 98.1 p.c. of the total value of pelts produced.
3.-Pelts of Fur Bearing Animals Taken, by Kind, Years Ended June 30, 1961 and 1962

| Kind | 1961 |  |  | 1962 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Pelts | Total Value | Average Value | Pelts | Total Value | Average Value |
|  | No. | \$ | \$ | No. | \$ | \$ |
| Badger. | 827 | 2,709 | 3.28 | 658 | 1,909 | 2.90 |
| Bear, white | 575 | 34,500 | 60.00 | ${ }^{497}$ | 27,102 | 54.53 |
| Bear, other. | 404 | 3,297 | 8.16 | 2,256 | 23,499 | 10.42 |
| Beaver. | 399,459 | 4,725,877 | 11.83 | 386,823 | 4,249, 632 | 10.99 |
| Coyote or prairie wolf | 6,156 | 25,487 | 4.14 | 6,789 | 29,726 | 4.38 |
| Ermine (weasel). | 197,948 | 176,285 | 0.89 | 148,714 | 135, 288 | 0.91 |
| Fisher | 6,206 | 68,586 | 11.05 | 5,863 | 72,670 | 12.39 |
| Fox, blue. | 370 | 2,813 | 7.60 | ${ }^{411}$ | 3,044 | 7.41 |
| Fox, cross and red | 17,885 | 50,953 | 2.85 | 15,300 | 51,483 | 3.36 |
| Fox, silver.. | +349 | - $\begin{array}{r}1,756 \\ \hline\end{array}$ | 5.03 19.49 | r, 351 45,358 | 1,774 534,907 | 5.05 11.79 |
| Fox, white..... | $\begin{array}{r}51,995 \\ \hline 18\end{array}$ | 1,013, 413 | 19.49 2.94 | 45,358 13 | 534,907 38 | 11.79 2.92 |
| Lynx. . ${ }^{\text {Lex, }}$. | 42,016 | 449,900 | 10.71 | 47,625 | 448, 052 | 9.41 |
| Marten. | 39,009 | 205,607 | 5.27 | 36,102 | 201,809 | 5.59 |
| Mink, wild. | 178,784 | 2,331,241 | 13.04 | 147,011 | 1,992,629 | 13.55 |
| Mink, ranch | 1,203,853 | 16,888,286 | 14.03 | 1,269,050 | 18,405,102 | 14.50 |
| Muskrat. | 1,745,576 | 1,179,642 | 0.68 | 1,524,363 | 1,334, 229 | 0.88 |
| Otter. | 17,408 | 410,799 | 23.60 | 17,202 | 387, 371 | 22.52 |
| Rabbit. | 186,318 | 122,381 | 0.66 | 192,991 | 121,459 | 0.63 |
| Raccoon | 25,266 | 44,685 | 1.77 | 23,534 | 47,363 | 2.01 |
| Skunk. | 1,111 | 736 | 0.66 | 954 | 560 | 0.59 |
| Squirrel. | 2,099,046 | 834,126 | 0.40 | 1,869,940 | 681, 969 | 0.36 |
| Wildcat. | 1,326 | 2,143 |  | 855 | 1,728 |  |
| Wolf.. | 773 | 10,254 | 13.27 15.07 |  | 4,110 5,990 | 9.88 15.48 |
| Wolverine | 435 14,247 | 6,554 145,004 | 15.07 | 3 16,357 | 5,990 174,917 | 15.48 |
| Totals. | 6,237,360 | 28,737,087 | ... | 5,759,819 | 28,938,360 | ... |

Fur Farm Production.-Fur bearing animals were first raised in Canada on farms in Prince Edward Island about 1887 and in Quebec in 1898; today fur farming is carried on in all the provinces. There was a slow but steady increase in the number of farms until 1920 when 587 were reported, followed by a period of more rapid growth to 1938 when the number reached 10,454 with a production value of $\$ 6,500,000$. During the war years many fur farms went out of business and although prices rose considerably after the War, operating costs increased and the number of fur farms, particularly those conducted in conjunction with other farming operations, continued to decrease. By 1961 only 2,173 farms reported but the value of their production continued to increase, reaching $\$ 18,580,000$. Although there were 158 fewer farms in 1961 than in 1960, the number of animals on such farms at Dec. 31 was nearly 12,000 higher than at the same date of the previous year and the number of fur farm pelts taken during the year íncreased from $1,218,100$ to $1,285,406$. Mink accounted for 99.1 p.c. of the value of fur farm production and fur farm production accounted for 64.2 p.c. of total production.
4.-Fur Farms and Value of Pelts Produced Thereon, by Province, 1960 and 1961

| Province | Fur Farms at Year End |  | Value of Pelts Produced on Fur Farms |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 1960 | 1961 | 1960 r | 1961 |
|  | No. | No. | \$ | \$ |
| Newfoundland. | 35 | 40 | 426,489 | 461,473 |
| Prince Edward Island. | 20 | 15 | 62,010 | 66,075 |
| Nova Scotia......... | 108 | 115 | 528,037 | 764,777 |
| New Brunswick. | 39 | 36 | 71,076 | 61,795 |
| Quebec. | 313 | 232 | 903,745 | 1,003,870 |
| Ontario.. | ${ }^{667}$ | 652 | 5,038,913 | 5,743,001 |
| Manitoba..... | 249 | 211 | 3,078,534 | 2,798,826 |
| Saskatchewan. | 162 | 146 | 1,084, 298 | 1,128, 857 |
| Alberta. | 294 | 308 | 2,066, 397 | 2,405,796 |
| British Columbia. | 444 | 418 | 3,773,355 | 4,144,169 |
| Totals. | 2,331 | 2,173 | 17,033,2901 | 18,580,019 ${ }^{1}$ |

${ }^{1}$ Includes some pelts not valued by province.
5.-Number of Farms Reporting Fur Bearing Animals, by Kind, as at Dec. 31, 1960 and 1961

| Kind | 1960 |  | 1961 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Farms | Animals | Farms | Animals |
|  | No. | No. | No. | No. |
| Fox. | 76 | 1,576 | 61 1.578 | 1,274 |
| Chinchilla. | , 531 | -33,514 | , 440 | 33,312 |
| Nutria..... | 158 | 7,060 | 119 | 5,529 |

6.-Number and Value of Pelts Produced on Fur Farms, by Kind, 1960 and 1961

| Kind | 1960 ${ }^{\text {r }}$ |  | 1961 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Pelts | Value | Pelts | Value |
|  | No. | \$ | No. | \$ |
| For | 2,034 | 20,340 ${ }^{1}$ | 1,815 | 18,150 ${ }^{1}$ |
| Blue..... | 122 | 1,2201 | 99 | 9901 |
| Platinum | 529 | 5,2901 | 564 | 5,640 ${ }^{1}$ |
| Silver...... | 1,369 | 13,690 ${ }^{1}$ | 1,074 | 10,7401 |
| Unspecified. | 14 | $140{ }^{1}$ | 78 | $780{ }^{1}$ |
| Mink. | 1,203,853 | 16,888,286 | 1,269,050 | 18,405,102 |
| Standard | 239,108 | 2,936,474 | 228,193 | 3,428,778 |
| Grey .i... | 45,447 | 619,695 | 43,725 | 581,615 |
| Dark blue | 69,908 | 1,125,705 | 78,308 | 1,228,107 |
| Brown.... | 195,326 | 3,156,790 | 210, 258 | 3, 383,550 |
| Beige. | 47, 7468 | $1,481,818$ | 127,749 | 2, 2 285,666 |
| White. | 102,758 | 1,281,599 | 84,229 | 1,048, 974 |
| Chinchilla ${ }^{2}$. . | 9,067 | 118,416 | 10,559 | 148,617 |
| Nutria. | 3,124 | 6,248 ${ }^{3}$ | 3,896 | 7,792 ${ }^{3}$ |
| Tota | 1,218,100 ${ }^{4}$ | 17,033,290 | 1,285,320 | 18,579,661 |
| ${ }^{1}$ Estimated at $\$ 10$ per pelt | - | timated at | r pelt. | ${ }^{4}$ Includes a |

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, fox, squirrel and muskrat. Furs such as Persian lamb, mink, muskrat, fox, raccoon, Kolinsky, and sheep and lamb make up the major portion of the imports. Exports and imports of furs, undressed, dressed and manufactured, from and to the United States, Britain and all countries, are given for the years 1961 and 1962 in Table 7.
\%.-Exports and Imports of Furs, by Kind, 1961 and 1962

| Kind of Fur | 1961 |  |  | 1962 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Britain | United States | $\stackrel{\text { All }}{\text { Countries }}^{\text {and }}$ | Britain | United States | All Countries |
|  | Exports |  |  |  |  |  |
| Undressed- |  |  |  |  |  |  |
| Beaver.. | 1,034,179 | 2,365,912 | 4,074,681 | 613,117 | 2,701,432 | 3,916,597 |
| Ermine or weasel. | 161,318 | 29,764 | 191,213 | 121,266 | 22,596 | 145,818 |
| Fisher. | 32,431 | 27,749 | 73,280 | 8,943 | 72,691 | 90,311 |
| Fox, all types. | 50,456 | 888,147 | 943,975 | 20,636 | 1,043, 354 | 1,072,500 |
| Lynx... | 177, 257 | 192,797 | 429,288 | 57,403 | 527,623 | 590,188 |
| Marten. | 111,116 | 153,501 | 265,925 | 46,052 | 198,028 | 249,023 |
| Mink. | 1,656,172 | 13,178,153 | 15,575, 451 | 2,018,413 | 12,927,634 | 16,825, 397 |
| Muskrat | 900,320 | 29,611 | 1,020,614 | 775,085 | 51,906 | 919,303 |
| Otter | 6,727 | 23,278 | 45,633 | 6,585 | 33,915 | 63,009 |
| Rabbit. |  | 131,801 | 144,536 | - | 132,577 | 134,518 |
| Raccoon. | 17,997 | 19,216 | 40,527 | - | 66,725 | 69,440 |
| Squirrel | 785,459 | 748 | 786,597 | 644,917 | 17,262 | 662,839 |
| Other.. | 79,437 | 273,991 | 356,914 | 383,966 | 375,768 | 806,967 |
| Dressed- |  |  |  |  |  |  |
| Mink. | 30,697 | 71,480 | 398,004 | 52,046 | 34,832 | 380,020 |
| Other. | 92,326 | 776,217 | 1,541,276 | 41,925 | 1,151,449 | 1,923,315 |
| Manufactured. | 41,850 | 271,005 | 391,235 | 176,586 | 353,785 | 961,347 |
| Totals | 5,17\%,742 | 18,433,370 | 26,279,149 | 4,966,940 | 19,711,577 | 28,810,592 |
|  | Imports |  |  |  |  |  |
| Undressed- |  |  |  |  |  |  |
| China and Jap mink. | 112,033 | 6,969 | 476,952 | 88,271 | 301 | 663,851 |
| Fox........... | 284,186 | 118,959 | 861,866 | 560,900 | 224,449 | 1,061,986 |
| Kolinsky | 160,258 | 23,109 | 483,215 | 96,337 | 5,628 | 386, 111 |
| Mink..... | 404, 294 | 4,382, 555 | 5,362,532 | 1,148,576 | $3,207,800$ | 6,649,542 |
| Muskrat. |  | 1,249,792 | 1,249,792 |  | 1,417,581 | 1,417,581 |
| Persian lamb | 2,841, 203 | $2,988,651$ 28,271 | $7,501,525$ 76,073 | 2,060,303 | $\begin{array}{r}2,377,531 \\ 53,096 \\ \hline\end{array}$ | 5,797,940 |
| Raccoon | 1,578 | 542,978 | 544, 556 | 21,735 | 577,279 | 599,014 |
| Squirrel. | 124,082 | 11,343 | 145,822 | 14,898 | 2,038 | 19,551 |
| Other. | 100,395 | 992,807 | 1,250,468 | 97,768 | 686,572 | 1,057,712 |
|  |  |  |  |  |  |  |
| Rabbit., |  |  | 70,083 |  |  |  |
| Hatters' furs | 71,677 | - 351, 804 | 846,196 | 72,849 397 | 225,786 $2,505,184$ | 792,652 $3,192,753$ |
| Other. | 455,900 | 2,526,810 | 3,254,547 | 397,690 | 2,505,184 | 3,192,753 |
| Manufactured. | 29,126 | 591,479 | 742,939 | 11,468 | 668,489 | 861,053 |
| To | 4,584,892 | 13,847,186 | 22,866,566 | 4,572,254 | 11,988,930 | 22,670,268 |

## 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 1961 the number of skins treated was $6,740,325$, of which muskrat comprised 39 p.c., mink 19 p.c., Persian and other types of lamb 16 p.c., squirrel 5 p.c. and raccoon 5 p.c.
8.-Principal Statistics of the Fur Dressing Industry, 195\%-61


The implementation of the new "establishment" concept for the 1961 survey brought about marked changes in the statistics of the fur goods industry. The figures for 1957-60, given in Table 9, have been revised on the new basis. Shipments of ladies' fur coats, including boleros and jackets, by all industries in 1961 numbered 168,214 and were valued at $\$ 41,129,186$.

* Prepared in the Industry Division, Dominion Bureau of Statistics.
9.-Principal Statistics of the Fur Goods Industry, 1957-61

Nore.-Figures for 1957-60 have been revised on the basis of the revised Standard Industrial Classification.

| Item |  |
| :--- | :--- | ---: | ---: | ---: | ---: | ---: |

## GHAPTER XIV.-MANUFACTURES



The interpretation of the symbols used in the tables throughout the Year Book will be found facing $p .1$ of this volume.

This Chapter deals with manufacturing in Canada in four Parts. Part I contains a specially prepared treatment of secondary manufacturing in Canada, followed by an outline of the manufacturing situation in 1961. Part II provides general statistical analyses including manufacturing statistics from 1917; detailed treatment of production under various groupings and individual industries; and principal factors in manufacturing production such as capital expenditures and size of establishment. Part III deals with the provincial and local distribution of manufacturing production and Part IV with the functions of the new Department of Industry.

Figures for 1961 were available at the time of going to press for most of the tables of Part II, although certain analyses, such as principal commodities produced and manufactures classified by origin and type of ownership, were not yet complete and 1960 is given as the latest year. Similarly, 1960 is the latest year for certain of the provincial and municipal analyses contained in Part III.

## PART I.-REVIEW OF MANUFACTURING

In each edition of the Year Book, this Part contains a general review of the current manufacturing situation, supplemented by additional information, sometimes historical in nature and sometimes dealing in detail with the development of an individual industry. The 1962 edition included, at pp. 600-608, a review of manufacturing production during the period 1945-59 and also, at pp. 609-615, a treatise on the petrochemical industry of Canada. The special articles appearing in previous editions are listed in Chapter XXVI, Part II, Special Articles Published in Former Editions of the Year Book, under the heading of "Manufactures".

The following article deals with a subject of much current interest-the growth and importance of the secondary sector of the manufacturing industries of Canada.

## SECONDARY MANUFAGTURING IN CANADA*

The economic growth of any nation is characterized by profound changes in the distribution of available resources among the various sectors making up total economic activity. This has been true of the Canadian economy. In the early stages of development, manpower and capital in Canada were concentrated primarily in agriculture, fishing and forestry. With the growing world need for various metals and minerals found in Canada, an increasing proportion of the available manpower and capital resources was shifted to mining. Lacking a sufficient domestic market for the finished goods using these raw materials, manufacturing operations in Canada consisted mainly of primary processing operations producing for export markets. Gradually, however, a growing population with greater purchasing power, concentrated in urban areas, created conditions favourable to the development of secondary manufacturing in Canada.

## 1.-Summary Statistics of Secondary Manufacturing in Canada, 1925-60

| Year | Estab- lish- ments | Employees | Total Salaries and Wages | Cost of Fuel and Electricity Purchased | Cost at Plant of Materials Used | Value of Net Production | Value of Gross Production |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | \$'000 | \$'000 | \$000 | \$'000 | \$'000 |
| Av. 1925-29. | 8,935 | 383, 339 | 451,882 | 23,887 | 833,730 | 885, 236 | 1,741,554 |
| Av. 1935-38. | 10,368 | 404,102 | 428,004 | 36,096 | 739,269 | 778,366 | 1,553,730 |
| 1946. | 14,762 | 732,517 | 1,212,496 | 81,680 | 1,934,869 | 2,164,398 | 4,180,945 |
| 1947. | 15,579 | 780,728 | 1,446,590 | 99,436 | 2,513,895 | 2,651,378 | 5,264,709 |
| 1948. | 15,757 | 795,912 | 1,669,510 | 117,516 | 2,946, 257 | 3,082,621 | 6,146,393 |
| 1949. | 17,729 | 811,478 | 1,789,977 | 117,852 | 3,164,483 | 3,347,383 | 6,629,726 |
| 1950. | 17,848 | 819,328 | 1,930,529 | 132,440 | 3,558,260 | 3,697,804 | 7,388,500 |
| 1951. | 18,442 | 877,344 | 2,287,992 | 151,440 | 4,390,476 | 4,279,712 | 8,824,034 |
| 1952. | 19,077 | 902,212 | 2,562,633 | 153, 535 | 4,545,027 | 4,711,198 | 9, 409,762 |
| 1953. | 19,439 | 936,519 | 2,816,668 | 163, 309 | 4,750,271 | 5,116, 360 | 10,029,941 |
| 1954. | 19,818 | 876,653 | 2,706,403 | 162,040 | 4,504,230 | 4,763,011 | 9,426,415 |
| 1955. | 20,297 | 896,976 | 2,872,278 | 179,897 | 5,208,367 | 5,261,823 | 10,631,548 |
| 1956. | 20,376 | 942,275 | 3,200,031 | 205,573 | 6,089,972 | 5,886,553 | 12,003,584 |
| 1957. | 21,187 | 948, 153 | 3,374,864 | 215, 135 | 6,070,362 | 6,085,261 | 12,322,939 |
| 1958. | 20,407 | 890, 646 | 3,318,651 | 209,639 | 5,821,248 | 5,999,805 | 12,054, 806 |
| 1959. | 20,224 | 898,702 | 3,518,885 | 225,384 | 6,282,012 | 6,529,741 | 12,885,450 |
| 1960. | 20,816 | 961,030 | 3,608,955 | 243,999 | 6,301,128 | 6,668,880 | 13,183,904 |

Secondary manufacturing $\dagger$ consists mainly of those industrial activities which transform the products of the primary processing industries into intermediate and final consumer products. Secondary manufacturing in Canada, so defined, has expanded rapidly since the mid-1920's. Comparing averages for the periods 1925-29 and 1956-60, the value of goods produced increased more than seven times, employment more than two and a half times, wages and salaries eight times, imports and exports each about six times, and the domestic market about seven times. In addition, the industrial composition of secondary manufacturing has changed significantly. Industries producing consumer semidurable goods, such as rubber and leather products, have generally become less important in secondary manufacturing. On the other hand, industries producing capital goods, construction goods and supporting intermediate goods have become substantially more

[^181]important. Associated with this structural change is the greater sophistication of Canadian secondary manufacturing, turning out many highly complex and advanced products such as electronic computers, thermal turbines and generators, diesel engines and reaperthresher combines. The structural changes in secondary manufacturing reflect the changing pattern of demand in the Canadian economy. A larger proportion of consumer expenditures is directed toward durable goods such as automobiles and appliances and a lesser proportion toward semi-durables, while capital expenditures for buildings and equipment have accounted for an increasing percentage of national income. Moreover, the remarkable technological developments in such areas as electronics and organic chemistry have also substantially influenced the growth of Canadian secondary manufacturing.

In relation to total Canadian economic activity, secondary manufacturing in Canada has grown in importance. From 1956 to 1960 this sector employed an average of 16 p.c. of the employed civilian labour force and produced almost 19 p.c. of the value of gross national production, compared with 10 p.c. and 15 p.c., respectively, for the period 1925-29. In terms of production and employment, secondary manufacturing in Canada has grown even more rapidly than that in the United States. However, despite its less rapid rate of growth, secondary manufacturing in the United States continues to be more significant to the national economy than its Canadian counterpart, accounting in 1960 for 21 p.c. of the labour force and 26 p.c. of gross national production. This difference signifies not so much that secondary manufacturing in Canada is less mature, as the presence of a number of adverse factors inherent to the Canadian economy. Perhaps the most outstanding of these is the relatively small size of the domestic market. This has limited the extent to which Canadian manufacturers could reduce costs by employing mass production techniques. In a small market, too, the production of a wide range of items is not warranted and, as a result, a substantial share of the domestic market accrues to foreign producers. In addition, production costs in Canadian secondary manufacturing have, in many lines, tended to be higher than those of foreign competitors, so that exports account for only a small portion of its total output. Thus, secondary manufacturing in Canada is oriented mainly toward the domestic market. Despite these disadvantages, it is apparent from the development of Canadian secondary manufacturing during the past three or four decades that Canada's stature as an industrial nation has been considerably enhanced.

Production.-From 1925 to 1929 secondary manufacturing in Canada, comprising an average of 8,935 establishments and employing 383,000 people, produced goods valued at $\$ 1,490,000,000$. After a sharp decline in the early 1930 's, a strong upward trend developed with the industry averaging, over the $1956-60$ period, 20,602 establishments and 928,000 employees, and turning out goods valued at $\$ 13,200,000,000$. The value of net production, i.e., the value of all goods produced minus the cost of raw materials and fuel and electricity, averaged $\$ 885,000,000$ over the years $1925-29$ and increased to $\$ 6,230,000,000$ in 1956-60. This was a more rapid rate of growth than that shown for the economy as a whole as measured by gross national production. In relation to the gross national product, secondary manufacturing increased its relative position, although there has been a decline since 1950. The value of net production of secondary manufacturing accounted for an average of 18.9 p.c. of the gross national product during 1956-60 compared with 15.5 p.c. for $1925-$ 29; the proportion in 1950 was 20.5 p.c. The relative decline since 1950 is not surprising because, as a nation develops economically, a stage is reached where a growing proportion of national expenditures is allocated to services rather than to goods. It would seem that the Canadian economy attained that particular phase of economic development during the early 1950 's.

The growth of secondary manufacturing has been marked by significant changes in the importance of individual industries. The impact of the growth of the Canadian market, technological advancement, shifts in the allocation of consumer expenditures, the rapid expansion of capital expenditures and import competition has affected some industries more than others. The value of gross production of the textile, the knitting and hosiery and the clothing industries, as a proportion of total secondary manufacturing, dropped from
an average of 22.3 p.c. during the years $1925-29$ to 13.6 p.c. in 1959 . The percentage accounted for by the leather products and the rubber products industries declined from 8.9 p.c. to 4.3 p.c. over the same period. On the other hand, the greatest relative growth was realized by the chemical, the electrical apparatus and the transportation equipment industries, whose combined share rose from a little more than 25 p.c. during the 1925-29 period to about 33 p.c. in 1959. The share represented by the non-ferrous metal products industry and the non-metallic mineral products industry rose from 5.5 p.c. to 7.7 p.c., and that by the iron and steel industry from 19.2 p.c. to 23.9 p.c. The secondary manufacturing activities related to wood and paper, including printing and publishing, retained their relative position, accounting for one seventh or about 14 p.c. of total secondary manufacturing in both 1925-29 and 1959. In general, the industries producing consumer semi-durables have declined in relative terms while those turning out consumer durables, capital equipment and construction goods have increased their contribution to over-all output.

Foreign Trade. -Imports and exports of commodities produced by secondary manufacturing have risen more than sevenfold during the past thirty-five years, the former from $\$ 632,000,000$ to $\$ 4,690,000,000$ and the latter from $\$ 154,000,000$ to $\$ 1,100,000,000$. Imports of secondary manufactures have consistently exceeded exports, so that Canada's foreign trade in these commodities has resulted in a deficit. This imbalance has increased from an average of $\$ 478,000,000$ during the $1926-29$ period to $\$ 3,560,000,000$ in 1962 .
2.-Foreign Trade in Goods Produced by Secondary Manufacturing, 1926-62


Imports of secondary manufactured goods have accounted for a growing proportion of total Canadian imports. Over the $1926-29$ period this proportion averaged 54.8 p.c., but dropped to an average of 51.7 p.c. during $1935-38$ as a result of the additional protection granted domestic secondary manufacturing during the depression years. However, it rose thereafter, reaching 61.7 p.c. in 1946 and 74.9 p.c. in 1962. Thus imports of goods produced by secondary manufacturing currently represent three quarters of all of Canada's imports.

In value terms, iron and steel products are the largest group of secondary manufactured imports, comprising 32.8 p.c. of the 1962 total. Imports of transportation equipment accounted for 17.3 p.c., rubber, leather and miscellaneous products for 16.7 p.c., textiles and clothing for 8.2 p.c., electrical apparatus 7.9 p.c., non-ferrous metal and non-metallic mineral products 5.6 p.c., and wood and paper products 4.3 p.c. Import groups that
have increased in relative as well as absolute terms since 1926 include transportation equipment, which rose from an average of 12.6 p.c. for $1926-29$ to 17.3 p.c. in 1962, electrical apparatus from 4.2 p.c. to 7.9 p.c. and rubber, leather and other miscellaneous commodities from 11.3 p.c. to 16.5 p.c. Imports of textiles and clothing have shown the greatest stability of any group over the 1926-62 period, and have become much less significant in relative terms, their proportion of the total declining from an average of 22.9 p.c. in the 1926-29 period to only 8.2 p.c. in 1962.

Exports of commodities produced by secondary manufacturing have become more important than in 1926 , rising from an average of $\$ 154,000,000$ or 12.5 p.c. of all exports in $1926-29$ to $\$ 1,120,000,000$ or 18.2 p.c. of the total in 1962 . This growth has been accompanied by substantial changes in composition. In 1926-29, exports of transportation equipment accounted for 25.2 p.c. of the total compared with 9.8 p.c. in 1960 , while the share of rubber, leather and miscellaneous commodities has fallen from 30.3 p.c. to 7.3 p.c. Groups gaining in relative importance over the period include iron and steel products which rose from 22.6 p.c. of the $1926-29$ total to 43.3 p.c. of the 1962 total, chemicals and allied products from 8.4 p.c. to 20.9 p.c., electrical apparatus from 2.4 p.c. to 5.6 p.c., and non-ferrous metal and non-metallic mineral products from 4.1 p.c. to 6.4 p.c.

Despite the rapid growth and development of domestic secondary manufacturing, Canadian imports have continued to be mainly products of secondary manufacturers and exports mainly raw materials and commodities produced by primary processing industries. Nevertheless, it is significant that since 1926, and especially during the past three years, secondary manufacturing in Canada has contributed an increasing proportion to Canadian exports.

The Domestic Market.-The domestic market for goods produced by secondary manufacturing has expanded rapidly and Canadian secondary manufacturing has become more dependent for its growth on this market. The growth of the domestic market has been the result of an expanding population with larger incomes and a propensity for spending an increasing proportion of its income on durables. In addition, the growth in the proportion of the national income expended on capital investment has meant increased demands for construction goods and capital equipment. Consequently, the domestic market for consumer durables, construction goods, and capital equipment has risen more rapidly than has the demand for consumer semi-durables.

The domestic market for secondary manufactures increased from an average of $\$ 2,300,000,000$ in the $1925-29$ period to $\$ 16,000,000,000$ in 1960 . Of this growing market, Canadian secondary manufacturing held a larger share in the postwar years than in 192629, despite the great expansion in imports. On the other hand, while exports of secondary manufactures have become a more significant part of total Canadian exports, their share of total output has actually declined. Over the years 1926-29, an average of 27.7 p.c. of the domestic market for secondary manufactures was supplied by foreign producers. This proportion dropped to an average of 19.0 p.c. during the period $1935-38$, because of the low level of investment and the higher level of tariff protection that resulted from the Imperial Economic Conference of 1932. By 1947 the proportion of the Canadian market accruing to foreign producers had again risen to 25.1 p.c., and this level was generally maintained during the postwar period, with the exception of 1948 and 1949 when foreign exchange controls restrained imports. The domestic market took 93.9 p.c. of the output of Canadian secondary manufacturing in 1960 compared with an average of 91.5 p.c. in the 1926-29 period. Exports by secondary manufacturing declined over this period from an average of 8.5 p.c. of total output to 6.1 p.c. In summary, secondary manufacturing has become more and more oriented toward the domestic market.

The share of the domestic market for secondary manufactures obtained by foreign producers rose most significantly for rubber and leather products and for clothing and textiles. On the other hand, the wood products industry, the paper products industry
and the non-metallic mineral products industry-resource-based secondary industrieswere successful in reducing import competition. In respect to foreign markets, each secondary manufacturing industry, except the chemicals and allied products industry and the iron and steel products industry, has exported a declining proportion of its total output and has consequently become more dependent on domestic sales. This trend was most marked for the transportation industry, which exported an average of 13.6 p.c. of its value of production in the $1926-29$ period and only 3.7 p.c. of its 1959 output, the knitting industry where exports fell from 5.6 p.c. to 0.1 p.c., and the rubber products industry which exported 31.4 p.c. in 1926-29 and 3.3 p.c. in 1959.

In the more recent years the incidence of imports on the domestic market has been greatest for iron and steel products, with Canadian manufacturers supplying 60 p.c. to 65 p.c. and foreign producers the remainder. For chemicals and allied products, transportation equipment, electrical apparatus and supplies, non-metallic mineral products, textiles and non-ferrous metal products, Canadian manufacturers have been supplying about 75 p.c. to 80 p.c. of the domestic market, and for the remaining secondary manufactured commodities 90 p.c. or more. With regard to producing for export markets, the chemicals and allied products industry ranks first among the other secondary industries, shipping 13 p.c. of its output abroad; the iron and steel products industry ranks second with 10 p.c. of output going to export markets. The other secondary manufacturing industries produce almost their entire output for the domestic market. Thus, neither the net replacement of imports, encouraging though this has been, nor production for foreign markets has contributed significantly to the development and growth of secondary manufacturing in Canada which, since 1925, has been attributable almost entirely to the expansion of the domestic market.

Employment and Earnings.-Employment in secondary manufacturing has expanded more than two and a half times from an annual average of 383,000,000 for 1925-29 to $928,000,000$ in 1956-60. Such manufacturing has comprised a growing segment of the Canadian labour market, and today accounts for about one sixth of the total employed civilian labour force, compared with one tenth in 1925-29. During the early 1950's, employment in secondary manufacturing reached a peak of 18 p.c. of total employment, and has since declined somewhat in relative terms. As stated previously, the rise and fall in the relative importance of secondary manufacturing in the Canadian economy are phenomena associated with the process of economic growth and in part indicate that Canadian economic development has reached the stage where an increasing proportion of available resources is directed to the service-producing sector rather than to the goodsproducing sector.

In terms of employment, the significance of the individual secondary industries has changed substantially. The durable goods producing industries, particularly the electrical apparatus and supplies, the iron and steel products, and the non-metallic mineral products industries, have become much more important as sources of employment, while the industries manufacturing semi-durables, notably the rubber, leather and textile products industries, have receded in importance. At present, the iron and steel products industry is the largest employer in secondary manufacturing, accounting for more than 20 p.c. of the total for this sector, and is followed by the transportation equipment industry which provides around 14 p.c. of the job total. Industries with 10 p.c. to 15 p.c. of total employment in secondary manufacturing are, in order of relative importance, the clothing industry, the electrical apparatus and supplies industry, the publishing and printing industry, the textiles industry and the chemical and allied products industry. Employment in each of the remaining industries ranges from 2 p.c. to 5 p.c. of the total.

Wages and salaries paid out by secondary manufacturing have increased about eightfold during the past thirty-five years, from an average of $\$ 452,000,000$ during 1925-29 to $\$ 3,600,000,000$ in 1960 . Average annual earnings per employee more than tripled during that period, rising from $\$ 1,179$ to $\$ 3,916$, and have been consistently greater than average
earnings in all manufacturing, although the difference has been small. At present, average earnings range from about $\$ 2,500$ in the knitting and hosiery industry to $\$ 4,700$ in the transportation equipment industry, which is a wider range than in 1925. Throughout the period under study, the growth industries have had average earnings exceeding those for secondary manufacturing as a whole, while those in the declining industries have tended to be below the industry average.

The salaries and wages paid out by secondary manufacturing amounted to an average 51 p.c. of the value of net production from 1925 to 1929 but by 1946, with most of the increase having occurred during the prewar years, the proportion had risen to 56 p.c. During the postwar years it dropped initially to 52.2 p.c. in 1950 and has subsequently fluctuated between 54 p.c. and 55 p.c. By comparison, United States salaries and wages in secondary manufacturing increased from 51.7 p.c. of net production in 1925 to 58.2 p.c. in 1960. The secondary industries in Canada with the highest relative labour cost in 1960 were the leather products industry, 64.0 p.c., the wood products industry, 62.8 p.c., and the clothing industry, 62.0 p.c. The Canadian industries in secondary manufacturing with the lowest labour costs in relation to the net value of production were the chemicals and allied products industry, 35.5 p.c., and the rubber products industry, 46.2 p.c. The most rapid advances in wages and salaries relative to net production have occurred in the rubber products industry, from an average of 37.4 p.c. in 1925-29 to 46.2 p.c. in 1959, and in the electrical apparatus industry, from 44.5 p.c. to 56.0 p.c. Only the transportation equipment industry has shown a reduction in its labour cost relative to net production, from 65.4 p.c. to 58.2 p.c., although a substantial increase has occurred since 1950 at which time the percentage was 52.4 . Thus, over the past thirty-five years or so, labour's share of net production in secondary manufacturing has grown both in the sector as a whole and in most individual industries.

The volume of net production per man-year in Canadian secondary manufacturing was almost 50 p.c. higher in the period 1956-59 than in 1925-38. Technological progress, requiring more complex machinery and equipment and people with greater technical skills, was the most influential factor contributing to the greater annual real output per employee. Production per man-hour in volume terms, making allowance for an approximate $15-$ p.c. reduction in annual man-hours, was almost 63 p.c. greater in 1956-59 than in 1935-38. Performances by individual secondary industries in this regard varied widely. The paper products, the non-metallic mineral products and the chemical industries showed the greatest gains in net production per man-year, with increases of 99.4 p.c., 99.2 p.c. and 96.5 p.c., respectively. The smallest gains were 9.7 p.c. for the clothing industry and 11.2 p.c. for the wood products industry. Between these two extremes were the rubber products industry with an increase of 52.1 p.c. in the volume of net production per man-year, the leather products industry 28.5 p.c., the textiles industry 56.7 p.c., the knitting and hosiery industry 86.7 p.c., the printing and publishing industry 28.0 p.c., the iron and steel products industry 41.2 p.c., the transportation equipment industry 32.5 p.c., the nonferrous metal products industry 47.0 p.c., and the electrical apparatus industry 61.6 p.c.

In summary, Canadian secondary manufacturing has provided employment for an increasing number of people, and these workers have produced more and have earned more than ever before in history. Thus, secondary manufacturing has been able to make a greater contribution to Canada's economic growth and the rising living standards of its people.

Capital Expenditures.-The growth of secondary manufacturing in Canada could not have been realized without a simultaneous expansion of production capacity, by both the addition of new facilities and the modernizing of old ones. Over the 1948-62 period, capital expenditures in secondary manufacturing totalled $\$ 6,760,000,000$ and rose from an annual average of $\$ 318,000,000$ in 1948-52 to $\$ 534,000,000$ in 1958-62.
3.-Capital Expenditures in Secondary Manufacturing, 1948-62

| Year | Amount | Year | Amount |
| :---: | :---: | :---: | :---: |
|  | \$'000 |  | \$'000 |
| 1948. | 251,778 | 1956. | 585,042 |
| 1949. | 250,232 | 1957. | 657,488 |
| 1950. | 216,427 | 1958. | 471,518 |
| 1951. | 376,584 | 1959. | 540,307 |
| 1952. | 494,852 502,435 | 1960. | 574,020 |
| 1954. | 370,639 | 1961. | 518,394 |
| 1955. | 381,217 | 1962. | 567,140 |

The importance of the individual secondary industries as areas for investment has changed substantially during this fifteen-year period. Investment in the iron and steel products industry rose from an average of $\$ 77,000,000$, or 24.3 p.c. of the $1948-52$ total, to $\$ 159,000,000$, or 29.7 p.c. of the $1958-62$ aggregate. The chemicals and allied products industry, which accounted for an average of 17.3 p.c. in 1958-62, also attracted a growing proportion of the total investment in secondary manufacturing. Capital expenditures in the textile and clothing industries declined absolutely as well as relatively from an average of $\$ 46,000,000$ or 14.4 p.c. in $1948-52$ to $\$ 39,000,000$ or 7.4 p.c. in $1958-62$. The electrical apparatus industry and the transportation equipment industry also declined as areas for investment over this period. Capital expenditures in the rubber and leather products industries, the wood and paper products industries, the non-ferrous metal products and the non-metallic mineral products industries remained unchanged in relation to total investment in secondary manufacturing. The available data also indicate that a declining proportion of total Canadian capital expenditures is being devoted to secondary manufacturing. This trend appears to have developed after 1952 , when 9.0 p.c. of that year's total investment was allocated to secondary manufacturing compared with 6.5 p.c. in 1962. This decline reflects the growing emphasis being placed on service facilities.

During the past thirty-five years the Canadian economy has become more industrialized. This is evident in the relative as well as the absolute growth of Canadian secondary manufacturing. The most important factor contributing to the development of Canadian secondary manufacturing since 1925 has been the rapidly expanding domestic market. Import replacement and production for export accounted for only a small portion of the progress achieved in this sector. For the future, Canadian secondary manufacturing can be expected to continue to expand at a rate at least in line with the growth of the domestic market. An even more rapid growth rate can be anticipated in the event of a substantial net replacement of imports and a higher level of production for export.

## The Manufacturing Situation in 1961

The recovery in manufacturing production that took place during 1959 and was maintained more or less in 1960 was followed by a year of increased activity. In 1961, the value of factory shipments amounted to $\$ 24,243,294,949$ and the value added by manufacture to $\$ 10,682,137,680$, both the highest on record. Salaries and wages paid, at $\$ 5,231,446,969$, were slighty higher than in 1960 and were also the highest on record. The index of the physical volume of production stood at 153.0, 2.5 p.c. higher than in 1960 and 2.1 p.c. above the previous high attained in 1959 . Despite the increase in volume of production, the number of employees, at $1,265,302$, was a little lower than in 1960, following the trend in recent years for the same volume of goods to be produced with fewer employees. In the 1949-61 period, the volume of manufactures produced increased by 53 p.c. and the number of persons employed by only 8 p.c. The higher salaries and wages paid in 1961 reflected the continuing advance in earnings, a trend common to all sectors of the economy.

It should be noted also that the addition of about 368,000 persons to the population in 1961 supplemented labour income and had a stimulating influence on the output of the consumer goods industries.

Of tremendous importance in sustaining the level of production in 1961 was the continued high spending on capital goods. Although the total investment in capital goods, amounting to $\$ 8,172,000,000$, was $\$ 90,000,000$ lower than the total for 1960 , the $\$ 5,518,000,000$ spent for construction was $\$ 65,000,000$ higher. Thus the decrease in the total was more than accounted for by the decrease in the portion spent for machinery and equipment which, at $\$ 2,654,000,000$, was down by $\$ 155,000,000$ compared with 1960 . The high level of construction activity and an increase in exports of timber and lumber was reflected in increases of 4.4 p.c. in the volume of output of the non-metallic mineral products group and of 2.6 p.c. in the volume of output of the wood industries group.

Export demand for Canadian manufactured products was also a strong factor in stimulating production in 1961. Exports of fabricated materials advanced from $\$ 2,874,300,000$ in 1960 to $\$ 2,916,400,000$, an increase of 1.5 p.c., and substantial improvements were shown in the amounts of timber and lumber, wood pulp, newsprint, whisky, nickel, fertilizers, aircraft, lead and lead products, non-farm machinery and synthetic plastics going abroad. At the same time declines occurred in such major export items as shingles, veneer and plywood, wheat flour, farm implements and machinery, aluminum and its products, copper and its products, zinc, automobiles and parts, artificial abrasives, synthetic rubber and plastics and uranium ores and concentrates.

As already mentioned, the index of the physical volume of production for manufacturing as a whole reached an all-time high of 153.0 in 1961. During 1960 and 1961 the volume of non-durable or consumer goods produced increased 3.4 p.c. and the volume of durable goods advanced 1.4 p.c. Since the end of World War II, production of the nondurable goods industries experienced an almost uninterrupted expansion but recorded an increase in volume of only 54 p.c. between 1946 and 1956, while durable goods increased 92 p.c. in the same period. The gap between the two sectors was narrowed in the years 1957-61, so that for the whole period 1946-61 durable goods expanded 86 p.e. and nondurable goods 75 p.c.

All industries producing non-durable goods, with the exception of the clothing and knitting mills group, reported increased volume in 1961. The miscellaneous industries group increased by 11.2 p.c., followed by leather products with an increase of 10.7 p.c., textiles 9.9 p.c., tobacco and tobacco products 6.4 p.c., paper products 3.4 p.c., products of petroleum and coal 3.3 p.c., foods 2.8 p.c., beverages 2.1 p.c., rubber and rubber products 1.7 p.c., printing, publishing and allied industries 1.1 p.c. and chemicals and allied products 1.1 p.c. Volume output of clothing factories and knitting mills declined 0.7 p.c. The significant feature was the upsurge in the output of leather products and textiles. These two groups, which had been operating for some years at comparatively low levels, materially bettered their positions during 1961. The clothing and knitting industries, however, still had the smallest increase in volume since 1949 in both the non-durable and durable goods sectors.

In the durable goods sector the trend in 1961 was mixed; four groups increased and two declined. The non-metallic mineral products group reported the highest increase of 4.4 p.c., followed by wood products with 2.6 p.c., iron and steel products 1.5 p.c. and electrical apparatus and supplies 1.3 p.c. The output of non-ferrous metal products dropped 0.5 p.c. and transportation equipment 0.2 p.c.

The level of manufacturing activity in 1961, as measured by the number of persons employed, was lower in all provinces except Newfoundland and New Brunswick; these provinces recorded increases of 6.1 p.c. and 1.2 p.c., respectively. The greatest loss in employment was suffered by Nova Scotia with a drop of 4.8 p.c. This was followed by Saskatchewan with a decrease of 3.9 p.c., British Columbia 2.3 p.c., Alberta and Quebec 1.8 p.c., Manitoba 1.6 p.c., Ontario 1.2 p.c. and Prince Edward Island 0.3 p.c. Perhaps the most outstanding feature was the reversal in the trend of manufacturing employment in Saskatchewan which, after three successive years of increases, reported the second largest decline.

## PART II.-STATISTICS OF MANUFACTURING

## Section 1.-Growth of Manufacturing

It is impossible to give absolutely comparable statistics of manufacturing over a long period of years. From 1870 to 1915 statistics were collected only in connection with decennial or quinquennial censuses and there was inevitably some variation in the information collected. The annual Census of Manufactures was instituted in 1917 and, though numerous changes have since been made in the information collected and in the treatment of the data, an effort has been made to carry all major revisions back to 1917, so that the figures for the period since then are on a reasonably comparable basis.

The Bureau of Statistics in 1952 changed its policy with regard to the collection of statistics on the production of manufactured goods. Firms in several industries where year-end inventory changes were known to be insignificant were requested to report value of shipments f.o.b. plant instead of gross value of products. The changeover was made in order to ease the burden of reporting for the majority of manufacturing establishments. The value of shipments concept for small and medium sized establishments is more realistic and more readily obtainable from their accounting records. From 1957 on, the figures are based on the revised Standard Industrial Classification, as explained on p. 651 .

Because of a change in the definition of the reporting unit (establishment) in the 1961 Census of Manufactures, the statistics for 1961 are not directly comparable with those of previous years. On the revised basis, the total value of shipments in 1960 was $\$ 23,279,804,128$, lower by $\$ 467,652,955$ than the 1960 figure compiled on the old basis. Revisions back to 1957 will be published in the 1961 reports of the Industry Division of DBS and will appear in the next issue of the Year Book.

## 1.-Summary Statistics of Manufactures, 1917-61

Note.-Figures for alternate years from 1918 to 1940 are given in the 1962 Year Book, p. 616. Statistics of manufacturing from 1870 have been published but between that year and 1917 figures are not on a basis comparable to the series given below; statistics for significant years appear in the 1943-44 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 Plant of Materials Used | Value Added by Manufacture ${ }^{1}$ | Gross Value of Products ${ }^{2}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | \$ | \$ | \$ | \$ |
| 1917. | 21,845 | 606,523 | 497, 801, 844 | 1,539,678,811 | 1,281,131,980 | 2,820,810,791 |
| 1919. | 22,083 | 594,066 | 601,715, 668 | 1,779,056,765 | 1,442,400,638 | 3,221,457,403 |
| 1922. | 20,848 | 438,555 | 497, 399,761 | 1,365, 292, 885 | 1,123,694, 263 | 2,488,987,148 |
| 1923. | 21,080 | 506,203 | 549,529,631 | 1,456,595,367 | 1,206,332,107 | 2,662,927,474 |
| 19253 | 20,981 | 522,924 | 569,944, 442 | 1,571,788, 252 | 1,167,936,726 | 2,816,864,958 |
| $1927{ }^{3}$ | 21,501 | 595,052 | 662,705,332 | 1,741,128,711 | 1,427,649, 292 | 3,257,214,876 |
| 19292 | 22,216 | 666,531 | 777,291,217 | 2,029,670, 813 | 1,755,386,937 | 3,883, 446,116 |
| 1931. | 23,083 | 528,640 | 587, 566,990 | 1,221,911,982 | 1,252,017, 248 | 2,555, 126, 448 |
| 1933. | 23,780 | 468,658 | 436, 247, 824 | ,967,788, 928 | -919,671,181 | 1,954,075,785 |
| 1935 | 24,034 | 556,664 | 559,467,777 | 1,419,146,217 | 1,153,485, 104 | 2,653,911,209 |
| 1937. | 24,834 | 660,451 | 721,727,037 | 2,006,926,787 | 1,508,924, 867 | 3,625,459,500 |
| 1939. | 24,805 | 658,114 | 737, 811,153 | 1, $836,159,375$ | 1,531,051,901 | 3,474,783,528 |
| 1941. | 26,293 | 961,178 | 1,264, 862,643 | 3,296,547,019 | 2,605,119,788 | 6,076, 308,124 |
| 1942. | 27,862 | 1,152,091 | 1,682, 804,842 | 4,037, 102,725 | 3,309, 973,758 | 7,553,794,972 |
| 1943. | 27,652 | 1,241,068 | 1,987, 292,384 | 4,690, 493,083 | 3,816,413,541 | 8,732, 860,999 |
| 1944. | 28,483 | 1,222,882 | 2,029,621,370 | 4,832,333, 356 | 4,015,776,010 | 9,073,692,519 |
| 1945. | 29,050 | 1,119,372 | 1,845,773, 449 | 4,473,668,847 | 3, 564, 315, 899 | 8,250, 368 , 866 |
| 1946 | 31, 249 | 1,058,156 | 1,740,687,254 | 4,358, 234, 766 | 3,467,004,980 | 8,035, 692,471 |
| 19478 | 32,734 | 1,131,750 | 2,085,925,966 | 5, 534, 280,019 | 4,292,055,802 | 10,081, 026, 580 |
| 1948. | 33,420 | 1,155,721 | 2,409,368,190 | 6,632,881,628 | 4,938,786,981 | 11,875, 169,685 |

[^182]1.-Summary Statistics of Manufactures, 1917-61-concluded

| Year | Estab-lishments | Employees | Salaries and Wages | Cost at Plant of Materials Used | Value <br> Added by Manufacture ${ }^{1}$ | Gross Value of Products ${ }^{2}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | \$ | \$ | \$ | $\delta$ |
| 19494. | 35,792 | 1,171,207 | 2,591, 890,657 | 6,843,231,064 | 5,330, 566, 434 | 12,479,593,300 |
| 19504. | 35, 942 | 1,183,297 | 2,771, 267,435 | 7,538,534,532 | 5,942,058,229 | 13,817,526,381 |
| 1951. | 37,021 | 1,258,375 | 3,276,280,917 | 9, 074, 526,353 | 6,940,946,783 | 16, 392, 187, 132 |
| 1952 | 37,929 | 1,288,382 | 3,637,620,160 | 9,146, 172,494 | 7,443,533,199 | 16,982,687,035 |
| 1953. | 38,107 | 1,327,451 | 3,957,018, 348 | 9,380,558,682 | 7,993,069,351 | 17,785,416, 854 |
| 1954. | 38,028 | 1,267,966 | 3,896,687,691 | 9,241,857,554 | 7,902,124,137 | 17,554, 527, 504 |
| 1955. | 38,182 | 1,298,461 | 4, 142, 409, 534 | 10, 338, 202, 165 | 8,753,450,496 | 19,513, 933,811 |
| 1956. | 37,428 | 1,353,020 | 4,570,692,190 | 11,721, 536, 889 | 9,605,424,579 | 21,636, 748,986 |

Based on Revised Standard Industrial Classifications

| 1957 | 36,578 | 1,355,313 | 4,809,218,401 | 11,846, 064,933 | 9,702,351,523 | 22,090,916,094 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1958 | 35,501 | 1,286,758 | 4,796, 102,682 | 11,770, 562,428 | 9, 857,742,613 | 22,064, 460,808 |
| 1959 | 35,075 | 1,300,765 | 5,062,744,615 | 12,496, 864,441 | 10,306, 282, 267 | 23, 204, 208, 671 |
| $1960{ }^{6}$ | 36,682 | 1,294,629 | 5, 207, 167, 393 | 12,705, 070, 820 | 10,533, 208, 994 | 23,747, 457,083 |
| $1961{ }^{7}$. | 32,415 | 1,265,032 | 5,231,446,969 | 13,127,707, 976 | 10,682,137,680 | 24, $243,294,949$ |

${ }^{1}$ For 1924-51, inclusive, the value added by manufacture is computed by subtracting cost of fuel, electricity and materials from gross value of products; for 1952 and 1953 the 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. ${ }_{2}$ In 1952 gross value of products was replaced by selling value of factory shipments; see text immediately preceding this table.
${ }^{3} \mathrm{~A}$ 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 force prior to 1925 was re-adopted. $\quad{ }^{4}$ Newfoundland is included from 1949 but figures for the fish processing industry for 1949 and 1950 are not available for that province and are not included. ${ }_{5}$ See text on p. 651.
${ }^{6}$ Includes two industries not covered in previous years; poultry processors in the food and beverage group and dental laboratories in the miscellaneous industries group. ${ }^{7}$ Notstrictly comparable with previous years; see third paragraph, p. 645.

## 2.-Summary Statistics of Manufactures, by Province, 195\%-61

Note.-Based on the revised Standard Industrial Classification and not comparable with statistics for significant years back to 1917 published in previous editions of the Year Book. See text on p. 645.

| Province and Year | Estab-lishments | Employees | Salaries and Wages | Cost at Plant of Materials Used | Value <br> Added by Manufacture ${ }^{1}$ | Selling Value of Factory Shipments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | \$ | \$ | \$ | \$ |
| Newfoundland- |  |  |  |  |  |  |
| $1957 \ldots \ldots \ldots .$ | 901 | 10,452 9,600 | $32,773,380$ $29,226,969$ | $53,947,998$ $52,103,887$ | $56,339,618$ $58,339,411$ | $117,640,668$ 116,903 |
| 1959. | 786 | 9,623 | 30,598,401 | 53,954,361 | 57,318,077 | 118, 938, 686 |
| 1960. | 635 | 9,489 | 32,703,188 | 58,903,797 | 64,560, 269 | 129,284,578 |
| 1961 ${ }^{2}$. | 338 | 9,896 | 35,969,805 | 60,628,868 | 70,009,989 | 137,224,209 |
| Prince Edward Island- |  |  |  |  |  |  |
| 1957........... | 189 | 1,613 | 3,212,374 | 17,999, 511 | 6,093,779 | 24, 493,412 |
| 1958. | 175 | 1,610 | 3,333, 260 | 18,978, 311 | 7,056,830 | 26,458,380 |
| 1959. | 174 | 1,721 1,806 | 3,774,651 | $19,618,122$ $21,220,060$ | $7,293,080$ $8,690,360$ | 27, 30241,361 |
| 1960. | 184 | 1,806 | 4,254,917 | 21,220,060 | 8,690,360 |  |
| $19612 .$. | 156 | 1,724 | 4,207,474 | 21,191,058 | 8,131,146 | 30,041,039 |
| Nova Scotia - |  |  |  |  |  |  |
| 1957. | 1,294 | 31,324 28,762 | $90,185,922$ $85,421,927$ | $229,876,316$ $210,221,415$ | $171,324,308$ $174,904,448$ | 400,767, 866 |
| 1959. | 1,257 | 27,997 | 87,250,746 | 215, 198, 733 | 158.359,003 | 386, 470, 411 |
|  | 1,278 | 28,606 | 92,280,125 | 220,292,841 | 174,808,237 | 406,182,088 |
| 19612. | 1,002 | 26,801 | 88, 919, 256 | 206,463,487 | 159,218,497 | 375, 303, 900 |

[^183]2.-Summary Statistics of Manufactures, by Province, 1957-61-concluded

| Province or Territory and Year | Estab-lishments | Employees | Salaries and Wages | Cost at Plant of Materials Used | Value <br> Added by Manufacture ${ }^{1}$ | Selling Value of Factory Shipments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | \$ | \$ | \$ | \$ |
| New Brunswick- |  |  |  |  |  |  |
| 1957................... | 964 | 20,975 | 60,477,787 | 174,685,390 | 122,893,918 | 311,715,799 |
| 1958................... | 922 | 20,734 | 61,059,451 | 170, 494,005 | 130, 573,966 | 311,927,294 |
| 1959. | 900 | 20,921 | 63,871,690 | 178,022,837 | 133,411, 396 | 325,414,733 |
| 1960. | 901 | 22,267 | 71,586,377 | 209,113,069 | 158,035, 175 | 377,110,146 |
| $1961{ }^{2}$. | 708 | 22,443 | 73, 892,368 | 223,050,728 | 159,979,430 | 397,456,695 |
| Quebec- |  |  |  |  |  |  |
| 1957. | 11,920 | 448,617 | 1,476,588,663 | 3,578,906,458 | 2,909,664,556 | 6,675,641,610 |
| 1958. | 11,507 | 428, 553 | 1,474,737,937 | 3,604,113,294 | 3,061,265,464 | 6,748,747,620 |
| 1959. | 11,293 | 430,531 | 1,545,790,163 | 3,760,205,098 | 3,003,262,640 | 6,915,449,758 |
| 1960. | 11,961 | 433,949 | 1,620,314,474 | 3,881,172,827 | 3,172,769,694 | 7,206,096,003 |
| $1961{ }^{2}$. | 10,955 | 423,729 | 1,626,572,189 | 3,982,419,548 | 3,207, 856,006 | 7,327, 257,662 |
| Ontario- |  |  |  |  |  |  |
| 1957. | 13,079 | 642,481 | 2,425,331,675 | 5,781,130, 876 | 5,002,690,629 | 11,020,527,114 |
| 1958. | 12,801 | 605,839 | 2,413,610,158 | 5,667,200, 473 | 4,907,056, 284 | 10,810,470,125 |
| 1959. | 12,650 | 614,480 | 2,560,103,902 | 6,143,081,617 | 5,322,722,752 | 11,599,765,654 |
| 1960. | 13,387 | 603,467 | 2,585,676,553 | 6,126,027,277 | 5,319,683,901 | 11,685,675,652 |
| $1961{ }^{2}$. | 12,081 | 591,501 | 2,597,408,249 | 6,337, 292,819 | 5,429, 853,032 | 11, 957,329,553 |
| Manitoba- |  |  |  |  |  |  |
| 1957. | 1,485 | 43,738 | 139,794,593 | 379, 176, 924 | 269,918,246 | 663,290,931 |
| 1958. | 1,536 | 42,022 | 141,286,373 | 396, 881, 181 | 281,190,697 | 690,545,053 |
| 1959. | 1,522 | 43,007 | 153,613,079 | 421,542,217 | 308,312,242 | 742,183,196 |
| 1960. | 1,592 | 42,339 | 154, 263,811 | 419,583,431 | 306,434,692 | 738,457,346 |
| $1961{ }^{2}$. | 1,416 | 41,212 | 157,302,360 | 441,440,322 | 315,235,281 | 769,894,639 |
| Saskatchewan- |  |  |  |  |  |  |
|  | 803 | 11,942 | 40,678,214 | 188,694,088 | 106, 957,193 | 304,646,672 |
| 1958. | 927 | 12,191 | 42, 941,559 | 198, 362,095 | 119,065, 901 | 329, 434,760 |
| 1959. | 840 | 12,407 | 46,532,277 | 212,568,673 | 123,974,515 | 344,084,883 |
| 1960. | 887 | 12,918 | 49,764,266 | 215, 404,848 | 119,776,935 | 344,773,261 |
| $1961{ }^{2}$.. | 675 | 12,149 | 48,947,762 | 218,815,222 | 120,971,938 | 344,432,203 |
| Alberta- |  |  |  |  |  |  |
| 1957. | 1,796 | 38,598 | 134,907,636 | 454,160,456 | 300,711,511 | 770,250,899 |
| 1958. | 1,672 | 37,402 | 138,039,307 | 488, 146,978 | 328,927,613 | 833,105, 391 |
| 1959. | 1,750 | 39,016 | 149,969,677 | 516, 032,439 | 338,032,355 | 869,404,244 |
| 1960. | 1,848 | 39,157 | 156,339,528 | 524,908,916 | 353, 197,544 | 889,657,800 |
| $1961{ }^{2}$. | 1,569 | 37,921 | 157,348,484 | 568,732,861 | 346,731,838 | 933, 826,476 |
| British Columbla- |  |  |  |  |  |  |
| 1957. | 4,125 | 105,407 | 404,610,392 | 985,859,605 | 754,342,979 | 1,784,584,855 |
| 1958. | 3,952 | 99,900 | 405,767,584 | 961,320,605 | 788,363,705 | 1,792,120,923 |
| 1959 | 3,981 | 100,947 | 420,629,945 | 974,483,535 | 852,929,943 | 1,872,399,846 |
| 1960 | 3,995 | 100,507 | 439,368,651 | 1,026,998,973 | 853,836,400 | 1,936,917,630 |
| 19612. | 3,502 | 97,518 | 440,197,776 | 1,065,073,007 | 863,442,538 | 1,967,091,438 |
| Yukon and N.W.T.- |  |  |  |  |  |  |
| 1957. | 22 | 166 | 657,765 | 1,627, 311 | 1,414,786 | 3,221,268 |
| 1958. | 16 | 145 | 678, 157 | 2,740,184 | 998,294 | 3,979,489 |
| 1959 | 12 | 115 | 610,084 | 2,156,809 | 666,264 | 2,832,386 |
| 1960 | 14 | 124 | 615,503 | 1,444,781 | 1,325,787 | 3,071,218 |
| $1961{ }^{\circ}$. | 13 | 138 | 681,246 | 2,600,056 | 707,985 | 3,434,135 |

## p. 645 .

${ }^{2}$ Not strictly comparable with previous years; see third paragraph,
The figures in Table 3 trace the tendencies in manufacturing industries as clearly as possible from 1917 to 1961 . In analysing statistics of production and materials used, price changes should be borne in mind, particularly the inflation of values in the years immediately following World War I, the drop in prices of commodities during the depressions following 1921 and 1930, and the increases again in World War II and the postwar period.

## 3.-Significant Statistics of Manufactures for Certain Years 1917-61

| Item | 1917 | 1920 | 19291 | 1933 | 1939 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Establishments......... . No. | 21,845 | 22,532 | 22,216 |  |  |
| Total employees........ " | 606,523 | 598,893 | 666,531 | 468,658 | 658,114 |
| Av. per establishment " | 27.8 | 26.6 | 30.0 | 19.7 | 26.5 |
|  | 497, 801, 844 | 717,493,876 | 777,291,217 | 436, 247, 824 | 737, 811,153 |
| Av. per establishment \$ | 22,788 | 31,843 | 34,988 | 18,345 | 29,744 |
| Av. per employee...... \$ Supervisory and office | 821 | 1,198 | 1,166 | 931 | 1,121 |
| employees.......... No. | 64,918 | 78,334 | 88,841 | 86,636 | 124,772 |
| Av. per establishment " | 3.0 | 3.5 | 4.0 | 3.6 |  |
| Total earnings......... § | 85, 353, 667 | 141,837,361 | 175,553,710 | 139,317,946 | 217,839,334 |
| Av. per employee...... $\$$ | 1,315 | 1,811 | 1,976 | 1,608 | 1,746 |
| Production workers...... No. | 541,605 | 520,559 | 577,690 | 382,022 | 533,342 |
| Av. per establishment " | 24.8 | 575,656,515 | 601, ${ }^{267.507}$ | - ${ }^{16.1}$ | ${ }_{519}{ }^{21.5}$ |
| Av. per employee....... \& | ,448, 762 | 575,656,106 | 601,737,507 | 296, 929,878 | 519,971, ${ }_{9} 19$ |
| Cost of materials........ \& | 1,539,678,811 | 2,085,271,649 | 2,029,670,813 | 967,788,928 | 1,836,159,375 |
| Av. per establishment \$ | 70,482 | 92,547 | 91,361 | 40,698 | 74,024 |
| Av. per employee...... \$ | 2,539 | 3,482 | 3,045 | 2,065 | 2,790 |
| facture ${ }^{2}$............. \$ | 1,281,131,980 | 1,621,273,348 | 1,755,386,937 | 919,671,181 | 1,531,051,901 |
| Av. per establishment ${ }^{2}$ \$ | 58,646 | 71,954 | 79,015 | 38,674 | 61,724 |
| Av. per employee ${ }^{2}$.... \$ | 2,112 | 2,707 | 2,634 | 1,962 | 2,326 |
| Gross value of products.. \$ | 2,820, 810,791 | 3,706,544,997 | 3,883,446,116 | 1,954,075,785 | 3,474,783,528 |
| Av. per establishment \$ | 129, 128 | 164,501 | 174,804 | 82,173 | 140,084 |
| Av. per employee...... \$ | 4,651 | 6,189 | 5,286 | 4,170 | 5,280 |
|  | 1944 | 1949 | 1953 | 19603, r | $1961{ }^{4}$ |
| Establishments..........No. | 28,483 | 35,792 | 38,107 | 36,682 | 32,415 |
| Total employees........ " | 1,222,882 | 1,171,207 | 1,327,451 | 1,294,629 | 1,265,032 |
| Av. per establishment " | 42.9 | 32.7 | 34.8 | 35.3 | 39.0 |
| Total earnings...i...... \$ | 2,029,621,370 | 2,591,890,657 | 3,957,018,348 | 5,207,167,393 | 5,231,446,969 |
| Av. per establishment \$ | 71,257 | 72,415 | 103,840 | 141,954 | 161,390 |
| Av. per employee...... \$ | 1,660 | 2,213 | 2,981 | 4,022 | 4,135 |
| Supervisory and office employees............ No. | 192,558 | 221,551 | 274,225 | 309,644 | 295,670 |
| Av. per establishment Total earnings........ | 418,065,594 | 628, 427, 937 | 1, 016,679,409 | 1,606,967,827 | 1,585, 333, 662 |
| Av. per employee...... \& | 2,171 | 2,836 | 3,707 | 5,190 | 5,362 |
| Production workers...... No. | 1,030,324 | 949,656 | 1,053,226 | 984,985 | 969,362 |
| Av. per establishment" | ${ }_{1}, 611,555^{36.2}$ | - 26.5 | 27.6 | 26.9 | - ${ }^{29.9}$ |
| Total earnings......... § | 1,611,555,776 | 1,963, 462,720 | 2,940, 338,939 | 3,600, 199,566 | 3,646,113,307 |
| Av. per employee...... \$ | , 1,564 | - 2,068 | -2,792 | - 3,655 | - $\begin{array}{r}3,761 \\ \hline 127,970\end{array}$ |
| Cost of materials....... ${ }_{\text {A }}$ | 4,832, 333,356 | 6,843, 231,064 | 9,380, 558,682 | 12,705, 070,820 |  |
|  | 169,657 3,952 | 191,194 5,843 | 246,163 7,067 | $\begin{array}{r} 346,357 \\ 9,814 \end{array}$ | $\begin{array}{r} 404,989 \\ 10,377 \end{array}$ |
| Value added by manu- | - $\begin{array}{r}3,352 \\ 4,015,776,010\end{array}$ | 5,843 | - ${ }^{7}, 067$ | 10,533, 208,994 | 10,682,137,680 |
| Av. per establishment ${ }^{\text {d }}$ \$ | - 140,989 | 5,330, 148,932 | 7,53, 209,753 | 10,533,287,149 | , 329,543 |
| Av. per employee ${ }^{2} \ldots .$. \$ | 3,284 | 4,551 | 6,021 | 8,136 | 8,444 |
| Gross value of products.. \$ | 9,073,692,519 | 12,479,593,300 | 17,785,416,854 ${ }^{5}$ | 23,747,457,083 ${ }^{5}$ | 24,243, 294, $949{ }^{5}$ |
| Av. per establishment \$ | 318,565 | 348,670 | 466,723 | 647,387 | 747,904 |
| Av. per employee...... \& | 7,420 | 10,655 | 13, 398 | 18,343 | 19,164 |

[^184]Value and Volume of Manufactured Production.-In the interpretation of manufacturing values over a number of years, variations in the level of prices must be borne in mind. In recent years, owing to great changes in prices, unadjusted value series used in
isolation have become increasingly inadequate as indicators of economic trends. Consequently, interest has shifted to measures of volume. The range of prices since 1917, on the base period 1935-39 $=100$, was as follows:-

| Year | General Wholesale Price Index | Price Index <br> of Fully and Chiefly <br> Manufactured Products | Year | General <br> Wholesale Price Index | Price Index of Fully and Chiefly <br> Manufactured Products |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1917....... | 148.9 | 150.9 | 1949. | 198.3 | 199.2 |
| 1920.. | 203.2 | 208.2 | 1953. | 220.7 | 228.8 |
| 1929. | 124.6 | 123.7 | 1957. | 227.4 | 237.9 |
| 1933. | 87.4 | 93.3 | 1958. | 227.8 | 238.3 |
| 1939. | 99.2 | 101.9 | 1959. | 230.6 | 241.6 |
| 1944. | 130.6 | 129.1 | 1960. | 230.9 | 242.2 |
| 1946. | 138.9 | 138.0 | 1961. | 233.3 | 244.5 |

Real income is ultimately measured in goods and services so that the growth of the volume of manufacturing production, as distinguished from its value, becomes a matter of great significance. The important thing to know is whether consumers are getting more goods and services and not whether they are expending more dollars and cents.

The Dominion Bureau of Statistics has published an index of industrial production* since 1926, which through the years has been subjected to several major revisions. The latest reconstruction was made possible by the availability of a great deal of basic data. Annual statistics valuable for this project have been collected by the Bureau from the end of World War I to the present and the scope of the monthly information has been greatly expanded. Applying methods developed through the experience of the past quartercentury, it has been possible to compute an index with a fair measure of accuracy from 1935 to the present.

The manufacturing sector is divided at the major group level into durable manufactures and non-durable manufactures. The movement of durable goods normally varies from that of non-durables; there tends to be greater fluctuation in durables from prosperity to depression and the demand for non-durables is more constant.

Table 4 shows the fluctuations in the volume indexes of durable, non-durable and total manufactured goods produced during the years 1946-60, and Tables 5 and 6 show the fluctuations in the groups comprised within the durable and non-durable classifications during the same period.

[^185]4.-Indexes of the Total Volume of Manufactured Production classified on the Basis of Durable and Non-durable Goods, 1946-60
$(1949=100)$
Note.-Indexes for the years 1935-45 are given in the 1961 Year Book, p. 637.

| Year | Durable <br> Manufactures | Non- durable Manu- factures |  | Year | Durable <br> Manufactures |  | All Manufactures |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1946.. |  |  |  |  | 124.8 | 121.2 | 122.9 |
| 1947.. | 93.3 | 93.2 | 93.2 | 1955. | 139.7 | 130.4 | 134.7 |
| 1948. | 98.4 | 96.3 | 97.3 | 1956. | 153.3 | 138.1 | 145.1 |
| 1949. | 100.0 | 100.0 | 100.0 | 1957. | 153.3 146.7 | 138.1 139.7 | 145.1 |
| 1950. | 106.5 119.9 | 106.0 110.8 | 106.2 | 1958 r. | 146.7 138.6 | 139.7 139.5 | 142.9 139.1 |
| 1952 | 124.8 | 113.2 | 118.5 | 1959.. | 149.5 | 150.1 | 149.8 |
| 1953.. | 133.6 | 120.2 | 126.4 | 1960. | 146.4 | 151.8 | 149.3 |

## 5.-Indexes of the Volume of Manufactured Production of the Groups Comprised within the Durable Manufactures Classification, 1946-60

$$
(1949=100)
$$

Note.-Indexes for the years 1935-45 are given in the 1961 Year Book, p. 638.

| Year | Wood Products | Iron and Steel Products | Transportation Equipment | Nonferrous Metal Products | Electrical Apparatus and Supplies | Nonmetallic Mineral Product |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1946.. | 86.8 | 80.8 | 80.6 | 81.8 | 67.7 | 72.0 |
| 1947. | 98.2 | 93.6 | 95.3 | 89.6 | 89.6 | 86.3 |
| 1948. | 100.6 | 101.5 | 97.2 | 99.2 | 91.5 | 92.2 |
| 1949..... | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1950.. | 108.2 | 102.5 | 108.3 | 104.0 | 112.5 | 111.0 |
| 1951. | 114.8 | 117.0 | 131.3 | 114.1 | 120.7 | 119.8 |
| 1952. | 115.8 | 118.9 | 149.1 | 112.2 | 124.5 | 122.8 |
| 1953. | 125.4 | 115.3 | 165.2 | 120.1 | 150.9 | 139.2 |
| 1954. | 124.2 | 106.2 | 137.3 | 117.0 | 151.7 | 146.1 |
| 1955. | 136.4 | 123.8 | 145.1 | 127.5 | 176.2 | 171.1 |
| 1956... | 138.3 | 145.3 | 157.9 | 133.0 | 191.3 | 191.5 |
| 1957. | 127.3 | 139.6 | 151.2 | 127.6 | 183.6 | 191.3 |
| 1958 ${ }^{\text {r }}$. | 131.1 | 126.4 | 130.8 | 125.8 | 175.5 | 205.9 |
| 1959.. | 136.6 | 147.2 | 131.5 | 134.7 | 184.8 | 223.2 |
| 1960... | 136.0 | 137.3 | 130.0 | 148.3 | 180.2 | 210.9 |

## 6.-Indexes of the Volume of Manufactured Production of the Groups Comprised within the Non-durable Manufactures Classification, 1946-60

$(1949=100)$
Note.-Indexes for the years 1935-45 are given in the 1961 Year Book, pp. 639-640.

| Year | Foods | Beverages | Tobacco and Tobacco Products | Rubber Products | Leather Products | Textile <br> Products (except clothing |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1946. | 103.0 | 82.2 | 90.6 | 89.5 | 124.0 | 88.7 |
| 1947. | 100.4 | 87.3 | 93.4 | 127.4 | 109.1 | 94.0 |
| 1948. | 99.5 | 95.3 | 93.4 | 116.4 | 95.5 | 97.3 |
| 1949. | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | ${ }_{112.0}^{10.0}$ |
| 1950. | 104.4 | 102.1 | 103.4 | 116.8 | 95.6 | 112.5 |
| 1951. | 107.0 | 106.2 | 95.0 | 124.9 | 90.4 | 113.1 |
| 1952. | 112.8 | 115.5 | 108.0 | 118.9 |  | 102.9 |
| 1953. | 115.1 | 124.6 | 120.3 | 130.3 | 106.4 | 107.9 94.3 |
| 1954. | 120.2 125.6 | 121.7 130.6 | 134.7 | 119.2 141.0 | 100.2 106.9 | 94.3 114.0 |
| 1955. | 125.6 | 130.6 | 135.5 | 141.0 | 106.9 | 114.0 |
| 1956. | 131.4 | 138.4 | 145.9 | 154.0 | 115.6 | 117.3 |
| 1957. | 133.2 | 143.2 | 161.0 | 147.8 | 115.6 | 117.6 |
| 1958 r. | 139.0 | 144.7 | 173.2 | 137.2 | 114.4 | 109.5 |
| 1959. | 145.0 | 155.8 160.2 | 179.9 182.0 | 161.1 143.3 | 120.3 111.8 | 122.5 |
| 1960....... |  |  |  |  |  |  |

6.-Inderes of the Volume of Manufactured Production of the Groups Comprised within the Non-durable Manufactures Classification, 1946-60-concluded

| Year | Clothing (textile and fur) | Paper Products | Printing, <br> Publishing and Allied Industries | Products of Petroleum and Coal | Chemicals and Allied Products | Miscellaneous Industries |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1946. | 95.3 | 81.0 | 76.9 | 74.3 | 87.0 | 80.2 |
| 1947. | 92.2 | 89.1 | 83.6 | 79.8 | 90.8 | 84.1 |
| 1948. | 97.6 | 94.9 | 92.6 | 89.9 | 95.7 | 81.4 |
| 1949. | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1950. | 101.3 | 109.3 | 101.5 | 111.9 | 107.7 | 104.8 |
| 1951. | 101.2 | 117.5 | 105.1 | 128.5 | 120.0 | 119.0 |
| 1952. | 111.4 | 113.4 | 107.5 | 140.1 | 122.3 | 121.8 |
| 1953. | 115.0 | 118.1 | 114.7 | 153.5 | 139.9 | 141.1 |
| 1954. | 108.9 | 124.1 | 121.6 | 165.0 | 152.1 | 134.3 |
| 1955. | 112.8 | 131.0 | 127.1 | 188.3 | 165.5 | 136.4 |
| 1956. | 117.6 | 137.8 | 137.3 | 216.1 | 174.8 | 147.0 |
| 1957. | 116.8 | 135.5 | 138.2 | 223.5 | 183.4 | 153.3 |
| 1958 r | 114.4 | 138.4 | 134.4 | 216.8 | 186.5 | 160.0 |
| 1959. | 113.1 | 144.7 | 143.2 | 241.5 | 208.4 | 183.2 |
| 1960.. | 107.9 | 148.4 | 146.5 | 250.6 | 219.7 | 191.6 |

## Section 2.-Manufactured Production Variously Classified

Beginning with the publication of 1960 statistics of manufacturing, industries and groups of industries follow the revised Standard Industrial Classification,* which has been established to take into account the changes in the structure of Canadian industry that have occurred during the past decade. In the past, commodity terms have been used in describing industries, so that the tables in previous editions of the Year Book (and in certain tables of this volume which have not yet been brought into line) contain industry titles such as pulp and paper, petroleum products, aircraft and parts, etc. In revising the Standard Industrial Classification, it was considered advisable to assign to each industry its most descriptive title, a title to be used whenever the industry was mentioned. Some industries are associated with particular processes (such as knitting mills and foundries) and others have traditional titles (such as machine shops and commercial printing). Some are best described in terms of the principal commodities they produce and it is necessary to distinguish these manufacturing industries from industries engaged in wholesale trade or retail trade in the same commodities. Therefore, many new titles of manufacturing industries contain such terms as "manufacturers", "industry", "plants", "mills" and "factories". These terms are applied, as far as possible, according to the usage in the industries concerned because it was felt that this terminology would be widely understood and clarity is more desirable than consistency in industry"titles.

## Subsection 1.-Manufactures classified by Industrial Groups and Individual Industries

The tables of this Subsection give detailed statistics showing the trends of production by industrial groups and individual industries. Table 7 gives summary statistics for the industrial groups for the period 1957-61; the figures for 1961 are not strictly comparable with those of the previous years because of a change in the definition of "establishment" (see also p. 645). Table 8 contains details of establishments, employment and output for the individual industries within the major groups for 1961; Table 9 lists the forty leading industries in 1961, ranked according to selling value of factory shipments; and Table 10 gives quantities and values of principal commodities produced in 1960-figures for 1961 were not available at the time of going to press.

[^186]
## 7.-Summary Statistics of Manufactures, by Industrial Group, 195\%-61

Note.-Based on the revised Standard Industrial Classification; see text on p. 651.

| Industrial Group and Year | Estab-lishments | Employees | Salaries and Wages | Cost at Plant of Materials Used | Value <br> Added by Manufacture | Selling Value of Factory Shipments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | \$ | \$ | \$ | \$ |
| Foods and Beverages- |  |  |  |  |  |  |
|  | 8,518 | 192,443 | 592,068, 171 | 2,752,710,942 | 1,408,721,142 | 4,229, 105,615 |
|  | 8,401 | 190,766 | 625, 386, 856 | 2,982,311,034 | 1,543,190,009 | 4, 578, 800,692 |
| 1959 | 8,150 | 192,396 | 664, 835, 670 | 3,012,334,446 | 1,628,418,783 | 4,728, 164,094 |
| 19602 | 8,488 | 198,611 | 700,983, 814 | 3,118,200,331 | 1,704,539,866 | 4,880, 293,652 |
| $1961{ }^{3}$ | 7,444 | 188,855 | 687, 995, 973 | 3,148,673,188 | 1,704,714,596 | 4, $905,434,328$ |
| Tobacco Products- ${ }_{\text {- }}$ |  |  |  |  |  |  |
|  | 49 | 9,905 | 33, 322, 821 | 160, 710, 422 | 88,179,320 | 249,734,356 |
| 1958 | 40 | 10,319 | 37,143,602 | 206, 043, 534 | 98,600,156 | 305, 138,636 |
| 1959 | 40 | 10,287 | 38,078, 218 | 212,770,678 | 111, 219,179 | 324,563,661 |
| 1960 | 40 | 9,731 | 38, 354,483 | 216, 354,230 | 117,789, 866 | 334, 413,635 |
| $1961{ }^{3}$. | 38 | 9,442 | 39,153, 878 | 205,297, 105 | 128,639,932 | 334,983, 236 |
| Rubber- |  |  |  |  |  |  |
|  | 90 | 22,186 | 83,219,238 | 144,271,902 | 176, 947,370 | 326, 182,742 |
| 1958 | 91 | 19,951 | 76,469,794 | 128,619,194 | 174, 884,099 | 308,488,244 |
| 1959 | 90 | 21,101 | 86,894,694 | 160,441,694 | 188,249,480 | 347,798,004 |
| 1960. | 92 | 20,311 | 84,525,519 | 152,660,298 | 168,965,070 | 323,053,118 |
| $1961{ }^{3}$. | 93 | 18,860 | $82,003,785$ | 148,683,954 | 171,593,527 | 331,134,713 |
| Leather- |  |  |  |  |  |  |
| 1957. | 641 | 31,810 | 79,415,508 | 124,774,575 | 118,581,669 | 243,747,757 |
| 1958 | 619 | 30,981 | 80, 878,173 | 127,543,441 | 122,908,431 | 253,536,245 |
| 1959 | 600 | 31,601 | 84, 066,826 | 145, 912,239 | 132,051,503 | 275, 622,759 |
| 1960 | 608 | 30,424 | $83,918,955$ | 134, 436,607 | 130, 595, 924 | 268,114,309 |
| $1961{ }^{3}$ | 555 | 31,413 | 89,574,243 | 151, 406,469 | 140,387, 914 | 291, 068,523 |
| Textiles- |  |  |  |  |  |  |
|  | 936 | 68,315 | 200,794,739 | 411,453,084 | 318,824,667 | 745,645,396 |
| 1958 | 909 | 63,265 | 192, 526, 181 | 396,711,987 | 322,472,570 | 740,058,566 |
| 1959 | 889 | 63,524 | 202,525,667 | 432,984,882 | 362,516,410 | 804,261,185 |
| 1960 | 924 | 61,756 | 206,500,220 | 430,561,782 | 368,610,350 | 810,522,933 |
| $1961{ }^{3}$ | 883 | 62,544 | 212,557,789 | 468,001,049 | 392,688,681 | 875,287,700 |
| Knitting Mills- |  |  |  |  |  |  |
| 1957. | 310 | 21,661 | 50.216,758 | 88,782,158 | 81,413,897 | 172,161,757 |
| 1958. | 321 | 20,936 | 49, 829,169 | 88,610,388 |  | 173,576,575 |
| 1959 | 319 | 20,992 | 52,187, 295 | 98,658,641 | 90,748,070 | 189,267,687 |
| 1960 | 362 | 20,765 | 54,050,926 | 104, 085,566 | 93,359,607 | 198, 159,994 |
| $1961{ }^{3}$ | 358 | 21,459 | 57,469,382 | 117,361,967 | 100,641,407 | 219,295,978 |
| Clothing- |  |  |  |  |  |  |
| 1957 | 2,533 | 89,991 | 215,046, 237 | 396, 967, 365 | 342,639,068 | 742, 845,449 |
| 1958 | 2,446 | 86,768 | 214, 888, 038 | 388, 093, 909 | 350, 135,455 | 742, 185, 179 |
| 1959 | 2,344 | 86,659 | 224,040, 281 | 399,842,421 | 362,010,983 | 759,219,309 |
| 1960 | 2,391 | 86, 875 | 227, 213, 881 | 402,732,198 | 369,365,614 | 770, 468,489 |
| $1961{ }^{3}$ | 2,307 | 87,728 | 234, 388, 479 | 427, 523,380 | 377,072,432 | 801, 535, 491 |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| 1958. | 7,939 | 88,103 | 267,793, 928 | 558, 286, 107 | $442,214,723$ | 1,017,689,686 |
| 1959 | 7,835 | 90,018 | 277, 560,778 | 590, 818,752 | 472,692, 288 | 1,079, 259, 366 |
| ${ }_{1961}^{1960}$ | 7,490 | 85,262 80,042 | $283,521,417$ $280,330,704$ | 598, $584,792,751$ | $454,978,488$ $431,372,733$ | $1 \begin{aligned} & 1,068,041,527 \\ & 1,035,343,618\end{aligned}$ |
| Furniture and Fixtures- |  |  |  |  |  |  |
| 1957. | 2,010 | 34,028 | 101, 218, 122 | 157,532,471 | 159,084,872 | 320,395,746 |
| 1958 | 1,859 | 32,812 | 101,069,479 | 155,669,395 | 163,648,782 | 322,851,798 |
| 1959 | 1,925 | 33,803 | 110,086,601 | 168,063,646 | 175, 237,924 | 344,422,717 |
| 1960 | 2,099 | 34,206 | 112,660, 387 | 166,268,761 | 178, 493, 573 | 347,980,824 |
| $1961{ }^{3}$. | 2,089 | 33,153 | 112,445,673 | 174,635,120 | 185, 102,995 | 362,062,105 |
| Paper and Allied Industries- |  |  |  |  |  |  |
| 1958. | 563 | 93,443 | 411, 614,113 | 891, 897, 757 | 914, 801, 141 | 1,902,602,012 |
| 1959. | 561 | 94,664 | 432, 408, 982 | 943, 265, 277 | 982, 823,273 | 2,037,551,878 |
| 1960. | 581 | 95,433 | 458,624, 265 | 979,872,639 | 1,035,904,372 | 2,128,107,197 |
| $1961{ }^{3}$ | 569 | 94,862 | 471,137,165 | 1,021,502,882 | 1,071,316,186 | 2,205,734,055 |

[^187]7.-Summary Statistics of Manufactures, by Industrial Group, 195\%-61-concluded

| Industrial Group and Year | Estab-lishments | Employees | Salaries and Wages | Cost at Plant of Materials Used | Value <br> Added by Manufacture | Selling Value of Factory Shipments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | \$ | \$ | \$ | \$ |
| Printing, Publishing and Allied Industries- |  |  |  |  |  |  |
|  | 3,354 | 72,243 | 269,475,421 | 228,778, 515 | 473, 140, 522 | 707,759,185 |
| 1958 | 3,272 | 70,677 | 284, 473,776 | 237, 188, 035 | 504, 292, 221 | 746, 227,780 |
| 1959 | 3,314 | 72,551 | 305, 140, 444 | 256,530,790 | 550,657,425 | 808, 639, 939 |
| 1960 | 3,462 | 73,694 | 322,788, 021 | 274, 846,086 | 586,142,192 | 865, 930, 729 |
| $1961{ }^{3}$ | 3,428 | 72,779 | 327, 900, 870 | 275, 716, 714 | 591,099, 208 | 872,292,337 |
| Primary Metal- |  |  |  |  |  |  |
| 1957 | 431 | 92,894 | 417,080,485 | 1,424,711,562 | 990,448, 242 | 2,511,312,371 |
| 1959 | 411 | 88,817 | 436,277,440 | 1,499,019,794 | 1,035,078,014 | 2,610,650,087 |
| 1960 | 418 | 90,025 | 454,582, 536 | 1,598,265,430 | 1,047,115,445 | 2,742,520,081 |
| $1961{ }^{3}$ | 410 | 87,238 | 457,619, 351 | 1,591,688,041 | 1,129,978,204 | 2,806,483,787 |
| Metal Fabricating (except machinery and transportation equipment)- |  |  |  |  |  |  |
|  | 2,457 | 100,849 | 393, 967, 825 | 629,122,764 | 679,437,957 | 1,326,743,944 |
| 1959 | 2, 2,613 | 93,995 98 | 418, 305,886 | 675,064,982 | 735, 957120 | 1,415,334,196 |
| 1960 | 2,896 | 98,505 | 428, 738, 381 | 662,679,077 | 750,664,816 | 1,432,904, 803 |
| $1961{ }^{3}$ | 2,859 | 94,611 | 421,915, 944 | 734,400,126 | 739,018, 830 | 1,492,690,845 |
| Machinery (except electrical)- |  |  |  |  |  |  |
|  | 494 | 46,053 | 181,098,852 | 267,315,662 | 331,400,658 | 604,782,974 |
| 1958 | 523 | 41,348 | 173,722.971 | 258,642, 207 | 285, 603, 102 | 554,564,798 |
| 1959 | 521 | 45,264 | 201,066,136 | 302,870,740 | 340,390,761 | 626, 103,977 |
| 1960 | 533 | 43,495 | 199,427, 682 | 299,071,885 | 329,763,223 | 642,458,967 |
| $1961{ }^{2}$ | 546 | 42,083 | 195,6C6, 445 | 303, 943, 943 | 329,763,583 | 639,739,426 |
| Transportation Equipment- |  |  |  |  |  |  |
| 1957. | 620 | 144,753 | 591, 941, 950 | 1,295,771,026 | 959, 489, 205 | 2,227,818,862 |
| 1958. | 621 | 126,121 | 554,193.448 | 1,161,487,548 | 883,763,897 | 2,085,796,821 |
| 1959 | 640 | 113, 583 | 531,689,833 | 1,215,799,941 | 911,812,139 | 2,028, 871,429 |
| 1960. | 687 | 109,417 | 518,352,786 | 1,096,084,723 | 871,734,759 | 2,000,689,246 |
| $1961{ }^{3}$ | 671 | 107,709 | 522,470,347 | 1,130,170,158 | 828,669,699 | 1,960,777,154 |
| Electrical Products- |  |  |  |  |  |  |
|  | 513 | 90,092 | 351,612,415 | 558, 106,167 | 623,144,136 | 1,192,332,448 |
| 1958 | 512 | 82,445 | 343, 434, 579 | 535,054,177 | 572,304,656 | 1,121,892,189 |
| 1959 | 522 | 81,727 | 347,088, 588 | 568,226, 889 | 617,677,328 | 1,169,628,062 |
| 1960 | 548 | 78,648 | 348, 588, 227 | 545, 995,616 | 624,613,582 | 1,175, 966, 233 |
| $1961{ }^{3}$. | 531 | 79,531 | 353,568, 079 | 585,351,554 | 617,534, 041 | 1,205,534,321 |
| Non-metallic Mineral Products- |  |  |  |  |  |  |
| 1957. | 1,204 | 39,098 | 146,249,313 | 205,237,469 | 325,133, 046 | 581,535, 118 |
| 1958 | 1,221 | 39,844 | 157,759,293 | 213,561,937 | 355,542,551 | 614, 809,840 |
| 1959 | 1,225 | 42,365 | 174,491,705 | 236,584, 159 | 390,618,532 | 672,351,110 |
| 1960 | 1,331 | 41,606 | 173, 438, 100 | 230,750,338 | 373,070,496 | 647,461,580 |
| $1961{ }^{3}$ | 1,292 | 40,128 | 174, 087, 186 | 250,116,408 | 381,393,965 | 675,012,816 |
| Petroleum and Coal Products- |  |  |  |  |  |  |
| 1957. | 85 | 15,617 | 78,799,697 | 841,059,891 | 505,597,526 | 1,401,777,0404 |
| 1958. | 96 | 16,316 | 85, 551,656 | 839, 526,042 | 478,508,373 | 1,385, 215,0804 |
| 1959 | 88 | 14,661 | 82,995, 439 | 870,753,290 | 245,631,947 | 1,164,297,008 ${ }^{4}$ |
| 1960 | 96 | 14,513 | 85,446,911 | 873,633,610 | 279,705, 068 | 1,197, 967,7584 |
| $1961{ }^{3}$ | 91 | 14,053 | 85,339, 864 | 920,630,338 | 290,698,500 | 1,220,193,764 |
| Chemicals and Chemical Products- |  |  |  |  |  |  |
| 1957. | 1,123 | 53,986 | 218,998, 357 | 512,831,179 | 585,779, 852 | 1,139, 898, 207 |
| 1958 | 1,125 | 53,852 | 230,685, 526 | 540, 932,720 | 656,321,752 | 1,235,704,792 |
| 1959 | 1,123 | 53,995 | 239,748, 172 | 577,665,923 | 689,707,619 | 1,316,356, 806 |
| 1960 | 1,143 | 54, 269 | 253, 201, 119 | 582, 843,034 | 747,753, 234 | 1,373,466,548 |
| $1961{ }^{3}$ | 1,072 | 52,167 | 254,004,293 | 623,943,855 | 760,927,799 | $1,432,878,158$ |
| Miscellaneous Manufacturing Industries- |  |  |  |  |  |  |
| 1957. | 1,887 | 41,243 | 130,957,754 | 180,169,568 | 235,453,772 | 420, 897,680 |
| 1958 | 1,901 | 41,981 | 140, 203, 712 | 201, 193,985 | 252, 880,696 | 456, 183, 331 |
| 1959 | 1,865 | 43,933 | 153,255,960 | 219,255,257 | 282,783, 489 | 501,845,397 |
| ${ }_{1961} 196{ }^{2}$ | 2,493 | 47,083 | 172,219,763 | 237, 597,396 | 300,043, 449 | 538,935, 510 |
| 196 | 1,928 | 46,375 | 171,877,519 | 263,868,914 | 309,523,448 | 574,812,594 |

[^188]
## 8.-Principal Statistics of Individual Manufacturing Industries, 1961

Note.-Based on revised Standard Industrial Classification (see p. 651) and new establishment concept (see third paragraph, p. 645).

| Group and Industry | Estab-lishments | Employees | Salaries and Wages | Cost at Plant of Materials Used | Value Added by Manufacture | Selling Value of Factory Shipments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | \$ | \$ | \$ | \$ |
| Foods and Beverages | 7,444 | 188,855 | 687,995,973 | 3,148,673,188 | 1,704,714,596 | 4,905,434,328 |
| Slaughtering and meat packing plants. | 242 | 25,075 | 112,925,245 | 893,822,118 | 182,740,227 | 1,080,913,148 |
| Animal oils and fats plants.... | 17 | 451 | 1,856,806 | 4,187,020 | 5,321,865 | 9,862,305 |
| Sausage and sausage casing manufacturers. | 85 | 1,578 | 5,626,637 | 22,020,687 | 11,854,110 | 34,134,370 |
| Butter and cheese plants | 732 | 21,678 | 84, 355,529 | 267,020,276 | 136,176,755 | 411, 41616,839 |
| Condenseries... | 23 | 1,128 | 4,188,648 | 58, 297, 103 | 18, 998, 801 | 77,086, 280 |
| Ice cream manufacturers | 41 | 1,463 | 5,567,272 | 19, 213, 047 | 12,216,409 | 32,165,940 |
| Process cheese manufacturers. | 10 | 1,095 | 5,114,520 | 28,632,088 | 18,129,270 | 46,736,373 |
| Fish products.. | 340 | 13,542 | 30,433,891 | 110,691,831 | 59, 475,093 | 169,825,334 |
| Fruit and vegetable canners and preservers. | 335 | 16,467 | 49, 451,789 | 198,676,777 | 131,226, 180 | 328,098,257 |
| Grain Mills- $\quad$ Feed manufacturers.......... | 958 | 7,039 | 24,512,868 | 225,930,728 | 59,617,185 | 289,660,605 |
| Flour mills........ | 54 | 3,964 | 16,921,164 | 173, 682,471 | 45, 274, 550 | 220,585,667 |
| Breakfast cereal manufacturers | 19 | 1,471 | 6,629,585 | 15,650,720 | 23,632,380 | 40,036, 251 |
| Bakery Products- | 48 | 5,945 | 18,314,735 | 42,221,627 | 44,616,114 | 87,647,846 |
| Bakeries. | 2,529 | 35,637 | 115, 753, 102 | 164,609,027 | 194,337,555 | 369,637,256 |
| Confectionery manufact | 194 | 9,155 | 28,088, 517 | 71, 244,799 | 68,266,277 | 140, 537,003 |
| Sugar refineries. | 11 | 3,046 | 13,770,344 | 86, 345,969 | 41,365,699 | 133, 453, 775 |
| Vegetable oil mills | 12 | 537 | 2,576,424 | 53,983,095 | 8,724,504 | 62,674,794 |
| Macaroni manufacturer | 18 | 856 | 2,603, 012 | 10,027,078 | 8,672,786 | 18, 800,089 |
| Miscellaneous food manufactu | 267 | 10,922 | 43,094,491 | 252,773,582 | 152,206,365 | 408,178,870 |
| Beverage Manufacturets- | 502 | 7,840 | 29,765,769 | 52,871,111 | 116,068, 270 | 72,647,090 |
| Distilleries... | 19 | 4,323 | 21,001,287 | 55,038,271 | 113, 895,198 | 169, 207,919 |
| Breweries. | 54 | 7,623 | 40,881,549 | 59, 061, 535 | 197, 398,696 | 259, 438,200 |
| Wineries. | 20 | 527 | 2,528,633 | 8,778,357 | 9,952,873 | 18,589,810 |
| Tobacco Products. | 38 | 9,442 | 39,153,878 | 205,297,105 | 128,639,932 | 334,983,236 |
| Leaf tobacco processing | 16 | 1,625 | 5,222,569 | 82, 821,722 | 21,176, 148 | 105, 026,789 |
| Tobacco products manufacturers | 22 | 7,817 | 33,931, 309 | 122,475,383 | 107, 463,784 | 229,956,447 |
| Rubber | 93 | 18,860 | 82,003,785 | 148,683,954 | 171,593,527 | 331, 134,713 |
| Rubber footwear manufacturers. | 6 | 4,023 | 12,669,668 | 12,445,572 | 19,462,576 | 32,578,663 |
| Rubber tire and tube manufacturers. | 10 | 7,502 | 38,013,950 | 87,174,440 | 84, 855,754 | $180,248,120$ |
| Other rubber.................... | 77 | 7,335 | 31,320,167 | 49,063,942 | 67,275,197 | 118,307,930 |
| Leather | 555 | 31,413 | 89,574,243 | 151,406,469 | 140,387,914 | 291, 068,523 |
| Leather tanner | 44 | 3,538 | 13,572,364 | 38,364, 107 | 19,495,638 |  |
| Shoe factories | 237 | 20,866 | 57,099,576 | 83, 970,518 | 89,563,348 | $173,123,888$ |
| Leather glove factories | 56 | 1,362 | 3,469,693 | 5,199,005 | 5,343,728 | 10,483,875 |
| Boot and shoe findings manufacturers. | 37 | 1,276 | 3,569,031 | 6,214,913 | 5,984,944 | 12,303,921 |
| Miscellaneous leather products manufacturers. | 181 | 4,371 | 11,863,579 | 17,657,926 | 20,000,256 | 37,294,402 |
| Textiles | 883 | 62,544 | 212,557,789 | 468,001,049 | 392,688,681 | 875,287,700 |
| Cotton yarn and cloth mills | 39 | 17,384 | 55,799, 803 | 136, 226,684 | 96,215,791 | 236,711,105 |
| Wool yarn mills. | 26 | 1,927 | 5,694,926 | 14, 165, 175 | 9,422,042 | 68,443,002 |
| Wool cloth mills | 55 | 6,085 | 19, 475, 129 | $36,227,424$ $118,305,942$ | - $323,477,735$ | 248,717,577 |
| Synthetic textile mills. | 56 | 15,849 852 | $59,392,697$ $3,160,245$ | $118,305,942$ $8,813,015$ | $123,506,053$ 5 | 14, 840,990 |
| Fibre preparing mills. | 30 16 |  | $3,160,245$ $3,710,281$ | 9,414,388 | 6,963,656 | 16,019,744 |
| Thread mills.............. | 15 | 1,953 | 3,667,342 | 10,294,998 | 6, 285,327 | 16,671,720 |
| Narrow fabric mills.......... | 47 | 2,135 | 6,484,576 | 10,928, 663 | 12,389, 364 | $23,539,309$ 6812,549 |
| Pressed and punched felt mills. | 10 | - 417 | $1,636,456$ $5,939,384$ | $3,668,744$ $17,606,656$ | $2,998,324$ $11,441,745$ | 29,314,331 |
| Carpet, mat and rug industry. | 15 | 1,735 | 5,939,384 | 17,606,656 | 11,441,745 |  |
| Textile dyeing and finishing plants. | 54 | 1,969 | 7,299,520 | 5,614,268 | 12,025,785 | 18,520,42 |
| Linoleum and coated fabrics industry.............................. | 16 | 2,309 | 10,785,879 | 19,038,826 | 17,226,358 | 36,967,315 |

## 8.-Principal Statistics of Individual Manufacturing Industries, 1961-continued

| Group and Industry | Estab-lishments | Employees | Salaries and Wages | Cost at Plant of Materials Used | Value <br> Added by Manufacture | Selling Value of Factory Shipments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | \$ | \$ | \$ | \$ |
| Textiles-concluded |  |  |  |  |  |  |
| Canvas products industry | 132 | 1,689 | 4,822,789 | 9,494,965 | 8,221,104 | 17,952,327 |
| Cotton and jute bag industry | 29 | 1,024 | 3,248,598 | 21,889,524 | 6,604,607 | 28,670,018 |
| Miscellaneous TextilesAutomobile fabric accessory manufacturers. $\qquad$ | 26 | 850 | 2,893,150 | 7,878,389 | 5,333,889 | 13,190,549 |
| Embroidery, pleating, hemstitching manufacturers. | 130 | 1,538 | 4,169,233 | 2,256,775 | 6,303,209 | 8,625,459 |
| Miscellaneous textiles n.e.s. industry. | 187 | 4,645 | 14,377,778 | 36,176,613 | 29,924,092 | 66,261,092 |
| Knitting Mills. | 358 | 21,459 | 57,469,382 | 117,361,967 | 100,641,407 | 219,295,878 |
| Hosiery mills | 166 | 8,277 | 22,247,770 | 35,414,920 | 40,497, 514 | 75,679,385 |
| Other knitting mills | 192 | 13,182 | 35, 221, 612 | 81, 947, 047 | 60,143,893 | 143,616,593 |
| Clothing | 2,307 | 87,728 | 234,388,479 | 427,523, 380 | 377,072,432 | 801,535,491 |
| Men's clothing fac | 488 | 29,368 | 80, 224, 956 | 157, 760,437 | 123,614,414 | 279,088, 853 |
| Men's clothing contractors | 136 | 5,471 | 11,116,056 | 1,498,798 | 13,715,046 | 15, 344, 832 |
| Women's clothing factories | 633 | 25,927 | 74,488,289 | 151,134,488 | 127,738,427 | 277,477,796 |
| Women's clothing contractors | 184 | 5,476 | 10,383,843 | 1,078,672 | 12,968,477 | 14,261,384 |
| Children's clothing industry | 182 | 8,149 | 18,877,284 | 43, 224,615 | 30, 329, 875 | 73,256, 354 |
| Fur goods industry | 444 | 3,676 | 13,731,083 | 36,930,703 | 22,550,634 | 59, 553, 536 |
| Hat and cap industry | 130 | 3,950 | 11,218,363 | 13,266,512 | 17,885,349 | 31,475, 380 |
| Foundation garment industry | 42 | 3,913 | 9,902,654 | 14,807,384 | 20,823,773 | 35,841,568 |
| Fabric glove manufacturers. | 13 | 757 | 1,674,654 | 2,945,141 | 2,813,493 | 5,733,223 |
| dustry....... | 55 | 1,041 | 2,771,297 | 4,876,630 | 4,632,944 | 9,502,565 |
| Wood | 5,251 | 80,042 | 280,330,704 | 581,792,751 | 431,372,733 | 1,035,343,618 |
| Sawmills | 3,260 | 41,134 | 144,699,686 | 306, 238, 148 | 218,227,808 | 534,590,574 |
| Shingle mills | 53 | 1,396 | 6,168, 320 | 8,217, 324 | 7,816,284 | 16,328,748 |
| Veneer and plywood mills | 75 | 11,109 | 42,383,394 | 79,157,716 | 60,284,921 | 143,718,667 |
| Sash and door and planing mills (excl. hardwood flooring)..... | 1,356 | 16,175 | 54, 858, 138 | 138,583,139 | 93,688,651 | 235,160,488 |
| Hardwood flooring. | 19 | 1,208 | 3,629, 570 | 7,849,345 | 5,976,681 | 13,997,256 |
| Wooden box factorie | 160 | 2,802 | 8,042,831 | 10,074,770 | 11,874,774 | 22,324,470 |
| Coffin and casket industr | 64 | 1,350 | 4,171,999 | 4,907,448 | 6,643,398 | 11,738,038 |
| Miscellaneous Wood- |  |  |  |  |  |  |
| Wood handles and turning | 60 | 1,227 | 3,415,580 | 4,239,095 | 4,429,140 | 9,232,783 |
| Woodenware | 25 | 481 | 1,205,990 | 1,660,450 | 1,802,367 | 3,537,440 |
| Cooperage.. | 33 | 482 | 1,521,987 | 3,170,418 | 1,949,390 | 5,207,005 |
| Miscellaneous wood industries n.e.s. (incl. wood preservation). | 146 | 2,678 | 10,233,209 | 20,694,898 | 18,679,319 | 39,508,149 |
| Furniture and Fixtur | 2,089 | 33,153 | 112,445,673 | 174,635,120 | 185,102,995 | 362,062,105 |
| Household furniture industry | 1,580 | 19,936 | 66,149,253 | 100,008, 167 | 104,219,277 | 205,596,993 |
| Office furniture industry | 44 | 2,853 | 10,703, 442 | 11,989, 391 | 17,638,038 | 29,985, 050 |
| Other furniture industries. | 403 | 9,169 | 32,361,837 | 55,657,664 | 57,460,141 | 113,667,410 |
| Electric lamp and shade industry | 62 | 1,195 | 3,231,141 | 6,979,898 | 5,785,539 | 12,812,652 |
| Paper and Allied Indu | 569 | 94,862 | 471,137,165 | 1,021,502,882 | 1,071,316,186 | 2,205,734,055 |
| Pulp and paper mills. | 125 | 65,799 | 355, 171,060 | 680,167,806 | 842,419,885 | 1,634,606,001 |
| Asphalt roofing manufac | 19 | 1,886 | 8,670,520 | 22,585,758 | 19,589, 356 | 42,162,355 |
| facturers <br> box and set-up box manu- | 133 | 7,520 | 28,360,323 | 65,262,823 | 48,357,707 | 113,435,640 |
| Corrugated box manufacturers | 40 | 6,274 | 26,597,373 | 96,084,552 | 49,966, 157 | 147,063,338 |
| Paper bag manufacturers. | 62 | 3,642 | 12,841,221 | 54, 252,776 | 28,710,862 | 82,577,016 |
| Other paper converters. | 190 | 9,741 | 39,496,668 | 103, 149, 167 | 82,272,219 | 185, 889,705 |
| Printing, Publishing and Allied Industries. | 3,428 | 72,779 | 327,900,870 | 275,716,714 | 591,099,208 | 872,292,337 |
| Commercial Printing- |  |  |  |  |  |  |
| Printing and bookbinding..... | 1,688 | 21,892 | 87,931,316 | 82,874,305 | 146,131,269 | 230,144,643 |
| Eithographing................... <br> Engraving, Stereotyping and <br> Allied Industries- | 326 | 10,282 | 45, 943, 024 | 59,748, 348 | 79,907,537 | 140,327, 433 |
| Engraving and duplicate plates Trade composition or typeset- | 171 | 4,102 | 22,477,676 | 8,466, 835 | 33,245,787 | 42,203,290 |
| ting...................... | 57 | 1,187 | 6,427,590 | 562,165 | 9,243,568 | 9,870,910 |
| Publishing only Printing and publishing | 434 752 | 4,035 | 17,253,249 | 29,752,903 | 49,650,899 | 79,418,346 |
| Printing and publishing. | 752 | 31,281 | 147,868,015 | 94,312,158 | 272,920,148 | 370,327,715 |

## 8.-Principal Statistics of Individual Manufacturing Industries, 1961-continued

| Group and Industry | Estab lishments | Employees | Salaries and <br> Wages | Cost at Plant of Materials Used | Value <br> Added by Manufacture | Selling Value of Factory Shipments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | \$ | \$ | \$ | \$ |
| Primary Metal. | 410 | 87,238 | 457,619,351 | 1,591,688,041 | 1,129,978,204 | 2,806,483,787 |
| Iron and steel mills.. | 42 | 34,546 | 193,111,898 | 351,346,159 | 411,494,397 | 789,271,070 |
| Steel pipe and tube | 18 | 3,233 | 17,805,632 | 101,731,357 | 47, 808, 496 | 154,868, 399 |
| Iron foundries... | 140 | 8,172 | 34, 453,040 | 36,665,002 | 54,326,889 | 94,624,917 |
| Aluminum rolling, casting and extruding. | 24 43 | 29,290 5,893 | 155,948,335 | 891,950, 994 | 520,096,705 | 1,471,048,021 ${ }^{1}$ |
| Copper and a | 43 | 5,893 | 28,536,066 | 76,751,221 | 34,111, 024 | 110,455,977 |
| and extruding | 69 | 3,441 | 16,473,716 | 92, 138, 052 | 29,510,373 | 122,307,936 |
| etal rolling, casting and ext ing, n.e.s...................... | 74 | 2,663 | 11,290,664 | 41,105,256 | 22,630,320 | 63,907,467 |
| Metal Fabricating (except machinery and transportation equipment) | 2,859 | 94,611 | 421,915,944 | 734,400,126 | 739,018,830 |  |
| Boiler and plate works. | 68 | 4,511 | 20,061,851 | 36,078, 235 | 31,350,617 |  |
| Fabricated structural metal industry. | 78 | 13,789 | 68, | 112,014,777 | 96,029,106 | 210,061,2031 |
| Ornamental and architectural metal industry. | 549 | 9,505 | 38,845,933 | 61,140,812 | 70,083,618 | 32,229,591 |
| Metal stamping, pressing and coating industry | 436 | 18,584 | 84,975,289 | 203,300,028 | 168,578,452 | 63 |
| Wire and wire products manufacturers. | 199 | 11,995 | 56,858,603 | 125,325 | 73 | 880 |
| Hardware, tool and cutlery manufacturers. | 308 | 8,551 | 36,269 | 36,802,171 | 74,368, 059 | 111,427,554 |
| Heating equipment manufacturers.. | 112 | 4 , | 21,011,928 | 35,274,524 | 42,259,119 | 87,572 |
| Machine shops | 778 | 8,144 | 32,915,367 | 29,177,808 | 47,155,739 | 77,441,566 |
| Miscellaneous metal fabricating industries. | 331 | 14,599 | 62,567,983 | 95,286,258 | 117,508,347 | 218, 977,448 |
| Machinery (except electrical machinery) | 546 | 4, | 195,606 | 303,943 | 329,763,583 | ,426 |
| Agricultural implement industry | 67 | 10,487 | 49, 538, 6 | 73,947, 3 | 60,092,972 | 138,044,910 |
| Miscellaneous machinery and equipment manufacturers. | 420 | 26,610 | 122,746, 209 | 178,603,989 | 208,462,946 | 390,689,239 |
| Commercial refrigeration and air conditioning equipment manufacturers. | 34 | 1,554 | 6,729,83 | 10,138,479 | 12,707,870 | 3,181,886 |
| Office and store machinery manufacturers. | 25 | 3,432 | 16,591,793 | 41,254,099 | 48,499,795 | 87,823,391 |
| Transportation Equipment | 671 | 107,709 | 522,470,34 | 1,130,170,1 | 828,669,699 | 1,960,777,154 |
| Aircraft and parts manufactu | 80 | 28,386 | 141,930,122 | 157,845,455 | 192,084,988 | 348,245,1731 |
| Motor vehicle manufacturers. | 17 | 21,673 | 120,938, 513 | 603,349,583 | 277, 150,529 | 870,942,359 |
| Truck body and trailer manufacturers. | 112 | 3,369 | 13,291,847 | 25,839, 90 | 21,835,815 | 48,090,7C9 |
| Motor vehicle parts and accessories manufacturers | 126 | 20,820 | 103,001,867 | 185,994,866 | 160,762,326 | 352,778,908 |
| Railway rolling-stock in | 29 | 16,529 | 72,705,929 | 99,139,009 | 78,737,715 | 182,569,012 ${ }^{1}$ |
| Shipbuilding and repair. | 63 | 14,848 | 63,777,724 | 48,136,186 | 86,668,409 | 136, 629,4591 |
| Boatbuilding and repair | 232 | 1,483 | 4,636,876 | 5,643,727 | 6,569,834 | 12,626,110 |
| Miscellaneous vehicle manufacturers. | 12 | 601 | 2,187,469 | 4,221,428 | 4,860,083 | 8,895,424 |
| Electrical Products | 531 | 79,531 | 353,568,079 | 585,351,554 | 617,534,041 | 1,205,534,321 |
| Small electrical appliances, manufacturers of | 58 | 3,727 | 14,897,435 | 31,201,286 | 33,275,218 | 64,864,043 |
| Major appliances (electric and non-electric), manufacturers of | 43 | 11,084 | 46,861,875 | 109, 910, 325 | 92,496, 459 | 206,212,477 |
| Household radio and television receivers, manufacturers of | 23 | 6,264 | 27,148,260 | 71,894,285 | 44,322,797 | 118,553,445 |
| Communications equipment manufacturers.. | 125 | 24,567 | 109,658,552 | 93,749,901 | 163,288,472 | 251,084,190 |
| Electrical industrial equipment, manufacturers of. | ${ }^{47}$ | 16,404 | 80,945,438 | 86, 811,512 | 129,314,600 | $\begin{gathered} 218,881,168 \\ 40,848 \\ \hline 638 \end{gathered}$ |
| Battery manufacturers | 27 | 2,019 | 9,051,836 | 20,385,132 | 19,147,198 | 40,048,638 |
| Electric wire and cable, manufacturers of. | 25 | 6,348 | 30,466,985 | 103,353,297 | 62,185,216 | 162,601,505 |
| Miscellaneous electrical products, manufacturers of | 133 | 9,118 | 34,537,698 | 68,045,816 | 73,504,081 | 143,288,855 |

[^189]8.-Principal Statistics of Individual Manufacturing Industries, 1961-continued

| Group and Industry | Estab-lishments | $\underset{\text { ployees }}{\text { Em- }}$ | Salaries and <br> Wages | Cost at Plant of Materials Used | Value Added by Manufacture | Selling Value of Factory Shipments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | \$ | \$ | \$ | \$ |
| Non-metallic Mineral Products. | 1,292 | 40,128 | 174,087,186 | 250,116,408 | 381,393, 965 | 675,012,816 |
| Cement manufacturers | 20 | 3,113 | 16,697,185 | 14,358, 880 | 76,422,986 | 107,246,086 |
| Lime manufacturers. | 21 | 825 | 3,569,549 | 1,784,960 | 8,954, 831 | 12,989,077 |
| Gypsum products manufacture | 14 | 1,600 | 7,186,288 | 14,318, 154 | 18,712,604 | 34,343,004 |
| Concrete products manufacturers Ready-mix concrete manufactur- | 616 | 8,339 | 31,459,954 | 44,445,312 | 65,266,932 | 111,871,135 |
| ers. | 157 | 4,071 | 19,334, 319 | 66,200,775 | 35,779,286 | 105,340,562 |
| Clay Products ManufacturersClay products (from domestic clays). | 98 | 3,547 | 13,537,964 | 4,733,718 | 24,182,091 | 35,169,009 |
| Clay products (from imported clays) | 28 | 1,628 | 6,778, 260 | 5,662,132 | 12,925, 011 | 19, 362, 713 |
| Refractories manufacturers...... | 16 | , 670 | 3,008,541 | 8,752,337 | 8,785,440 | 17, 884,741 |
| Stone products manufacturers | 134 9 | 1,095 | $3,929,096$ $4,877,058$ | $4,404,317$ $5,782,258$ | $6,924,410$ $9,459,267$ | $11,557,346$ $16,117,789$ |
| Asbestos products manufacturers | 15 | 2,101 | 10,135,775 | 13, 850,375 | 20,853, 977 | 35,735,016 |
| Glass manufacturers. | 12 | 6,714 | 28,215,533 | 21,098,981 | 44,338,779 | 68,110,652 |
| Glass products manufacture | 97 | 2,660 | 11,325, 230 | 22,401, 885 | 22,082, 121 | 45, 043,541 |
| Abrasives manufacturers.. | 20 | 2,315 | 11,799,317 | 16,642,693 | 21,479,927 | 42,942,366 |
| Other non-metallic mineral products. | 35 | 479 | 2,233,117 | 5,679,631 | 5,226,303 | 11,299,779 |
| Petroleum and Coal P | 91 | 14,053 | 85,339,864 | 920,630,338 | 290,698,500 | 1,220,193,764 |
| Petroleum Refineries- | 44 | 13,235 | 81,516,036 | 899,836,714 | 276,271,921 | 1,184,176,374 |
| Lubricating oils and greases, manufacturers of | 13 | 276 | 1,323,965 | 11,807,241 | 5,519,514 | 17,452,028 |
| Other petroleum and coal products. | 34 | 542 | 2,499,863 | 8,986,383 | 8,907,065 | 18,565,362 |
| Chemicals and Chemical Products. | 1,072 | 52,167 | 254,004,293 | 623,943,855 | 760,927,799 | 1,433,878,158 |
| Explosives and ammunition manufacturers. | 14 | 4,660 | 22,293,149 | 25,586,162 | 31,863,783 | 63,353,335 |
| Mixed fertilizers, manufacturers of. | 43 | 1,378 | 6,602,443 | 39,647,614 | 14,426,263 | 54,261,404 |
| Plastics and synthetic resins, manufacturers of. | 31 | 3,325 | 18,506,962 | 60,258,949 | 47,103,780 | 110,345,093 |
| Pharmaceuticals and medicines, manufacturers of | 175 | 7,602 | 31,744,258 | 49,784,714 | 117,204,902 | 166,015,641 |
| Paint and varnish manufacturers | 136 | 5,802 | 25, 848, 379 | 75,065,600 | 76,955,820 | 152, 357, 549 |
| Soap and cleaning compounds, manufacturers of | 126 | 4,145 | 21,859,028 | 82,893,226 | 86,698,652 | 172,334,470 |
| Toilet preparations, manufacturers of | 73 | 2,646 | 9,613,301 | 22,949,180 | 45,555,113 | 68,814,340 |
| Industrial chemicals, manufacturers of | 128 | 16,191 | 89,364,320 | 182,032,101 | 257,622, 238 | 476,603,231 |
| Printing inks, manufacturers of. . | 32 | 971 | 4,622,088 | 8,362,203 | 10,607,225 | 19,074,459 |
| Other chemical industries, n.e.s. | 314 | 5,447 | 23,550, 365 | 77,364,106 | 72,890,023 | 150,718,636 |
| Miscellaneous Manufacturing Industries. | 1,928 | 46,375 | 171,877,519 | 263,868,974 | 309,523,448 | 574,812,594 |
| Scientific and Professional Equipment Manufacturers Instrument and related products. | 1,028 93 | 8,047 | 37,624,015 | 59,703,525 | 63,860,7 | 123,467,602 |
| Clock and watch manufacturers. | 27 | 1,036 | 3,892,507 | 7,980,252 | 8,243,101 | 16,422,305 |
| Orthopaedic and surgical appli ance manufacturers. | 37 | 1,030 330 | 1,127,417 | $7,080,252$ 938,874 | 1,963,492 | 2,878,044 |
| Ophthalmic goods manufac turers. | 47 | 962 | 3,171,741 | 3,184,728 | 4,110,465 | 7,560,456 |
| Jewellery and silverware manufacturers | 225 | 4,469 | 15,840,472 | 29,646,657 | 25,987,264 | 55,676,781 |
| Broom, brush and mop industry | 96 | 2,118 | 6,591,273 | 10, 200,243 | 12,809,244 | 22,575,747 |
| Venetian blind manufacturers... | 69 | 350 | 1,034,161 | 2,142,533 | 2,018,770 | 4,204,928 |
| Plastic fabricators, n.e.s. | 278 | 7,552 | 26,132,658 | 58,119,620 | 50,110,240 | 109,179,817 |
| Sporting goods industry | 107 | 3,440 | 12,736,877 | 19,640,754 | 24,393, 535 | 43,280,687 |
| Toys and games industry....... | 73 15 | 2,831 | 7,467,934 | 14, 820,448 | 14,397, 393 | 29,614,301 |
| Fur dressing and dyeing industry Signs and displays industry.... | 15 367 | 972 3,847 | $3,743,378$ $16,085,454$ | $1,265,565$ $13,989,388$ | 5,448, 26,145, | $6,833,867$ $40,161,756$ |

8.-Principal Statistics of Individual Manufacturing Industries, 1961-concluded

| Group and Industry | Estab-lishments | Employees | Salaries and Wages | Cost at Plant of Materials Used | Value <br> Added by Manufacture | Selling Value of Factory Shipments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | \$ | \$ | \$ | \$ |
| Miscellaneous Manufacturing Industries-concluded |  |  |  |  |  |  |
| Button, buckle and fastener industry | 40 | 1,559 | 4,830,623 | 5,985,160 |  |  |
| Candle manufacturers. | 16 | 239 | -833, 329 | 1,247,172 | 1,840,998 | $14,158,425$ $3,089,315$ |
| Hair goods manufacturers....... Artificial flowers and feathers | 11 | 68 | 168,109 | 269,483 | 1,213,669 | - ${ }^{485}, 477$ |
| manufacturers................ | 22 | 395 | 961,349 | 974,419 | 1,703,644 | 2,628,200 |
| Model and pattern manufacturers | 86 | 992 | 4,503,500 | 2,229,558 | 7,654,808 | 9,804,880 |
| Musical instruments and sound recording industry. | 30 | 1,591 | 6,027,819 | 6,365,694 | 15,002,671 | 21,428,010 |
| Typewriter supplies manufacturers. | 10 | 438 | 1, ¢40,369 | 3,870,689 | 3,035,094 | 6,953,200 |
| Fountain pen and pencil manufacturers. | 18 | 1,082 | 3,730,200 | 6,445,089 | 8,349,738 | 15,051,086 |
| Smokers' supplies manufacturers | 10 | 143 | 514,481 | 1,105,408 | 1,188,046 | 2, 322,476 |
| Stamp and stencil (rubber and metal) manufacturers. | 70 | 859 | 3,396,931 | 1,851,842 | 4,602,233 | 6,536,292 |
| Statuary, art goods, regalia and 'novelty manufacturers. | 87 | 768 | 2,196,903 | 2,005,813 | 3,429,538 | 5,442,599 |
| Umbrella manufacturers.......... | 8 | 127 | 367,055 | 659, 263 | 603,705 | 1,307,754 |
| Artificial ice manufacturers. | 30 | 217 | 721,146 | 191,833 | 1,292,049 | 1,725,721 |
| Other miscellaneous industries.. | 46 | 1,943 | 6,537,818 | 9,034,964 | 13,030,033 | 22,022,868 |
| Totals, All Industries. | 32,415 | 1,265,032 | 5,231,446,969 | 13,127,707,976 | 10,682,137,680 | 24,243,294,949 |

The forty leading industries of Canada in 1961, ranked according to selling value of factory shipments, are listed in Table 9; other principal statistics for these industries are given in Table 8 under their respective group headings.

## 9.-The Forty Leading Manufacturing Industries, ranked according to Selling Value of Factory Shipments, 1961

Nore.-Based on revised Standard Industrial Classification (see p. 651) and new establishment concept (see third paragraph p. 645).

|  | Industry | Selling ${ }^{\circ}$ Value of Factory Shipments |  | Industry | Selling Value of Factory Shipments |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | \$ |  |  | \$ |
|  | 1 Pulp and paper mills. | 1,634,606,001 |  | Communications equipment manufac- |  |
|  | Smelting and refining | 1,471,048,021 ${ }^{1}$ |  |  | 251, 084, 190 |
|  | Petroleum refining | 1,184,176,374 | 24 | Synthetic textile mills | 248,717,577 |
|  | Slaughtering and meat packing plants.. | 1,080, 913,148 |  | Cotton yarn and cloth mills | 236,711,105 |
|  | Motor vehicle manufacturers. | 870,942,359 | 26 | Sash and door and planing mills (excl. |  |
|  | Iron and steel mills. | 789,271,070 |  | hardwood flooring)................... | 235, 160, 488 |
|  | Sawmills (excl. shingle mills) | 534,590,574 | 27 | Printing and bookbinding | 230, 144,643 |
|  | 8 Manufacturers of industrial chemicals.. | 476,603,231 | 28 | Tobacco products manufacturers | 229,956, 447 |
|  | Pasteurizing plants. | 411,616,839 | 29 | Wire and wire products manufacturers. | 220, 701,880 |
|  | Miscellaneous food manufacturers | 408,178,870 | 30 | Flour mills. | 220,586,667 |
|  | Miscellaneous machinery and equipment manufacturers | 390,689,239 | 31 | Miscellaneous metal fabricating industries. | 218,977,448 |
| 12 | Metal stamping, pressing and coating industry. | 374, 352, 563 | 32 | Manufacturers of electrical industrial equipment. | $218,881,168$ |
| 13 | Printing and publishing | 370, 327,715 | 34 | Fabricated structural metal industry.. |  |
| 14 | Bakeries | 369,637,256 | 34 | Manufacturers of major appliances (elec- | 206,212,477 |
| 15 | Motor vehicle parts and accessories manufacturers | 352,778,908 | 35 | Household furniture indus | 205,596,993 |
| 16 | Aircraft and parts manufacturers | $348,245,1731$ | 36 | Other paper converters. | 185, 889,705 |
| 17 | Fruit and vegetable canners and pre- |  | 37 | Railway rolling-stock industry | 182,569,012 ${ }^{1}$ |
|  | servers. | 328,098,257 | 38 | Rubber tire and tube manufacturers. | 180, 248, 120 |
| 18 | Butter and cheese plants | 323, 899,706 | 39 | Shoe factories. | 173,123,858 |
| 19 | Feed manufacturers | 289,660,606 | 40 | Soft drink manufacturer | 172,647,090 |
| 21 | Wemen's clothing fa | 277, ${ }^{2777,796}$ |  | Totals, Leading Industries, 1961 | 16,652,910,830 |
| 22 | Breweries. | 259,438,200 |  | Totals, All Industries, 1961 | 24,243,294,949 |

[^190]
## 10.-Quantity and Value of the Principal Commodities Produced or Shipped by the Manufacturing Industries, 1960

Note.-Based on revised Standard Industrial Classification. All values in this table are for factory shipments except those marked with an asterisk, which are for gross value of products.

| Representative Group and Commodity | UnitofMeasure | 1960 |  |
| :---: | :---: | :---: | :---: |
|  |  | Quantity | Value |
| Foods- |  |  | \$ |
| Biscuits, all kinds. | 1 l. | 259,203,977 | 77,653,030 |
| Bread. | ton | 825,759 | 215, 250,379 |
| Butter, factory made | li. | 321,123,745 | 204,046,906 |
| Cheese, factory made | " | $196,200,030$ $11,360,491$ | 69, 837,962 |
| Coffee and tea, blended, roasted and packed | " | 130,542,271 | 105,984,396 |
| Confectionery, all kinds................. | " | 226,449,716 | 96, 827,171 |
| Cream, sold by dairy factories |  |  | 51, 270,710 |
| Feed, chopped grain. | ton | 546,728 | 26, 106,496 |
| Feeds, stock and poultry, prepared. |  | 3,000,635 | 232,536,075 |
| Fish, canned and otherwise prepare | cwt. | 40-896,639 | $66,685,000$ $176,581,378$ |
| Fruits and vegetables, canned | lb. | 671,922,003 | $176,581,378$ $92,090,166$ |
| Fruits and vegetables, frozen. |  | 104,236,661 | 18, 102,296 |
| Ice cream, factory made. | gal. | 39, 557,325 | 64,561,189 |
| Jams, jellies and marmalades | lb. | 117,283,272 | 24, 899, 260 |
| Lard............................ | " | 120,387,467 | 15,788, 489 |
| Meats, canned, incl. poultry, pastes, et | " | $\begin{array}{r}167,220,261 \\ 94,207 \\ \hline\end{array}$ | 35, 063,304 |
| Meats, cooked, incl. sausage, wieners. | " | 323,531,288 | 134, ${ }^{4323} \mathbf{,} 732$ |
| Meats, cured and smoked | " | 282, 827,940 | 139,343,557 |
| Meats, sold fresh and frozen, incl. poult | " | 2,025,646,478 | 746,243,095 |
| Milk, sold by dairy factories... | gal. | -374, 859,310 | 302,514,688 |
| Milk, evaporated and condensed | lb. | 339,337,594 | 45,515, 811 |
| Pickles, relishes and catsup. | ... | ... | 35,015,799 |
| Pies, cakes and pastry | $\ldots$ | ... | 96, 953,107 |
| Powders, edi | lb. | 177,097,297 | $68,294,285$ $37,689,024$ |
| Soups, canned (except infants'). |  | 269,293,647 | 52,003,642 |
| Sugar, granulated (cane and beet) | " | 1,434,863,160 | 104,526,736 |
| Beverages- |  |  |  |
| Beer, ale, stout and porter (sales) | gal. | 238,731,690 | 399, 225,643 |
| Beverage spirits sold (net sales) |  | 16,501,382 | 136,472, 392 |
| Carbonated beverages | gal. | 157, 108, 330 | 143,928,755 |
| Wine sold. |  | 6,767,923 | 17,291,202 |
| Tobacco and Tobacco Products- |  |  |  |
| Cigarettes. | '000 | 34,698,794 | 509,689, 068 |
| Cigars.. |  | 328,688 | 22,661,734 |
| Tobacco, chewing, smoking and snuf | lb. | 23,932,397 | 64,108,138 |
| Tertile Products, except Clothing- |  |  |  |
| Bags, cotton and jute....... | doz. | 9,970,387 | 22,584,141 |
| Blankets............ | $\cdots$ |  | 12,282,406 |
| Carpets, mats and rugs | ... | ... | 31, 432, 893 |
| Synthetic woven fab | $\ldots$ | ... | 111,132,022 |
| Tire fabrics......... | ï. | 22,094,762 | 73,080, 138 |
| Twine and cordage. | 1 b . | 22,994,762 | 20,723,593 |
| Woven fabrics, wool or containing wool... Yarns, cotton, rayon, wool, etc. (for sale) | ... | $\ldots$ | 15,015,016 |
| Yarns, cotton, rayon, wool, etc. (for sale) | ... | $\ldots$ | 156,813,786 |
| Clothing - |  |  |  |
| Coats and overcoats, cloth, men's and youths'. | No. | 500,520 | 14,164,788 |
| Coats, wool, women's and misses' |  | 1,409,881 | 36,872,717 |
| Coats, fur, women's (factory made), incl. jackets, b Short coats (incl. windbreakers, mackinaws, pa | " | 1,211,320 | 47,393,247 |
|  | doz. | 535,873 | 39,253,293 |
| Footwear, leather | No. | 12,379,357 | 92,011,682 |
| Footwear, rubber.... | pr. | 38,327,754 | 151, 812,644 |
| Gloves and mittens, all kinds |  | 9,943,960 | 25, 195, 817 |
| Hats and caps, men's......... | doz. | 660,113 | 11,506,031 |
| Hats, women's and children's |  | 432, 895 | 14,061,668 |
| Shirts, fine, work and | doz. pr. | 13,584,593 | 68, 214,353 |
| Sport suits, slacks and other sport clothing, $n$ |  | 2,626,921 | 58,548, 273 |
| Suits, men's and youths' fine woollen. | No. | $1,339,381$ | $32,575,003$ $50,872,626$ |
| Underwear. |  | 1,330,381 | 54,483,711 |

## 10.-Quantity and Value of the Principal Commodities Produced or Shipped by the Manufacturing Industries, 1960-continued



## 10.-Quantity and Value of the Principal Commodities Produced or Shipped by the Manufacturing Industries, 1960-concluded

| Representative Group and Commodity | UnitofMeasure | 1960 |  |
| :---: | :---: | :---: | :---: |
|  |  | Quantity | Value |
|  |  |  | \$ |
| Chemicals and Allied Products- |  |  |  |
| Calcium and sodium compounds. | $\ldots$ | $\cdots$ | 62, 197,917 |
| Fertilizers, mixed............... | ... | $\ldots$ | 42,763,452 |
| Medicinal and pharmaceutical preparations | ... | $\ldots$ | 159,390,000 |
| Synthetic resins............ | lb. | 315,612,029 | 86,037,318 |
| Soaps and synthetic detergents |  | 340,384,000 | 97,910,000 |
| Toilet preparations.............. | ... | ... | 79,487, 570 |
| Miscellaneous- |  |  |  |
| Bags, hand and hand luggage.. |  |  | 16,471,239 |
| Brooms and household brushes | doz. | 584,038 | 5,085,516 |
| Cans, metal, for food....... | ... | ... | 74,433,534 |
| Garnitine, wood............. | bïl. | 102,662, 026 | 179, $531,607,344^{*}$ |
| Boots and shoes with leather or fabric uppers (exce | pr. | 36,549,798 | 144,311,122 |
| Mattresses.... |  |  | 24,501,728 |
| Mops, floor. | doz. | 376,423 | 3,704,885 |
| Oil, fuel (made for sale). | bbl. | 119,741,510 | 416,744,146* |
| Pianos, organs and parts. | ... |  | 6,607,352 |
| Scientific and professional equipment. | ... | ... | 88,786,398 |
| Sporting goods. | ... | ... | 36, 869, 461 |
| Springs, bed and other furniture | ... | ... | 15,472,570 |
| Toys and games. | ... | $\cdots$ | 33, 055, 937 |

## Subsection 2.-Manufactures classified by Origin of Materials

The distinction made between farm materials of Canadian and foreign origin is based on whether the materials are indigenous to Canada rather than on their actual source. Thus, the industries included in the foreign origin classes are those depending upon materials that cannot be grown in Canada, such as tea, coffee, spices, cane sugar, rice, rubber, cotton, etc. Industries included in the Canadian origin classes may, however, be using large quantities of imported materials. Figures for 1960 were the latest available for this classification at the time of going to press.

## 11.-Principal Statistics of Manufacturing Industries classified according to Origin of Materials Used, by Main Group, 1960

| Origin of Materials Used | Estab-lishments | $\underset{\text { ployees }}{\text { Em- }}$ | Salaries and Wages | Cost at Plant of Materials Used | Value <br> Added by Manufacture | Selling Value of Factory Shipments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | \$ | \$ | \$ | \$ |
| Farm origin. | 9,878 | 314,238 | 1,073,736,685 | 3,912,073,321 | 2,381,692,269 | 6,346,630,104 |
| Mineral origin | 7,596 | 525,526 | 2,447,984, 283 | 5,836, 153, 285 | 4,904,327,606 | 11,040,376,612 |
| Forest origin. | 13,472 | 281,354 | 1,155, 127, 817 | 2,010, 190,858 | 2,222,320,904 | 4,367,567,910 |
| Marine orig | 402 | 13,357 | 29,717,560 | 103, 863,226 | - 53,004,983 | 169,529,913 |
| Mixed origin. | $\begin{array}{r}508 \\ 4,826 \\ \hline\end{array}$ | 5,108 152,046 | $18,487,377$ $482,113,671$ | $37,739,105$ $805,051,045$ | $30,124,268$ $941,738,964$ | $\begin{array}{r} 67,790,259 \\ 1,755,562,285 \end{array}$ |
| Grand Totals. | 36,682 | 1,294,629 | 5,207,167,393 | 12,705,070,820 | 10,533,208,994 | 23,747,457,083 |
| Farm Origin Group- |  |  |  |  |  |  |
| From field crops. | 6,124 | 173,552 | 615,867,227 | 1,987,652,199 | 1,607,948,456 | 3,624,138,419 |
| From animal husbandry | 3,754 | 140,686 | 457, 869,458 | 1,924,421, 122 | 773,743, 813 | 2,722,491,685 |
| Totals, Farm Origin | 9,878 | 314,238 | 1,073,736,685 | 3,912,073,321 | 2,381,692,269 | 6,346,630,104 |
| Canadian origin. Foreign | $\begin{array}{r} 8,965 \\ 913 \end{array}$ | $\begin{array}{r} 258,758 \\ 55,480 \end{array}$ | $\begin{aligned} & 870,052,344 \\ & 203,684,341 \end{aligned}$ | $\begin{array}{r} 3,437,852,097 \\ 474,221,224 \end{array}$ | $\begin{array}{r} 1,929,868,553 \\ 451,823,716 \end{array}$ | $\begin{array}{r} 5,417,305,297 \\ 929,324,807 \end{array}$ |

## Subsection 3.-Manufactures classified by Type of Ownership

Figures showing the classification of the type of ownership under which Canadian manufacturers operate are available from 1946. Although the first survey did not include the fish curing and packing industry, its inclusion in subsequent years has not materially altered the percentage distribution of individual ownership, incorporated companies, etc.

As is to be expected, the smaller establishments, regardless of the type of products manufactured, are carried on mainly under individual ownership or partnerships. Industries conducted on a small scale usually contain a large number of establishments in these categories, the percentage decreasing as the scale of operation increases, as shown for 1960 in Table 12.
12.-Percentage Distribution of Manufacturing Establishments, Employees and Shipments, by Type of Ownership and Size of Establishment, 1960

| Item and Type of Ownership | Under $\$ 25,000$ | $\begin{gathered} \$ 25,000 \text { to } \\ \$ 99,999 \end{gathered}$ | $\begin{gathered} \$ 100,000 \text { to } \\ \$ 499,999 \end{gathered}$ | 8500,000 and Over |
| :---: | :---: | :---: | :---: | :---: |
|  | p.c. | p.c. | p.c. | p.c. |
| Establishments- |  |  |  |  |
| Individual ownership. | 73.4 | 43.0 | 10.4 | 0.7 |
| Partnerships.. | 13.8 | 15.3 | 6.5 | 0.9 |
| Incorporated companies | 12.2 | 39.4 | 78.1 | 96.0 |
| Co-operatives. | 0.6 | 2.3 | 5.0 | 2.4 |
| Totals. | 100.0 | 100.0 | 100.0 | 100.0 |
| Employees- |  |  |  |  |
| Individual ownership. | 66.7 | 37.3 | 6.2 | 0.2 |
| Partnerships........... | 15.9 16.7 | 15.1 46.4 | 5.4 8.4 | 0.3 98.7 |
| Co-operatives.......... | 0.7 | 1.2 | 2.0 | 0.8 |
| Totals. | 100.0 | 100.0 | 100.0 | 100.0 |
| Factory Shipments- |  |  |  |  |
| Individual ownership. | 68.7 14.7 | 38.9 14.9 | 7.5 | 0.2 |
| Incorporated companies. | 15.8 | 43.5 | 82.4 | 98.3 |
| Co-operatives........... | 0.8 | 2.7 | 4.8 | 1.2 |
| Totals | 100.0 | 100.0 | 100.0 | 100.0 |

Of the 36,682 establishments operating in 1960, individual ownership numbered 13,840 establishments, partnerships 3,793, incorporated companies 18,148 , and co-operatives 901 . The percentage distribution of the four categories of ownership is given in Table 13 for the years 1951-60 and by province and industrial group for 1960. It is interesting to note that incorporated companies are becoming increasingly important, the percentage of the total number of establishments rising from 36.9 in 1951 to 49.5 in 1960.

## 13.-Percentage Distribution of Manufacturing Establishments classified by Type of

 Ownership, 1951-60, and by Province and Industrial Group, 1960| Year | Individual Ownership | Partnerships | Incorporated Companies | Co-operatives | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | p.c. | p.c. | p.c. | p.c. | p.c. |
| 1951. | 44.6 | 15.5 | 36.9 | 3.0 | 100.0 |
| 1952. | 44.9 | 15.4 | 36.9 | 2.8 | 100.0 |
| 1953. | 44.4 | 14.8 | 38.2 | 2.6 |  |
| 1954. | 43.6 42.7 | 14.3 13.6 | 39.5 41.1 | ${ }_{2}^{2.6}$ | 100.0 100.0 |
| 1956. | 41.4 | 12.7 | 43.4 | 2.5 | 100.0 |
| 1957. | 40.6 | 12.0 | 44.9 | 2.5 | 100.0 |
| 1958. | 39.2 | 11.1 | 47.1 | 2.6 | 100.0 |
| 1959. | 38.4 | 10.8 | 48.2 | 2.6 | 100.0 |
| 1960. | 37.7 | 10.3 | 49.5 | 2.5 | 100.0 |

13.-Percentage Distribution of Manufacturing Establishments classified by Type of Ownership, 1951-60, and by Province and Industrial Group, 1960-concluded

| Year, Province or Territory and Group | Individual Ownership | Partnerships | Incorporated Companies | Co-operatives | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | p.c. | p.c. | p.c. | p.c. | p.c. |
| Newfoundland. | 49.0 | 26.0 | 25.0 | - | 100.0 |
| Prince Edward Island | 49.5 | 15.2 | 29.3 | 6.0 | 100.0 |
| Nova Scotia. | 49.0 | 11.6 | 37.2 | 2.2 | 100.0 |
| New Brunswick. | 49.1 | 9.3 | 39.7 | 1.9 | 100.0 |
| Quebec. | 43.0 | 8.5 | 44.6 | 3.9 | 100.0 |
| Ontario... | 32.0 | 10.5 | 56.1 49.4 | 1.4 | 100.0 |
| Saskatchewan | 46.1 | 12.0 | 35.6 | 6.3 | 100.0 |
| Alberta. | 35.6 | 11.9 | 49.2 | 3.3 | 100.0 |
| British Columbia | 31.8 | 11.1 | 56.1 | 1.0 | 100.0 |
| Yukon and Northwest Territories. | 35.7 | - | 64.3 | - | 100.0 |
| Industrial Group, 1960 |  |  |  |  |  |
| Foods and beverages. | 41.0 | 9.9 | 38.9 | 10.2 | 100.0 |
| Tobacco products... | 17.5 | , | 75.0 | 7.5 | 100.0 |
| Rubber.. | 9.8 | 1 | 90.2 | - | 100.0 |
| Leather. | 23.4 | 7.2 | 69.4 | - | 100.0 |
| Textiles.... | 25.9 | 9.7 | 64.4 | 2 | 100.0 |
| Knitting mills. | 13.8 | 7.7 | 78.5 | 2 | 100.0 |
| Clothing. | 23.7 | 12.4 | 63.9 | - | 100.0 |
| Wood.. | 58.5 | 14.2 | 27.2 | 0.1 | 100.0 |
| Furniture and fixtures..... | 53.1 | 12.2 | 34.7 | - | 100.0 |
| Paper and allied industries. | 6.2 | 2.2 | 91.6 |  | 100.0 |
| Printing, publishing and allied industries... | 36.8 | 10.7 | 52.2 | 0.3 | 100.0 |
| Primary metal......................... | 12.2 | 7.4 | 80.4 |  | 100.0 |
| portation equipment)............. | 24.8 | 9.3 | 65.9 | - | 100.0 |
| Machinery (except electrical)....... | 7.3 | 3.8 | 88.9 | 2 | 100.0 |
| Transportation equipment. | 23.4 | 8.6 | 68.0 | - | 100.0 |
| Electrical products............ | 5.1 | 2.2 | 92.7 | $\bar{\square}$ | 100.0 |
| Non-metallic mineral products. Petroleum and coal products... | 28.0 4.2 | 8.8 | 63.2 95.8 | 1 | 100.0 100.0 |
| Chemicals and chemical produ | 12.1 | 2.7 | 84.9 | 0.3 | 100.0 |
| Miscellaneous manufacturing industries | 41.5 | 10.0 | 48.5 | - | 100.0 |

${ }^{1}$ Included with individual ownership. $\quad{ }^{2}$ Included with incorporated companies.
The establishments operating under individual ownership are not as important from the point of view of employment provided as their large numbers would indicate. According to Tables 14 and 15, these establishments, which comprise 37.7 p.c. of the total number, had only 4.1 p.c. of the total employees. Partnerships accounted for 10.3 p.c. of the number of establishments and 2.0 p.c. of the total employees. Incorporated companies with 49.5 p.c. of the number of establishments had 92.9 p.c. of the employees. Co-operatives with 2.5 p.c. of the number had 1 p.c. of the employees.

Thus on the basis of employment provided, incorporated companies are, by a wide margin, the most important factor in the employment field. Such companies had more than 99 p.c. of the employees in the rubber, paper, primary metal, transportation equipment and electrical products groups; over 98 p.c. of the employees in the tobacco products, machinery, and chemicals and chemical products groups; over 97 p.c. in the petroleum and coal products group; 96 p.c. in the textiles and knitting mills groups; and 95 p.c. in the metal fabricating group. The lowest proportion was 80.7 p.c. in the wood group.
14.-Percentage Distribution of Employment in the Manufacturing Industries classified by Type of Ownership, 1951-60, and by Province and Industrial Group, 1960

| Year, Province or Territory and Group | Individual Ownership | Partnerships | Incorporated Companies | Co-operatives | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | p.c. | p.c. | p.c. | p.c. | p.c. |
| 1951. | 6.1 | 3.7 | 89.3 | 0.9 | 100.0 |
| 1952. | 5.9 | 3.6 | 89.6 | 0.9 | 100.0 |
| 1953 | 5.7 | 3.3 | 90.2 | 0.8 | 100.0 |
| 1955. | 5.2 | 3.9 | 90.5 91.0 | 0.8 0.9 | 100.0 |
| 1956. | 4.8 | 2.6 | 91.8 | 0.8 | 100.0 |
| 1957. | 4.5 | 2.4 | 92.2 | 0.9 | 100.0 |
| 1958. | 4.4 | ${ }_{2} .3$ | 92.4 | 0.9 | 100.0 |
| 1959. | 4.3 | 2.2 | 92.6 | 0.9 | 100.0 |
| 1960. | 4.1 | 2.0 | 92.9 | 1.0 | 100.0 |
| Province, 1960 |  |  |  |  |  |
| Newfoundland. | 2.8 | 1.8 | 95.4 | - | 100.0 |
| Prince Edward Island | 13.1 | 6.0 | 72.9 | 8.0 | 100.0 |
| Nova Scotia... | 7.8 | 2.2 | 87.9 | 2.1 | 100.0 |
| New Brunswick | 6.8 | 2.5 | 89.2 | 1.5 | 100.0 |
| Quebec. | 5.3 | 2.3 | 91.4 | 1.0 | 100.0 |
| Ontario.. | 2.7 | 1.8 | 95.2 | 0.3 | 100.0 |
| Manitoba. | 4.3 | 2.3 | 91.9 | 1.5 | 100.0 |
| Saskatchewan | 8.0 | 3.9 | 75.5 | 12.6 | 100.0 |
| Alberta. | 5.5 | 2.5 | 89.5 | 2.5 | 100.0 |
| British Columbia.. | 4.1 | 2.2 | 91.8 | 1.9 | 100.0 |
| Yukon and Northwest Territories. | 12.9 | - | 87.1 | - | 100.0 |
| Industrial Group, 1960 |  |  |  |  |  |
| Foods and beverages. | 7.6 | 3.1 | 83.8 | 5.5 | 100.0 |
| Tobacco products. | 0.8 | 1 | 98.4 | 0.8 | 100.0 |
| Rubber............ | 0.2 | 2 | 99.8 | - | 100.0 |
| Leather.. | 3.9 2.1 | 2.0 | 94.1 | $\overline{2}$ | 100.0 100.0 |
| Textiles....... | 2.1 | 1.2 | 96.7 96.0 | 2 2 | 100.0 100.0 |
| Clothing...... | 5.8 | 6.2 | 88.0 | - | 100.0 |
| Wood.... | 14.2 | 4.8 | 80.7 | 0.3 | 100.0 |
| Furniture and fixtures. | 10.1 | 4.9 | 85.0 | - | 100.0 |
| Paper and allied industries. | 0.2 | 0.2 | 99.6 | - | 100.0 |
| Printing, publishing and allied industries. | 6.6 | 3.1 | 89.8 | 0.5 | 100.0 |
| Primary metal. <br> Metal fabricating (except machinery and tra | 0.3 3.0 | 0.2 2.0 | 99.5 95.0 | - | 100.0 100.0 |
| portation equipment)............... | 3.6 | 1.0 | 98.4 | 2 | 100.0 |
| Transportation equipment.... | 0.5 | 0.3 | 99.2 | - | 100.0 |
| Electrical products......... | 0.2 | 0.2 | 99.6 | - | 100.0 |
| Non-metallic mineral products. | 3.3 | 1.9 | 94.8 | 2 | 100.0 |
| Petroleum and coal products. | 2.6 | 1 | 97.4 | 0 | 100.0 |
| Chemicals and chemical products...... | 0.8 6.5 | 0.2 2.9 | 98.9 90.6 | 0.1 | 100.0 100.0 |

${ }^{1}$ Included with individual ownership.
${ }^{2}$ Included with incorporated companies.

## Section 3.-Principal Factors in Manufacturing Production

In addition to the factors dealt with in the following Subsections 1 and 2, one of the principal indicators of growth in manufacturing production is the amount paid as salaries and wages to various groups of employees within those industries. The latest information available on employment, earnings and hours worked in manufacturing industries at the time of going to press was that for 1960, summarized in the 1962 Year Book at pp. 722-727.

## Subsection 1.-Capital and Repair Expenditures

The current series of statistics covering expenditures on fixed capital and repairs by manufacturing industries commences with the year 1944. Capital expenditures by manufacturers in 1960 totalled $\$ 334,700,000$ for construction, a figure slightly lower than the $\$ 373,900,000$ so spent in 1959 ; the $\$ 842,700,000$ spent for machinery and equipment in 1960, however, was higher than the comparable expenditure in 1959, resulting in a total of $\$ 1,177,400,000$ as against $\$ 1,143,800,000$ in the previous year. Repair expenditure amounted to $\$ 671,600,000$ in 1960 and $\$ 662,500,000$ in 1959. Of the total capital expenditures in 1960, 16.5 p.c. was reported by primary metal industries, 14.1 p.c. by the paper and allied industries, 12.9 p.c. by foods and beverages and 9.1 p.c. by chemicals and chemical products.
15.-Capital and Repair Expenditures by the Manufacturing Industries, 1951-60, and by Province and Industrial Group, 1960

| Year, Province and Industrial Group | Capital Expenditure |  |  | Repair Expenditure |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Construction | Machinery and Equipment | Total | Construction | Machinery and Equipment | Total |
|  | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 |
| 1951. | 267.6 | 525.0 | 792.6 | 85.0 | 337.0 | 422.0 |
| 1952. | 343.6 | 629.0 | 972.6 | 95.2 | 363.5 | 458.7 |
| 1953. | 324.5 | 644.5 | 969.0 | 94.6 | 385.5 | 480.1 |
| 1954. | 287.6 | 534.5 | 822.1 | 97.6 | 390.9 | 488.5 |
| 1955. | 344.5 | 601.8 | 946.3 | 100.6 | 413.0 | 513.6 |
| 1956. | 487.7 | 906.1 | 1,393.8 | 112.2 | 465.6 | 577.8 |
| 1957. | 519.9 | 959.0 | 1,478.9 | 115.4 | 498.5 | 613.9 |
| 1958. | 397.6 | 697.4 | 1,095.0 | 109.8 | 462.1 | 571.9 |
| 1959 | 373.9 | 769.9 | 1,143.8 | 125.2 | 537.3 | 662.5 |
| 1960. | 334.7 | 842.7 | 1,177.4 | 124.4 | 547.2 | 671.6 |
| Province, 1960 |  |  |  |  |  |  |
| Newfoundland. | 4.4 | 7.6 | 12.0 | 1.1 | 6.5 | 7.6 |
| Prince Edward Island | 0.1 | 0.5 | 0.6 | 0.1 | 0.3 | 0.4 |
| Nova Scotia. | 9.1 | 17.9 | 27.0 | 4.0 | 13.3 | 17.3 |
| New Brunswick | 11.0 | 18.7 | 29.7 | 1.7 | 11.4 | 13.1 |
| Quebec. | 86.4 | 218.2 | 304.6 | 35.5 | 148.5 | 184.0 |
| Ontario.. | 146.6 | 408.2 | 554.8 | 56.6 | 284.2 | 340.8 |
| Manitoba..... | 15.6 | 34.2 | 49.8 | 4.5 | 10.0 | 14.5 |
| Saskatchewan | 5.8 | 7.0 | 12.8 | 2.8 | 2.5 | 5.3 |
| Alberta. | 21.2 | 41.9 | 63.1 | 7.2 | 14.0 | 21.2 |
| British Columbia | 34.5 | 88.5 | 123.0 | 10.9 | 56.5 | 67.4 |
| Industrial Group, 1960 |  |  |  |  |  |  |
| Foods and beverages. | 52.7 | 99.2 | 151.9 | 14.2 | 55.7 | 69.9 |
| Tobacco products................................. | 1.7 | 5.2 | 6.9 | 1.2 | 3.3 | 4.5 |
| Rubber....... | 6.9 | 17.0 | 23.9 | 1.0 | 8.1 | 9.1 |
| Leather.. | 1.3 | 2.6 | 3.9 | 0.4 | $\stackrel{2.2}{ }$ | 2.6 |
| Knitting milis. | ${ }_{0.8}$ | 2.0 | 5.8 | 3.4 | 1.7 | 2.1 |
| Clothing | 1.5 | 5.0 | 6.5 | 0.8 | 2.6 | 3.4 |
| Wood... | 12.6 | 28.6 | 41.2 | 5.5 | 28.9 | 34.4 |
| Furniture and fixtures | 3.0 | 4.6 | 7.6 | 0.9 | 2.3 | 3.2 |
| Paper and allied industries. | 35.1 | 131.2 | 166.3 | 9.2 | 93.9 | 103.1 |
| Printing, publishing and allied industries.......... | 7.4 | 21.7 | 29.1 | 2.3 | 6.8 | 9.1 |
| Primary metal............................... | 51.3 | 142.9 | 194.2 | 20.0 | 145.1 | 165.1 |
| Metal fabricating (except machinery and transportation equipment). | 12.2 | 34.5 | 46.7 | 5.2 | 25.4 | 30.6 |
| Machinery (except electrical). | 8.4 | 14.6 | 23.0 | 3.0 | 9.5 | 12.5 |
| Transportation equipment. | 16.5 | 31.9 | 48.4 | 10.2 | 31.1 | 41.3 |
| Non-metallic mineral products | 7.6 | 24.2 33 | 31.8 | 3.8 | 16.3 | 20.1 |
| Petroleum and coal products.. | 51.9 | 33.5 7.8 | 49.2 59.7 | 4.0 26.0 | 38.6 4.0 | 42.6 30.0 |
| Chemicals and chemical products. | 34.9 | 72.1 | 107.0 | 10.8 | 48.2 | 59.0 |
| Miscellaneous manufacturing industries.......... | 7.2 | 13.6 | 20.8 | 2.1 | 5.9 | 8.0 |
| Capital items charged to operating expenses...... | - | 126.4 | 126.4 | - | , | - |

## Subsection 2.-Size of Manufacturing Establishments

The size of a manufacturing establishment is generally measured either by the value of factory shipments or by the number of employees but each of these methods has its limitations. The former measure has to be adjusted for changes in the price level and, as between industries, it makes those in which the cost of raw materials is relatively high appear to operate on a larger scale. The latter takes no account of the differences in capital equipment at different times or in various industries and obviously the increased use of machinery may lead to an increase in production concurrently with a decrease in number of employees. Also, in measuring size on the basis of employment, industries with a high capital investment in machinery and equipment are underrated as compared with industries lacking such equipment and consequently employing a relatively larger labour force.

Size as Measured by Selling Value of Factory Shipments.-In 1946, after heavy wartime production had ceased and reconversion had barely begun, there were 1,442 manufacturing establishments, each with an output of $\$ 1,000,000$ or over. Their combined production was valued at $\$ 5,377,870,217$ and accounted for 66.9 p.c. of the total for all manufacturing plants. By 1949, the number of factories in that category had increased to 1,926 and the proportion of their production to the total was 74.4 p.c. As a result of the tremendous industrial expansion and the increase in prices of the 1950's, the number of plants with shipments valued at over $\$ 1,000,000$ increased to 3,498 in 1960 . These plants contributed 81.2 p.c. of the total output in that year.
16.-Manufacturing Establishments and Total and Average Production classified by Value of Product Group, 1949, 1955, 1959 and 1960

${ }^{1}$ In 1952 gross value of products was replaced by selling value of factory shipments. 2 Newfoundland included from 1955.

Size as Measured by Number of Employees.-In 1946, the 311 establishments employing 500 or more persons accounted for 32.3 p.c. of the total number of employees engaged in manufacturing. In 1960 there were 350 plants with more than 500 employees, 55 of them with over 1,500 . The 350 plants employed 31.5 p.c. of the total workers in all manufacturing establishments.
17.-Establishments and Employees in Manufactures classified by Number of Employees per Establishment, 1949, 1955, 1959 and 1960

| Employee Group | Establishments | Employees | Average per Establishment | Establishments | Employees | Average per Establishment |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1949 |  |  | $1955{ }^{1}$ |  |  |
|  | No. | No. | No. | No. | No. | No. |
| Under 5 employees. | 16,647 | 34,865 | 2.1 | 16,762 | 36,340 | 2.2 |
| 5 to 14 ". | 9,133 | 75,482 | 8.3 | 9,864 | 81,471 | 8.3 |
| 15 " 49 " | 5,967 | 159,012 | 26.7 | 6,340 | 169,575 | 26.7 |
| 50 " 99 " | 1,905 | 132,069 | 69.3 | 2,082 | 144,411 | 69.4 |
| 100 " 199" | 1,114 | 156,084 | 140.1 | 1,175 | 163, 091 | 138.8 |
| 200 " 499 " | 694 | 213,130 | 307.1 | 739 | 227,667 | 308.1 |
| 500 " 999 " |  |  |  | 243 | 167,720 | 690.2 |
| 1,000 " 1,499" | 332 | 391,455 | 1,179.1 | 76 | 91, 840 | 1,208.4 |
| Head offices ${ }^{2}$. | - | 9,110 | - | 61 | 15,933 | 3,285.5 |
| Not classifiable. | - |  | - | 840 | - | - |
| Totals and Averages. | 35,792 | 1,171,207 | 32.7 | 38,182 | 1,298,461 | 34.0 |
|  | 1959 |  |  | 1960 |  |  |
|  | No. | No. | No. | No. | No. | No. |
| Under 5 employees | $\begin{array}{r} 14,594 \\ 9,728 \end{array}$ | $\begin{aligned} & 31,710 \\ & 80,558 \end{aligned}$ | 2.2 | 14,469 | 32,235 | 2.2 |
|  |  |  | 8.3 | 9,866 | 81,890 | 8.3 |
| 15 " 49 " |  | 174,506 | 27.0 | 6,698 | 180,256 | 26.9 |
| 50 " 99 " | 2,250 | 156,127 | 69.4 | 2,319 | 161,365 | 69.6 |
| 100" 199" | 1,255 | 173,220 | 138.0 | 1,266 | 176,163 | 139.1 |
| 200 " 499" | 799 | 241,597 | 302.4 | 785 | 238,109 | 303.3 |
| 500 " 999 " | 252 | 172,659 | 685.2 | 238 | 165, 129 | 693.8 |
| 1,000" 1,499" | 72 | 89,438 | 1,242.2 | 57 | 77,922 | 1,244.2 |
| 1,500 or over.... | 52 | 167,454 | 3,220.3 | 55 | 171,670 | 3,121.3 |
| $\stackrel{\text { Head offices }}{ }+\ldots$ | - 725 | 16,687 | , | 929 | 16,890 | - |
| Totals and Averages | 36,193 | 1,303,956 | 36.0 | 36,682 | 1,291,629 | 35.3 |

[^191]18.-Manufacturing Establishments classified by Number of Employees and by Province, 1960

| Province or Territory | Employees- |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { Up } \\ \text { to } \\ 499 \end{gathered}$ | $\begin{aligned} & 500 \\ & \text { to } \\ & 799 \end{aligned}$ | $\begin{gathered} 800 \\ \text { to } \\ 999 \end{gathered}$ | $\begin{aligned} & 1,000 \\ & \text { to } \\ & 1,499 \end{aligned}$ | $\begin{aligned} & 1,500 \\ & \text { or } \\ & \text { Over } \end{aligned}$ | Total |
|  | No. | No. | No. | No. | No. | No. |
| Newfoundland. | 633 | - | - | 1 | 1 | 635 |
| Prince Edward Island. | 184 | - | - | - | - | 184 |
| Nova Scotia.... | 1,272 | 2 | 2 | 1 | 1 | 1,278 |
| New Brunswick | 11894 | 3 | 2 | 2 |  | 901 |
| Quebec... | 11,833 | 66 | 21 | 22 | 19 | 11,961 |
| Manitoba | 11,226 1,583 | 82 | 24 | 25 | 30 | 13,387 |
| Saskatchewan. | 1,887 | - 5 | - 1 | 2 | 1 | 1,592 |
| Alberta. | 1,837 | - 10 | 1 | - |  | 1,848 |
| British Columbia | 3,969 | 14 | 5 | - 4 | 3 | 1,848 3,995 |
| Yukon and Northwest Territories. | 14 | - | 5 | - | 3 | ${ }^{14}$ |
| Canada. | 36,332 | 182 | 56 | 57 | 55 | 36,682 |

Table 19 summarizes the degree of concentration in some of the leading manufacturing industries of Canada. Concentration is extremely marked in the motor vehicle, smelting and refining, pulp and paper mills, iron and steel mills, and aircraft and parts industries. On the other hand, the degree of concentration is low in such industries as women's clothing factories, printing and publishing, sawmills, miscellaneous foods, pasteurizing plants, bakeries, men's clothing factories, fruit and vegetable canners and preservers.

## 19.-Percentage Importance of Establishments, each Employing $\mathbf{2 0 0}$ or more Persons, in the 25 Leading Industries, 1960

|  | Industry | Number of Establishments Employing Persons | Percentage Establishments Industry | $\begin{gathered} \text { Percentage } \\ \text { of } \\ \text { Total } \\ \text { Shipments } \\ \text { in the } \\ \text { Industry } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Pulp and paper mills. | 81 | 63.3 | 95.0 |
| 2 | Smelting and refining | 20 | 87.0 | 97.4 |
| 3 | Petroleum refining | 18 | 40.9 | 79.5 |
| 4 | Slaughtering and meat packing plants | 35 | 16.7 | 74.9 |
| ${ }_{6}$ | Iron and steel mills. |  | ${ }_{37}^{44.5}$ | ${ }_{93.8}^{98.5}$ |
|  | Sawmills (including shingle mills) |  | 0.4 | 28.1 |
| 8 | Manufacturers of industrial chemicals. | 17 | 13.0 | 65.3 |
| 9 | Pasteurizing plants. | 22 | 2.8 | 32.5 |
| 10 | Miscellaneous machinery and equi | 32 | 7.8 | 47.7 |
| 11 | Miscellaneous food manufacturers | 8 | 2.6 | 30.6 |
| 12 | Bakeries. | 28 | 1.1 | 33.0 |
| 13 | Printing and publishing | 29 | 3.9 |  |
| 14 | Metal stamping, pressing and coating industry | 20 | 3.9 | 46.1 |
| 15 | Fruit and vegetable canners and preservers. | 12 | 3.3 | 40.3 |
| 16 | Aircraft and parts manufacturers | 20 | 24.1 | 91.2 |
| 18 | Butter and cheese plants. |  |  |  |
| 18 | Motor vehicle parts and accesso | 15 | 12.6 | 68.5 |
| 19 | Feed manufacturers. |  |  |  |
| 20 | Women's clothing factories | 7 | 1.1 | 6.4 |
| 21 | Men's clothing factories. | 30 | 5.9 | 35.9 |
| ${ }_{23}^{22}$ | Breweries...... | 12 | ${ }^{22.2}$ | ${ }_{25}^{62.5}$ |
| 24 | Manufacturers of electrical industrial equipment | ${ }_{23}$ | 23.0 | 78.7 |
| 25 | Communications equipment manufacturers...... | 18 | ${ }_{13.6}$ | 79.4 |

## PART III.-PROVINGIAL AND LOGAL DISTRIBUTION OF MANUFAGTURING PRODUCTION

## Section 1.-Provincial Distribution of Manufacturing Production

This Section shows the distribution and concentration of the manufacturing industries in each province. Ontario and Quebec are by far the most important manufacturing provinces of Canada. Their combined production in 1961 amounted to $\$ 19,284,587,215$ or 79.5 p.c. of the total factory shipments of manufactured products.

Table 1 shows the outstanding predominance of Ontario and Quebec in each industrial group. In 1961, Quebec led in the manufacture of tobacco products, leather goods, textiles, knitting mills, clothing and products of petroleum and coal and had a very slight margin over Ontario in output of paper. In each of the other groups, except wood products, Ontario had the greater production of the two provinces. In the production of wood products, British Columbia, with 54 p.c. of the total, held the dominant position, outranking both Quebec and Ontario which accounted for 18 p.c. and 17 p.c., respectively, of the total. In each of the other groups Ontario and Quebec led by a wide margin.

This Section normally carries details of leading industries in each province. However, since there were no later figures available at the time of printing than those given in the 1962 edition, the reader is referred for such data to pp. 652-662 of that issue.

## 1.-Summary Statistics of Manufactures of each Province classified by Industrial Group, 1961

Note.-Based on the revised Standard Industrial Classification (see p. 651) and new establishment concept (see third paragraph, p. 645).

| Province and Industrial Group | Estab-lishments | Employees | Salaries and Wages | Cost at Plant of Materials Used | Value Added by Manufacture | Selling Value of Factory Shipments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | \$ | \$ | \$ | \$ |
| Newfoundland | 338 | 9,896 | 35,969,805 | 60,628,868 | 70,009,989 | 137,224,209 |
| Foods and beverages | 65 | 4,060 | 8,614,106 | 20,468,769 | 18,646,300 | 40, 440,439 |
| Leather.............. |  |  |  |  |  |  |
| Textiles. | 1 | 1 | 1 | 1 | 1 | 1 |
| Knitting mills | 1 | 1 | 1 | 1 | 1 | 1 |
| Clothing. | ${ }^{1}$ | ${ }^{1}$ | 1 | 285 | 1809041 | $4,044,652$ |
| Wood.... | 192 | 652 | 1,479,210 | 2,285,357 | 1,809,041 | 4,044,652 |
| Furniture and fixtures...... | 7 | $\stackrel{27}{ }$ | -92,733 | 64,053 | 118,287 | 185,535 |
| Paper and allied industries ${ }^{2} \ldots \ldots$. | 2 | 3,196 | 19,114, 294 | 29,892,579 | 39,224,895 | 73,725,374 |
| Printing, publishing and allied industries. | 29 | 424 | $\underset{1}{1,379,849}$ | $\underset{1}{692,774}$ | $\underset{1}{2,471,175}$ | 3,231,348 |
| Primary metal. |  |  |  |  |  | 1 |
| Metal fabricating (except machinery and transportation equipment) | 6 | 184 | 680,976 | 1,167,545 | 1,004,340 | 2,414,196 |
| Machinery (except electrical)...... | 1 |  |  |  |  |  |
| Transportation equipment | 1 | 1 | 1 | 1 | 1 | 1 |
| Non-metallic mineral product | 13 | 388 | 1,517,909 | 2,392,197 | 3,110,744 | 5,767,384 |
| Chemicals and chemical products. |  |  | 1, |  |  | 5,767, |
| Miscellaneous manufacturing industries. | 24 | 965 | 3,090,728 | 3,665,594 | 3,625,207 | 7,415,281 |
| Prince Edward Island | 156 | 1,724 | 4,207,474 | 21,191,058 | 8,131,146 | 30,041,039 |
| Foods and beverages. | 72 | 1,106 | 2,671,659 | 17,676,783 | 5,053,347 | 23,254,660 |
| Tobacco products |  |  |  |  |  |  |
| Leather. | ${ }^{3}$ | ${ }^{3}$ | 3 | 3 | ${ }^{3}$ | 3 |
| Textiles. | 3 | 3 | $3^{3}$ | 3 | 3 | 3 |
| Wood | 51 | 160 | 327,192 | 339,457 | 419,445 | 787,998 |
| Furniture and fixtures | 3 | ${ }^{3}$ |  |  |  |  |
| Paper and allied industries. | 3 | 3 | 3 | 3 | 3 | 3 |
| Printing, publishing and allied industries | 8 | 186 | 506, | 238,234 | 969,915 | 1,230,441 |
| Primary metal. | 3 |  |  |  |  | ${ }^{3}$ |
| Metal fabricating (except machinery and transportation equipment) | 3 | 3 | 3 | 3 | 3 | 3 |
| Transportation equipment. | 4 | 33 | 87,433 | 101,348 | 98,547 | 216,220 |
| Non-metallic mineral products | 6 | 41 | 99,318 | 114,511 | 182,914 | 298,299 |
| Chemicals and chemical products. All other groups. | ${ }^{3} 15$ | ${ }^{3} 198$ | ${ }_{515,228}$ | $\stackrel{3}{2,720,725}$ | 1,406,978 | $4{ }_{4}^{3} 253,421$ |
| Nova Scotia | 1,002 | 26,801 | 88,919,256 | 206,463,487 | 159,218,497 | 375,306,900 |
| Foods and beve | 323 | 8,690 | 22,199,515 | 75,697,906 | 44, 864,525 | 123,821,865 |
| Leather.. | 1 |  | 1 |  |  |  |
| Textiles. | 7 | 499 | 1,283,113 | 2,350,460 | 2,965,165 | 5,482,309 |
| Knitting m | 7 | 1,169 | 2,412,920 | 4,905, 924 | 4,143,022 | 9,139,732 |
| Clothing | 11 | 346 | 574,515 | 1,321,326 | 879,537 | 2,210,767 |
| Wood.. | 341 | 2,425 | 5,298, 240 | 12,351,339 | 8,954,743 | 21,941,233 |
| Furniture and fixtures... | 33 | -325 | 746,901 | 1,000,358 | 1,207,676 | 2,247, 303 |
| Paper and allied industries ${ }_{\text {ili }} \ldots \ldots$. | 5 | 1,449 | 6,021,909 | 10,690,331 | 13,476,271 | 25,963,405 |
| Printing, publishing and allied industries. <br> Primary metal | ${ }_{1} 78$ | 1,328 | 5,146,971 | 2,955,038 | 9, 108, 074 | 12,204,037 |
| Metal fabricating (except machin ery and transportation equipment) |  | 1,415 | 5,239,818 | 9,079,534 | 8,706,048 | 18,938,799 |
| Machinery (except electrical) | 5 | , 271 | -986,235 | -474,405 | 1,565,063 | 2,120,916 |
| Transportation equipment | 65 | 3,670 | 14,228,954 | 11,143,291 | 15, 174,222 | $26,829,054$ |
| Electrical products.......... |  |  | $\stackrel{1}{1,406,070}$ | 2,362,195 | 1 $2,723,009$ |  |
| Petroleum and coal products |  |  | 1,406,070 | 2, ${ }_{1}$ ( ${ }^{\text {2, }} 195$ | 2,723,009 | 5,15 |
| Chemicals and chemical products. | 15 | 228 | 843,785 | 2,582,104 | 3,336,055 | 5,856,655 |
| dustries. | 34 | 4,521 | 22,530,310 | 69,549, 276 | 42,115,087 | 113,094,461 |

[^192]
## 1.-Summary Statistics of Manufactures of each Province classified by Industrial Group, 1961-continued

| Province and Industrial Group | Estab-lishments | $\underset{\text { ployees }}{\mathrm{Em-}}$ | Salaries and Wages | Cost at Plant of Materials Used | Value <br> Added by Manufacture | Selling Value of Factory Shipments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | \$ | \$ | \$ | \$ |
| New Bruns | 708 | 22,443 | 73,892,368 | 223,050,728 | 159,979,430 | 397,456,695 |
| Foods and beverag | 235 | 6,839 | 17,441,886 | 84,599,503 | 44,854,305 | 132,668,630 |
| Leather......... | 4 | 290 | 688,679 | 1,000,256 | 1,122,130 | 2,158,418 |
| Textiles | 11 | 497 | 997,720 | 1,809,542 | 1,633,259 | 3,673,597 |
| Knitting mil |  | 1 |  | ${ }^{1} 1$ | 1 1 | 1 |
| Clothing.... | 4 | 234 | 333,128 | 228,108 | 456,515 | 703,709 |
| Wood. | 260 | 2,933 | 7,266,933 | 16,743,573 | 13,561,201 | 30,493,702 |
| Furniture and fixtures | 20 | 105 | 256,518 | 310,983 | 414,837 | 735,542 |
| Paper and allied industries | 19 | 4,565 | $22,355,424$ | 51,553,285 | 51,344,309 | 113,578,682 |
| Printing, publishing and allied industries. | 51 | 974 | 3, 452,666 | $2,118,049$ | 5,759,483 | 8,025,110 |
| Primary metal................... |  |  |  |  |  |  |
| Metal fabricating (except machinery and transportation equipment) | 30 | 987 | 3,779,525 | 5,807,640 | 6,051,954 | $\underset{1}{12,075,359}$ |
| Machinery (except electrical)...... |  | 2.755 |  |  |  |  |
| Transportation equipmen | 8 | 2,755 | $9,514,922$ $2,134,283$ | $8,240,883$ $3,317,056$ | $11,295,555$ $3,644,222$ | $19,890,385$ $7,144,346$ |
| Electrical products.. | 4 | 673 | 2,134, 283 | 3,317,056 | 3,644, 222 | 7,144,346 |
| Non-metallic mineral produc | 28 | 567 | 1,950,686 | 2,342,603 | 4,422,535 | 7,873,568 |
| Petroleum and coal products. |  | 143 |  |  |  |  |
| Chemicals and chemical products. | 7 | 143 | 526,501 | 3,791,471 | 1,386,802 | 5,334,107 |
| Miscellaneous manufacturing industries. | 27 | 881 | 3,193,497 | 41,187,776 | 14,032,323 | 53,101,540 |
| Quebec | 10,955 | 423,729 | 1,626,572,189 | 3,982,419,548 | 3,207,856,006 | 7,327,257,662 |
| Foods and beverag | 2,420 | 48,690 | 172,197,381 | 823,149, 444 | 464,989,857 | 1,302, 242, 856 |
| Tobacco products. | 21 | 6,828 | 29,527, 391 | 104,901, 410 | 88,892,939 | 193,459,191 |
| Rubber. | 33 | 5,7C3 | 21,137, 048 | 31,984,440 | 36,492,736 | 69,726,799 |
| Leather | 303 | 16,397 | 43,578, 230 | 67,471,320 | 69, 850,091 | 137,487, 844 |
| Textiles | 388 | 38,175 | 126,915, 646 | 272,926, 148 | 222,658,115 | 504, 148, 479 |
| Knitting m | 206 | 11,066 | 29,657, 213 | $63,004,173$ | 51,832,913 | 114, 802,182 |
| Clothing.. | 1,504 | 56,304 | 146,608, 083 | 284, 424, 117 | 238,800,500 | 522,615,211 |
| Wood... | 1,699 | 17,405 | 47,578, 472 | 100, 926,720 | 80, 883,491 | 5 |
| Furniture and fixtures. | 715 | 12,704 | 40,131, 819 | 62,437,766 | $66,438,042$ 386 | 199, 803,472 |
| Paper and allied industries . . . . . . | 188 | 35,724 | 175, 147, 493 | 367,425,110 | 386,092,935 | 797,803,472 |
| Printing, publishing and allied industries. | 992 | 20,082 | 88, 832, 390 | $83,370,544$ $539,759,990$ | $168,151,018$ $218,908,886$ | $252,775,773$ $780,811,470$ |
| Primary metal. | 114 | 19,078 | 98,288,935 | 539,759, 990 | 218,908,886 | 780,811,4,0 |
| Metal fabricating (except machinery and transportation equipment) | 706 | 25,319 | 115,058,662 | 202,173, 140 | 195, 097, 928 | 400,307,641 |
| Machinery (except electrical)...... | 94 | 7,640 | 32,922,995 | 48, 806, 889 | 58,024,503 | 106, 214,493 |
| Transportation equipment......... | 110 | 30,602 | 146,859,379 | 170,396,585 | 189, 465, 224 | 362,126,224 |
| Electrical products................ | 113 | 23,414 | 107, 911, 682 | 151,363,340 | 169,133,365 | 198,467,376 |
| Non-metallic mineral products.... | 393 | 12,088 | 50,322,765 | $73,863,613$ $296,197,909$ | $111,379,695$ $82,920,307$ | 198, $381,058,528$ |
| Petroleum and coal products...... | 15 | 2,937 18,742 | 17,838,596 | $296,197,909$ $165,438,800$ | $82,920,307$ $224,934,271$ | $381,058,538$ $406,437,635$ |
| Chemicals and chemical products. | 340 | 18,742 | 89,700,016 | 165,438,800 | 224,934, 271 | 400, 437,035 |
| Miscellaneous manufacturing in dustries. | 601 | 13,831 | 46,357,993 | 72,398,090 | 82, 909,190 | 157,992,456 |
| Ontario. | 12,081 | 591,501 | 2,597,408,249 | 6,337,292,819 | 5,429,853,032 | $11,957,329,553$ |
| Foods and beverage | 2,658 | 77,094 | 298,377, 801 | 1,256,939,689 | 759,458, 660 | 2,034,875,886 |
| Tobacco products.. | 16 | 2,601 | 9,599,209 | 100,382,860 | $39,707,749$ $129,666,869$ | 141,471, 2178 |
| Rubber. | 48 | 12,768 | 59,305,860 | 112,911,142 | 129,666, 869 | 141,457,860 |
| Leather. | 200 | 13,700 | 42,500,108 | $77,056,614$ $172,175,312$ | $65,342,790$ $154,042,324$ | 331,650,489 |
| Textiles. | 373 | 21,426 | 76,761,707 | $172,175,312$ $46,907,706$ | $154,042,324$ $42,051,299$ | 90,125,132 |
| Knitting mills | 131 | 8,637 | 23,973,624 | $46,907,706$ $98,442,658$ | 42,051, $100,925,940$ | 197,107,808 |
| Clothing. | 581 | 22,063 | $63,616,682$ $49,729,100$ | 98,442,658 | $100,925,940$ $80,853,469$ | 177,379, 694 |
| Wood................ | 928 | 15,309 15,215 | $49,729,100$ $54,305,510$ | 94,071,051 | $80,853,422$ $90,304,122$ | 174,258,352 |
| Furniture and fixtures.. | 838 | 15,215 | 54,305,510 | $83,012,148$ $396,935,976$ | -356,988, 054 | 787,841,748 |
| Paper and allied industries....... | 260 | 35,873 | 174,050,748 | 396,935,976 | 356,988,054 |  |
| Printing, publishing and allied in dustries. | 1,439 | 37,044 | 173,373, 400 | 147, 175, 393 | 305, 244, 924 | $\begin{array}{r} 455,058,523 \\ 1624729.132 \end{array}$ |
| Primary metal.... | 203 | 53,022 | 281,501,656 | 831, 367,102 | 744,709,876 | 1,624,729,132 |
| Metal fabricating (except machin ery and transportation equip ment) | 1,427 | 53,109 | 240,226,697 | 420,116,666 | 432,411,659 | $864,992,249$ 485 |
| Machinery (except electrical)..... | 1 332 | 30,810 | 146,798,738 | 234,281, 244 | 245, 306, 158 | 485, 330,295 |
| Transportation equipment... | 283 | 57,708 | 295,074,983 | 881,994,654 | 534,747,656 | 1,414,269,095 |

[^193]
## 1.-Summary Statistics of Manufactures of each Province classified by <br> Industrial Group, 1961-continued

| Province and Industrial Group | Estab-lishments | Employees | Salaries and Wages | Cost at Plant of Materials Used | Value Added by Manufacture | Selling Value of Factory Shipments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | \$ | \$ | \$ | \$ |
| Ontario-concluded |  |  |  |  |  |  |
| Electrical products.............. | 345 519 | $\begin{array}{r}52,843 \\ 19,546 \\ \hline\end{array}$ | $233,048,153$ $87,869,980$ | $408,770,412$ $120,566,553$ | $422,601,569$ $183,869,975$ | $830,790,452$ $324,616,852$ |
| Non-metalic mineral products. | 519 | 19,546 5,835 | $\begin{array}{r}\text { 87, } \\ 36886,9824 \\ \hline\end{array}$ | 1201,617, 304 | 183, $90.581,230$ | 386,442,003 |
| Chemicals and chemical products. | 528 | 27,789 | 137,650,905 | 385,642,926 | 445,483,203 | 861,064,367 |
| Miscellaneous manufacturing industries. | 948 | 29,109 | 113,006,764 | 176,915,409 | 205,555,506 | 381,388,665 |
| Manitoba | 1,416 | 41,212 | 157,302,360 | 441,440,322 | 315,235,281 | 769,894,639 |
| Foods and beverage | 361 | 9,647 | 38,546,320 | 208, 919,073 | 77, 963,311 | 291,080,140 |
| Rubber. |  |  |  |  |  |  |
| Leather | 17 | 537 | 1,465,211 | 3,546,035 | 1,996,899 | 5,564,524 |
| Textiles. | 35 | 575 | 1,686,647 | 7,163,939 | 3,038,062 | 10, ${ }_{1} 59,574$ |
| Knitting mills | 129 |  |  |  |  | 50,069,574 |
| Cothing | 129 162 | 5,694 1,090 | $14,812,057$ $3,239,744$ | $28,653,237$ $4,458,295$ | $21,524,853$ $5,231,348$ | $50,069,574$ $9,865,131$ |
| Furniture and fixture | 120 | 1,818 | 6,244,308 | 11,305,446 | 9,711,898 | 21,210,485 |
| Paper and allied industries <br> Printing, publishing and allied industries. <br> Primary metal | 23 | 1,553 | 6,505,912 | 18,211,780 | 19,448,868 | 39,039,648 |
|  | 194 | 3,808 | 15,363,312 | 11,796,836 | 27,118,678 | 39,176,722 |
|  | 13 | 2,507 | 12,121,620 | 26,317,048 | 40,284, 106 | 71,192,218 |
| Metal fabricating (except machinery and transportation equipment). | 115 | 3,266 | 14,282,490 | 21,029,189 |  | 43,585,895 |
| Machinery (except electrical)...... | 31 | 1,082 | 4,152,547 |  | $22,384,493$ $7,741,700$ | 15,400,590 |
| Transportation equipment. | 32 | 5,176 | 21,642,010 | 25,615,721 | 27, 840, 597 | 54, 133,253 |
| Electrical products. | 19 | . 816 | 2,921,209 | 6,783,970 | 6,415,126 | 13,295,917 |
| Non-metallic mineral product | 7 | 1,361525 | 5,639,947 | 9,119,142 | 16,261, 407 | 27,253,44$49,662,267$ |
| Petroleum and coal products. |  |  | 2,829,199 | 35, 938,281 | 13,746,564 |  |
| Chemicals and chemical product | 33 | 701 | 2,606,968 | 9,061,187 | 8,681,836 | 17,614,307 |
| dustries... | 75 | 1,056 | 3,242,859 | 5,625,976 | 5,845,535 | 11,490,950 |
| Saskatchew | 675 | 12,149 | 48,947,762 | 218,815,222 | 120,971,938 | 344,432,203 |
| Foods and beve | 221 | 5,664 | 22,128,026 | 119,093,054 | 52,226,508 | 173,687,054 |
| Leather. |  |  | 236,647 | 982,550 | ${ }_{1}^{1} 557,107$ | 1,347,405 |
| Textiles. | 8 | 83 |  |  |  |  |
| Clothing | 7 | ${ }_{852}^{232}$ | 2,415,744 | 1, ${ }^{1}, 660,793$ | 1,407,492 | 2,858,409 |
| Wood. | 116 |  |  |  |  |  |
| Furniture and fixtur | 337 | 84180 | $\begin{aligned} & 246,148 \\ & 674,443 \end{aligned}$ | $\begin{array}{r} 252,294 \\ 1,860,783 \end{array}$ | $\begin{array}{r} 372,052 \\ 1,234,446 \end{array}$ | $\begin{array}{r} 634,782 \\ 3,267,454 \end{array}$ |
| Paper and allied industries |  |  |  |  |  |  |
| Printing, publishing and allied industries. | 1335 | 1,485785 | $\begin{aligned} & 5,614,736 \\ & 3,808,694 \end{aligned}$ | $3,495,021$$18,726,384$ | $\begin{array}{r} 9,459,048 \\ 17,267,752 \end{array}$ | $\begin{aligned} & 13,164,937 \\ & 37,066,622 \end{aligned}$ |
| Primary metal. |  |  |  |  |  |  |
| Metal fabricating (except machinery and transportation equipment) | 49 | 763 | 3,107,493 | 6,659,355 | 4,895,967 |  |
| Machinery (except electrical | 11 | 146 | 3, 621,971 | 6,719,414 | 1,334,612 | r ${ }^{11,194,783}$ |
| Transportation equipment | ${ }_{1} 5$ | ${ }_{1} 22$ | ${ }_{1}^{85,883}$ | 55,779 | 137,582 | 204,350 |
| Electrical products. |  |  |  |  |  |  |
| Non-metalic mineral produc | 3510 | 5601,002 | $\begin{aligned} & 2,362,858 \\ & 5,846,134 \end{aligned}$ | $\begin{array}{r} 4,605,606 \\ 51,898,339 \end{array}$ | 7,064,260 | $\begin{array}{r} 12,467,537 \\ 70,116,290 \\ 2,287,400 \end{array}$ |
| Petroleum and coal products. |  |  |  |  | 18,536,535 |  |
| Chemicals and chemical products. | 9 | 78 | 312,338 | 1,065,770 | 1,325,720 |  |
| dustries. | 26 | 213 | 746,543 | 2,324,586 | 1,380,289 | 3,716,877 |
| Alberta. | $\begin{array}{r} 1,569 \\ 435 \end{array}$ | $\begin{aligned} & 37,921 \\ & 11,605 \end{aligned}$ | $\begin{array}{r} 157,348,484 \\ 45,383,605 \end{array}$ | $\begin{aligned} & 568,732,861 \\ & 284,112,013 \end{aligned}$ | $\begin{array}{r} 346,731,838 \\ 95,173,816 \end{array}$ | $\begin{gathered} \mathbf{9 3 3 , 8 2 6 , 4 7 6} \\ 383, \mathbf{1} 367,444 \\ \hline \end{gathered}$ |
| Foods and beverag |  |  |  |  |  |  |
| Lubber. | 818 | $\begin{array}{r} 94 \\ 403 \end{array}$ | $\begin{array}{r} 292,411 \\ 1,702,889 \\ 1 \end{array}$ | $\begin{array}{r} 652,602 \\ 4,754,590 \end{array}$ | $\begin{array}{r} 485,582 \\ 2,950,251 \\ 1 \end{array}$ |  |
| Textiles. |  |  |  |  |  | 7,776,842 |
| Knitting mills | 1 | 1 |  |  |  |  |
| Clothing | 18299 | 1,239 | 3,302,964 | $6,330,025$$20,413,328$ | $6,660,568$$17,299,386$ | $12,775,165$$38,785,137$ |
| Wood. |  | 3,366 | 10,001,915 |  |  |  |
| Furniture and fixtures. | 9421 | $\begin{array}{r} 0,0026 \\ 1,196 \end{array}$ | $\begin{array}{r} 3,222,663 \\ 6,018,566 \end{array}$ | $\begin{array}{r} 5,213,503 \\ 19,271,609 \end{array}$ | $\begin{array}{r} 5,335,089 \\ 20,509,756 \end{array}$ | $\begin{aligned} & 10,615,187 \\ & 41,302,919 \end{aligned}$ |
| Paper and allied industries |  |  |  |  |  |  |
| dustries | 195 | 2,697 | 11,276,825 | $9,444,256$ | 21,782,976 | 31,445,619 |

[^194]
## 1.-Summary Statistics of Manufactures of each Province classified by Industrial Group, 1961-concluded

| Province and Industrial Group | Estab-lishments | Employees | Salaries and Wages | Cost at Plant of Materials Used | Value Added by Manufacture | Selling Value of Factory Shipments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | \$ | \$ | 8 | \$ |
| Alberta-concluded |  |  |  |  |  |  |
| Primary metal................... | 19 | 1,510 | 8,176,591 | 42,677,704 | 21,417,692 | 67,596,720 |
| Metal fabricating (except machinery and transportation equipment) |  |  |  |  |  |  |
| Machinery (excep | 20 | 409 | 1,785,'756 | 3,806,458 | 2,869,235 | $54,540,242$ $6,705,136$ |
| Transportation equipment | 35 | 2,981 | 12,273,548 | 12,642, 213 | $14,835,456$ | 27,708,446 |
| Electrical products. | 9 | 235 | 836,083 | 3,443, 173 | 3,337, 367 | 7,029,317 |
| Non-metallic mineral produc | 99 | 3,280 | 13,965,241 | 22,772,518 | 34, 858,594 | 60,587,743 |
| Petroleum and coal products | 20 | 1,640 | 9,577,275 | 76,997,734 | 30,119,393 | 108, 331,340 |
| Chemicals and chemical products. | 36 | 1,860 | 9,984,194 | 21,999,011 | 23,764,976 | 59,458,981 |
| iscellaneous manufacturing industries. | 91 | 904 | 3,443,043 | 5,766,171 | 9,014,172 | 14,355,659 |
| British Columbia | 3,502 | $\mathbf{9 7}, 518$15,444 | 440, 197, 776 | 1,065,073,007 | $\begin{aligned} & \mathbf{8 6 3 , 4 4 2 , 5 3 8} \\ & 141,355,254 \end{aligned}$ | $\begin{array}{r} \mathbf{1}, \mathbf{9 6 7}, \mathbf{0 9 1}, \mathbf{4 3 8} \\ 399,776809 \end{array}$ |
| Foods and beverages |  |  | -301,299 | - ${ }^{212,414}$ |  |  |
| Rubber |  | -65 |  |  | $457,596$ | , 690, 152 |
| Leather. | 15384 | 238 | 704,114 | -994,996 |  |  |
| Textiles. |  | 730 | 2,521,494 | 4,586,359 |  | $2,135,212$ $8,646,301$ |
| Knitting m | ${ }_{51}^{4}$ | 303 | 826,700 | 1,225, 807 | $\begin{aligned} & 4,028,565 \\ & 1,669,621 \end{aligned}$ | $2,865,757$$12,712,908$ |
| Clothing |  | 1,500 | 4,171,698 | $327,293,170$ | $1,69,267$$6,159,267$$218,161,562$ |  |
| Wood. | 1,199225 | 35, 808 | 152, 843,267 |  |  | $\begin{array}{r} 556,103,060 \\ 22,260,088 \end{array}$ |
| Furniture and fixtures.. |  | 11,122 | $\begin{array}{r} 7,127,832 \\ 61,229,049 \end{array}$ | $\begin{array}{r} 10,988,574 \\ 125,629,715 \end{array}$ | $\begin{array}{r} 11,118,351 \\ 182,960,503 \end{array}$ |  |
| Paper and allied industries | 43 |  |  |  |  | $323,142,939$ |
| Printing, publishing and allied industries. |  | $\begin{aligned} & 4,732 \\ & 6,641 \end{aligned}$ | $\begin{aligned} & 22,875,638 \\ & 35,373,558 \end{aligned}$ | $\begin{array}{r} 14,392,050 \\ 108,034,239 \end{array}$ | $\begin{aligned} & 40,917,812 \\ & 66,500,898 \end{aligned}$ | $\begin{array}{r} 55,819,360 \\ 177,725,907 \end{array}$ |
| Primary metal | 306 41 |  |  |  |  |  |
| Metal fabricating (except machinery and transportation equipment) | 326 | 4,959 |  |  |  |  |
| Machinery (except electrical) | 49 | 4,433 | $\begin{array}{r} 23,354,551 \\ 7,922,204 \end{array}$ | $\begin{array}{r} 39,819,137 \\ 7,691,313 \end{array}$ | $\begin{aligned} & 42,033,863 \\ & 12,432,773 \end{aligned}$ | $83,835,316$ $20,926,759$ |
| Transportation equipment | 125 |  | 21,428,216 | 19,250,643 | $33,906,298$$8,337,666$ | $53,468,404$$17,419,196$ |
| Electrical products. | 33 | 1,028 | 4,590,720 | 9,132,905 |  |  |
| Non-metallic mineral produc | 117 | 1,832 | 9,012,412 | 11, 977,470 | 17,520,832 | 32,224, 249 |
| Petroleum and coal products. | 11 | 1,360 | $8,330,833$ | $82,718,605$ | 26, 141,972 | 112,638,455 |
| Chemicals and chemical products. | 100 | 2,517 | 11,996,249 | 31,836,964 | 40,689, 226 | 71,861,311 |
| Miscellaneous manufacturing in- dustries................................. | 164 | 1,261 | 5,206,485 | 4,925,563 | 7,927,058 | 12,839,255 |
| Yukon and Northwest Territories | 1354 | $\begin{array}{r} 138 \\ 16 \\ 42 \end{array}$ | $\begin{array}{r} \mathbf{6 8 1 , 2 4 6} \\ 54,217 \\ 150,887 \end{array}$ | $\begin{array}{r} \mathbf{2 , 6 0 0 , 0 5 6} \\ 78,296 \\ 249,668 \end{array}$ | $\begin{aligned} & \mathbf{7 0 7 , 9 8 5} \\ & 128,713 \\ & 226,479 \end{aligned}$ | $\begin{array}{r} \mathbf{3 , 4 3 4 , 1 3 5} \\ 218,545 \\ 475,851 \end{array}$ |
| Foods and beverages. |  |  |  |  |  |  |
| Wood............. |  |  |  |  |  |  |
| Printing, publishing and allied industries. |  | ${ }_{1}^{1}$ | $\begin{aligned} & 1 \\ & \stackrel{1}{476,142} \end{aligned}$ | $\begin{gathered} 1 \\ \stackrel{1}{2} \\ 2,272,092 \end{gathered}$ | $\begin{aligned} & \stackrel{1}{1} \\ & 352,793 \end{aligned}$ | $\begin{gathered} 1 \\ \stackrel{1}{2,739,739} \end{gathered}$ |
| Petroleum and coal products | 1 |  |  |  |  |  |
| All other groups.. | 4 | 80 |  |  |  |  |

[^195]
## Section 2.-Manufacturing Industries in Urban Centres

Table 2 indicates the extent to which the manufacturing industries are concentrated in urban centres and shows, by province, the proportion of the selling value of factory shipments contributed by cities and towns having shipments of over $\$ 1,000,000$ each. In the more highly industrialized provinces of Ontario and Quebec such cities and towns accounted for 80 p.c. and 94 p.c., respectively, of the total manufactures of those provinces in 1960 , compared with 82 p.c. and 94 p.c., respectively, in 1959. In the Atlantic Provinces and British Columbia, where sawmilling, fish products and dairying are leading industries, the proportions were 69 p.c. and 47 p.c., respectively in 1960, showing little change compared with the previous year. In the Prairie Provinces, manufacturing is confined largely to a few urban centres. Although there has been some recent tendency to establish new industry
in smaller urban centres, for Canada as a whole the percentage of manufactures accounted for by urban centres having shipments of over $\$ 1,000,000$ was 80.5 in 1955 and 81.1 in 1960.
2.-Urban Centres, Each with Selling Value of Factory Shipments of Over $\mathbf{\$ 1 , 0 0 0 , 0 0 0}$, Number of Establishments and Total Shipments in these Centres as a Percentage of the Provincial Total, by Province, 1960.

| Province or Territory | Urban Centres with Shipments of Over $\$ 1,000,000$ Each | Establishments Reporting in Urban Centres with <br> Shipments of Over <br> \$1,000,000 | Shipments of Urban Centres having $\$ 1,000,000$ or Over | Total Shipments of Each Province | Shipments of Urban Centres having \$1,000,000 or Over as a Percentage of Total Shipments in the Province |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | \$ | \$ |  |
| Newfoundland. | 7 | 120 | 84, 815,319 | 129,284,578 | 65.6 |
| Prince Edward Island. | 4 | 61 | 21,876,943 | 30,231,361 | 72.3 |
| Nova Scotis. | 27 | 456 | 247,271,477 | 406,182,088 | 60.8 |
| New Brunswick. | 18 | 330 | 299, 563, 309 | 377,110,146 | 79.4 |
| Quebec. | 207 | 8,370 | 6,798, 173, 718 | 7,206,096,003 | 94.3 |
| Ontario.. | 190 | 8,885 | 9,351,940,361 | 11,685, 675,652 | 80.0 |
| Manitobs. | 14 | 1,090 | 631,565,455 | 738,457,346 | 85.5 |
| Saskatchewan. | 13 | 463 | 288,412,647 | 344,773, 261 | 83.6 |
| Alberta. | 17 | 1,026 | 623,166, 176 | 889,657,800 | 70.0 |
| British Columbia. | 34 | 2,061 | 911,781,909 | 1,936,917,630 | 47.1 |
| Yukon and Northwest Territories. | - | - | - | 3,071,218 | - |
| Canada. | 531 | 22,862 | 19,258,567,314 | 23,747,457,083 | 81.1 |

3.-Principal Statistics of the Manufacturing Industries of the Six Leading Manufacturing Cities, Selected Years, 1939-60

| City and Year | Estab-lishments | Employees | Salaries and Wages | Cost at Plant of Materials Used | Value Added by Manufacture | Gross Value of Products ${ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | S | \$ | \$ | \$ |
| Montreal, Que........ 1939 | 2,501 | 105.315 | 114,602,118 | 254, 188,246 | .. | 483,246,583 |
| 1944 | 3,109 | 185,708 | 308, 396,358 | 650,618,563 |  | 1,215, 988, 014 |
| 1949 | 4,136 | 184,779 | 399,943, 526 | 847,444,669 |  | 1,596,713, 694 |
| 1953 | 4,398 | 193,129 | 544,284,191 | 1,067, 911,378 |  | 2,042,662,785 |
| 1955 | 4,379 | 176,998 | 529,339,811 | 1,021,717,306 |  | 1,963,367,235 |
| 1957 | 4,268 | 183, 996 | 611,657,486 | 1,214,443,559 |  | 2,288, 258, 169 |
| 1959 | 3,951 | 173,279 | 626,970,086 | 1,231, 974,393 | 1,086, 276,852 | 2,334,129,536 |
| 1960 | 3,996 | 171,621 | 643,387,247 | 1,224,513,359 | 1,118,350,304 | 2,349,783,042 |
| Toronto, Ont......... 1939 | 2,885 | 98,702 | 122,553,435 | 240,532,281 | . | 482,532,331 |
| 1944 | 3,344 | 154,538 | 260,776,613 | 513,429,109 | $\cdots$ | 1,020,345,353 |
| 1949 | 4,005 | 158,562 | 368,510,524 | 837,148,440 | . | 1,579, 186,450 |
| 1953 | 3,781 | 154,251 | 478, 086, 271 | 980,873,073 |  | 1,875,747,249 |
| 1955 | 3,497 | 134,235 | 448,775,761 | 916,493,539 |  | 1,732,099,123 |
| 1957 | 3.312 | 132,356 | 482,758, 834 | 961,000.335 |  | 1,832,080,726 |
| 1959 | 2,890 | 123,963 | 503,765, 998 | 1,008, 784, 582 | 852,074,583 | 1,867,389,948 |
| 1960 | 2,971 | 120,335 | 506, 872, 752 | 999,132,659 | 851,461,939 | 1,872,972,293 |
| Hamilton, Ont....... 1939 | 461 | 31,512 | 39,563,423 |  | $\cdots$ | 152,746,340 |
| 1944 | 480 | 53,500 | 94,982,915 | 171, 117, 467 | .. | 363,033, 672 |
| 1949 | 546 | 54,665 | 137,641,333 | 285, 180, 403 |  | 563,982,920 |
| 1953 | 566 | 60,451 | 201,515,979 | 385, 515, 852 | . | 824,407,315 |
| 1955 | 588 | 55, 202 | 200,311, 361 | 395,047, 070 |  | 844,835,085 |
| 1957 | 562 | 57,095 | 237, 883,530 | 502,608, 132 |  | 1,031,430,829 |
| 1959 | 506 | 52.820 | 244, 229,848 | 524,165,589, | 556,389,853 | 1,088,875, 035 |
| 1960 | 534 | 50,850 | 243, 415, 160 | 494,976,608 | 516,552,881 | 1,031, 197,944 |

For footnote, see end of table, p. 674.
3.-Principal Statistics of the Manufacturing Industries of the Six Leading
Manufacturing Cities, Selected Years, 1939-60 Manufacturing Cities, Selected Years, 1939-60-concluded

| City and Year |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: |

${ }^{1}$ In 1952 gross value of products was replaced by selling value of factory shipments; see text on p. 645.

## 4.-Principal Statistics of the Manufacturing Industries in the Six Leading Manufacturing Metropolitan Areas, 1960 and 1961

| Year and Metropolitan Area | Estab-lishments | Employees | Salaries and Wages | Cost of <br> Fuel and Electricity | Cost at Plant of Materials Used | Selling Value of Factory Shipments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | \$ | \$ | \$ | \$ |
| 1960 |  |  |  |  |  |  |
| Montreal. | 5,024 | 245,396 | 970,610, 851 | 55, 501,960 | 2,251,703,689 | 4,083,057,688 |
| Toronto.. | 4,741 | 206,434 | 879, 338, 328 | 37,937,529 | 1,712,074,602 | 3,342,137,321 |
| Hamilton. | 695 | 55,613 | 260,956,446 | 24,622,522 | 533,748,940 | 1,104, 903,463 |
| Vancouver. | 1,797 | 52,867 | 235, 338, 997 | 16,262,572 | 528,733,777 | 968,388,246 |
| Winnipeg. | 1,017 | 36,307 | 133,475,732 | 8,041,629 | 342,710,516 | 600,225,572 |
| Windsor. | 380 | 23,770 | 118,757,761 | 6,137,704 | 258,780,190 | 494,784, 271 |
| 1961 |  |  |  |  |  |  |
| Toronto. | 4,982 | 224,343 | 981, 787,133 | 46,782,414 | 2,199, 487,455 | 4,118,709,404 |
| Montreal. | 5,054 | 243,033 | 980,577, 238 | 43, 525,985 | 2,199, 262,928 | 4,058,958,750 |
| Hamilton. | 677 | 54,553 | 266,129,894 | 16,565,750 | 560,013, 203 | 1,168,600,255 |
| Vancouver. | 1,747 | 51,371 | 234, 882,479 | 15,310, 164 | 560,187, 270 | 980,355, 187 |
| Winnipeg. | 984 | 35,554 | 135,606,485 | 8,426,101 | 377,705,676 | 634,968,857 |
| Windsor.. | 380 | 22,074 | 113,112,695 | 6,120,021 | 239, 171,356 | 447,716,317 |

## 5.-Statistics of Manufactures of Municipalities, each with Selling Value of Factory Shipments of $\$ 10,000,000$ or Over and with Three or More Establishments, 1960

Note.-Statistics for urban centres with three or more establishments cannot be published when one establishment has 75 p.c. or two establishments 90 p.c. of the total value of shipments.

| Province and Municipality | Estab-lishments | Employees | Salaries and Wages | Cost at Plant of Materials Used | Value <br> Added by Manufacture | Selling Value of Factory Shipments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | \$ | \$ | \$ | \$ |
| NewfoundlandSt. John's. | 85 | 2,565 | 7,842,917 | 12,606,049 | 17,088,653 | 29,917,507 |
| Prince Edward IslandCharlottetown.......... | 34 | 697 | 2,140,585 | 9,797,272 | 4,501,664 | 14,469,772 |
| Nova Scotia- |  |  |  |  |  |  |
| Amherst. | 26 | 1,019 | 3,377,712 | 4,523,406 | 6,188,674 | 11,060,680 |
|  | 105 | 4,264 | 13,595,530 | 29,633,737 | 29,459,919 | 60,137,381 |
| Trenton | 10 | 828 | 3,290,740 | 7,212,640 | 4,523,551 | 11,966,648 |
| Truro. | 29 | 1,129 | 2,557,920 | 5,491,567 | 5,136,380 | 10,794,563 |
| New Brunswick- |  |  |  |  |  |  |
| Fredericton. | 38 | 1,067 | 3,192,826 | 5,445,514 | 5,801,884 | 11,474,014 |
| Lancaster. | 8 | 980 | 3,949,079 | 12,415,970 | 11,674,669 | 24,647,783 |
| Moncton... | ${ }_{91}^{61}$ | 2,566 3,372 | 9,360,317 | 27,140,038 | 14,263,071 | 42,018,022 |
| Saint John | 91 | 3,372 | 11,374,732 | 68,334,704 | 36,237,218 | 102,434,819 |
| Quebec- |  |  |  |  |  |  |
| Acton Vale. | 14 | 1,295 | 2,945,120 | 7,993,468 | 5,208,346 | 13,420,929 |
| Beauharnois............. | 20 | 1,766 | 7,813,199 | 15,709,953 | 18,363,920 | 38,225,769 |
| Cap de la Madeleine.... | 43 | 2,747 | 8,838,524 | 27,167,612 | 21,306,376 | 50,013,653 |
| Cowansville. . ${ }^{\text {a }}$. | 15 | 1,652 | 4,988,464 | 9,425,229 | 9,750,805 | 19,256,328 |
| Drummondville | 68 24 | 6,014 | 19,429,842 | 35,902,866 | 42,627,514 | 80,342,279 |
| Farnham. | 24 | 1,081 | 3,257,245 | 6,190,776 | 6,003,831 | 12,563,305 |
| Granby ${ }^{\text {Grand }}$ | 84 | 7,176 | 22,931,334 | 50,902,454 | 45,546,311 | 96,885,870 |
| Hull..... | 5 | 2,336 | 8, 2121,254 | 13,586,374 | 16,350,999 | 31,406,809 |
| Huntingdon | 15 | 3,641 | 12,603,795 | 28,642, ${ }^{\mathbf{6}, 909} \mathbf{1 6 5}$ | 24,178,178 | 11, 174,277 |
| Jacques Cartie | 31 | 1,130 | 4,050,807 | 7,829,510 | 8,066,112 | 16,214,523 |
| Joliette. | 56 | 2,219 | 6,795,651 | 15,535,521 | 13,617,175 | 29,820,762 |
| Lachine | 87 | 12,167 | 55,159,765 | 94,630,161 | 90,459,094 | 188,144,952 |
| LaSalle. | 57 | 5,314 | 23,779,969 | 70,924,266 | 78,193,476 | 151,896,573 |
| Longueuil. | 31 21 | 3,399 | 15,008,478 | 15,001,209 | 17,650,562 | 33,781,462 |
| Magog. | 35 | 1,469 | 2,650,515 | 42,264,183 | 5,467,533 $14,544,374$ | 10,560,849 |
| Marieville | 18 | , 558 | 1,494,478 | 7,550,805 | 14,932,626 | 10,664,353 |
| Montmagn | -37 | 1,273 | 3,774,025 | 9,647,921 | 7,647,283 | 17,206,912 |
| Montreal | 3,996 | 171,621 | 643,387,247 | 1,224,513,359 | 1,118,350,304 | 2,349,783,042 |
| Montreal Eas | 42 | 6,927 | 34,301,216 | 480,943,803 | 118,906,795 | 618,042,404 |
| Mountreal Royal | 78 | 1,379 | 5,385,046 | 10,612,972 | 9,660,443 | 20,526,857 |
| Outremoyt. | 56 85 | 6,294 | 26,718,516 | $80,175,444$ $23,277,353$ | $53,847,054$ $20,016,427$ | 134,503,223 |
| Plessisville. | 27 | 2,929 | 3,391,222 | 6,097,669 | 5,620,826 | 11,786,394 |
| Pointe aux Trem | 17 | 1,121 | 4,510,848 | 36,760,743 | 13,751,062 | 52,602,542 |
| Pointe Claire Princeville. | 13 | 694 | 2,696,648 | 8,282,403 | 11,013,821 | 19,411,148 |
| Princevil | 15 | 575 | 1,676,893 | 7,727,696 | 3,543,812 | 11,225,975 |
| Suebec........ | $\begin{array}{r}12 \\ 81 \\ \hline\end{array}$ | $\begin{array}{r}14,696 \\ 4 \\ \hline\end{array}$ | 50,962,007 | 107,252,239 | 106,179,632 | 218,453,875 |
| St. Jean...... | 81 78 | 4,005 4,575 | 11, 16358,828 | $30,703,108$ $34,201,885$ | $24,579,003$ $30,033,106$ | 55, 868,212 |
| St. Jérome. | 69 | 3,391 | 10,496,215 | 20,088,717 | 18,844,913 | - $39,464,371$ |
| St. Lambert | 27 | 987 | 3,206,970 | 6,090,711 | 5,668,013 | 11,815,824 |
| Ste. Marie. | 104 | 18,203 | 89,147,618 | 96,354,222 | 149,550,687 | 247,635,747 |
| St. Michel. | ${ }_{121}$ | 1,050 | 3,033,756 | 7,562,663 | 8,004,017 | 15,662,979 |
| Ste. Thérè | ${ }_{3} 12$ | 1,190 | $10,206,399$ 3,982 | 20,527,111 | 23,508,130 | 45,059,134 |
| Shawinigan | 45 | 5,645 | 26,827, 864 | 53,019,675 | $7,681,133$ $61,343,286$ | 16,034,483 |
| Sherbrooke... | 125 | 7,286 | 23,525,858 | 52,769,846 | 49,037,346 | 103,033,083 |
| Trois Rivières | 89 | 7,981 | 31,782,632 | 59,774,109 | 66,035,085 | 134, 822,735 |
| Verdun... | 47 | 2,985 | 10,046,337 | 22,762,743 | 25,042,039 | 49,241,636 |
| Victoriaville................ | 73 59 | 1,750 | 5,302,904 | 7,768,142 | 9,020,583 | 16,999,955 |
| Westmount............... | 43 | 1,479 | $6,780,531$ $7,885,032$ | $13,534,084$ $12,446,299$ | $\begin{aligned} & 11,1,1291 \\ & 19,286,334 \end{aligned}$ | $\begin{aligned} & 25,250,477 \\ & 31,866,073 \end{aligned}$ |
| Ontario- |  |  |  |  |  |  |
| Acton.................. | 19 | 883 | 3,119,603 | 7,898,677 | 5,320,452 | 13,413,461 |
| Ajax................... | 39 18 | 1,788 | 6,948,357 | 16,618,047 | 13,076,818 | 30,165,228 |
|  | 18 | 907 | 3,234,153 | 3,828,285 | 7,716,823 | 11,735,102 |

5.-Statistics of Manufactures of Municipalities, each with Selling Value of Factory Shipments of $\$ 10,000,000$ or Over and with Three or More Establishments, 1960-continued

| Province and Municipality | Estab-lishments | Employees | Salaries and Wages | Cost at Plant of Materials Used | Value <br> Added by Manufacture | Selling Value of Factory Shipments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | \$ | \$ | \$ | \$ |
| Ontario-concluded |  |  |  |  |  |  |
| Aurora. | 17 | 993 | 3,730,067 | 10,362,987 | 11,676,716 | 22,445,209 |
| Barrie | 43 | 2,068 | 8,159,056 | 19,524,453 | 19,098,769 | 38,476,826 |
| Belleville | 65 | 3,372 | 13,971,381 | 19,458,301 | 30,367,895 | 48,957,924 |
| Brampton | 54 | 2,249 | 8,934,599 | 16,219,557 | 17,424,011 | 34, 296,463 |
| Brantiord. | 171 | 10,118 | 40,089,235 | 78,582,641 | 73,692,897 | 158,762,435 |
| Brockville | 44 | 3,028 | 12,093,345 | 38,647,497 | 27,057,730 | 65,747,043 |
| Burlington | 51 | 1,988 | 7,775,313 | 20,902,157 | 15,894,635 | 37,439,774 |
| Chatham. | 76 | 3,672 | 15,489,006 | 79,197,504 | 33,743,549 | 114,362,956 |
| Cobourg. | 33 | 1,214 | 4,863,128 | 11,489,594 | 16,085,153 | 27,744,022 |
| Collingwood | 25 | 1,535 | 5,032,323 | 9,247,127 | 8,469,593 | 17,965,474 |
| Cornwall. | 54 | 5,043 | 21,937, 673 | 37,102,607 | 42,337,131 | 85,030,551 |
| Dundas | 38 | 1,202 | 4,626,126 | 5,622,868 | 7,282,789 | 12,515,268 |
| Dunnville | 15 | 1,136 | 2,951,034 | 6,900,051 | 5,146,360 | 11,858,289 |
| Elmira. | 22 | 749 | 2,746,300 | 7,581,869 | 6,350,720 | 14,238,723 |
| Fort Erie | 28 | 897 | 3,685,064 | 8,525,561 | 11,073,856 | 19,705,610 |
| Fort William | 66 | 2,696 | 12,811,274 | 28,193,505 | 33,643,683 | 66,656,125 |
| Galt... | 99 | 7,150 | 27,587,525 | 48,888,160 | 53,778,155 | 102,950,395 |
| Gananoque | 16 | 848 | 3,392,970 | 5,795,420 | 5,499,012 | 11,274,491 |
| Georgetow | 24 | 1,365 | 5,786,833 | 11,927,488 | 8, 015,152 | 20,103,781 |
| Guelph. | 113 | 6,456 | 25,393,291 | 44, 287,049 | 47,571,558 |  |
| Hamilton | 534 | 50,850 | 243,415,160 | 494,976,608 | $516,552,881$ $4,590,610$ | $1,031,197,944$ $10,728,554$ |
| Hanover | 24 18 | 1,012 1,168 | $3,014,043$ $3,988,410$ | $6,034,517$ $9,683,321$ | $4,590,610$ $7,561,880$ | $10,728,554$ $16,974,792$ |
| Hespeler | 18 27 | 1,168 | $3,988,410$ $3,564,229$ | $9,683,321$ $12,795,483$ | 7,993,039 | 21,713,232 |
| Kingston | 71 | 5,678 | 24,686,632 | 47,644,783 | 55,836,940 | 107,409,847 |
| Kitchen | 201 | 16,001 | 61,499,418 | 131,026,629 | 109,920,200 | 241,096,659 |
| Leaside. | 48 | 6,725 | 29,412,442 | 54,405,984 | 44,636,705 | 99,780,727 |
| Lindsay | 39 | 1,792 | 5,747,542 | 8,950,234 | 11,143,695 | 20,392,106 |
| London. | 288 | 15,417 | 62,517,813 | 117,030,162 |  | 24, 2358,260 |
| Long Bran | 24 <br> 28 | 1,034 1,257 | $4,239,431$ $3,887,866$ | 10,534, 891 | $11,328,122$ $7,517,764$ | 17,862,639 |
| Midilond | 17 | 1,730 | 3,279,139 | 5,867,679 | 7,030,489 | 13,171,434 |
| Mimico. | 39 | 1,189 | 4,711,551 | $9,384,014$ | 10,081,449 | 19,482,032 |
| Newmarket | 24 | 1,160 | 4,134,159 | 7,565,248 | 7,993,186 | 16,086,602 |
| New Toronto | 37 | 6,817 | 34,409,933 | 92,727,381 | 74,267,593 | 171,621,361 |
| Niagara Falls | 75 | 3,737 | 16,207,057 | 29,401,381 | 30,629,999 | ${ }^{62}, 8853,979$ |
| Orillia. | 58 | 2,329 | 8,317,574 | 11,746,733 | 13,424,101 | 137,479,803 |
| Ottawa | 238 | 9,275 | 37,249,015 | 59,380,796 | 12,247,564 | 23,167,642 |
| Owen So | ${ }_{28}^{51}$ | 2,136 1,140 | $7,342,139$ $3,640,342$ | re,930,518 | 5,698,768 | 12,477,876 |
| Paris | 30 | 1,429 | 4,670,690 | 8,832,032 | 9,522,271 | 18,267,668 |
| Perth | 27 | 863 | 2,583,217 | 4,987,827 | 5,183,029 | 10,021,461 |
| Peterborough | 86 | 8,649 | 41,529,577 | 58,385,321 | 68,998,490 | 130,125,709 |
| Port Arthur. | 59 | 2,392 | 10,929,679 | 23,465,267 | 24,861,599 | ${ }_{34}^{50,100,812}$ |
| Preston. | 47 | 2,738 | 10,066,946 | 18,759,800 | $15,423,757$ $54,942,450$ | $34,369,815$ $106,635,215$ |
| St. Catharin | 136 14 | 7,429 | $33,405,990$ $2,816,366$ | $49,065,455$ $7,260,146$ | - $10,945,582$ | 19,043,843 |
| St. Mary's. | 60 | 2,418 | 9,244,806 | 17,384,930 | 19,836,363 | 38,462,128 |
| Sarnia.... | 47 | 6,897 | 38,519,848 | 204,544,611 | 111,883,639 | 336,773,691 |
| Sault Ste. M | 45 | 8,828 | 47,962,643 | 82,511,803 | 82,591,055 | 170,038,097 |
| Simcoe. | 33 | 1,418 | 5,583,536 | 24,172,200 | 17,685,664 | 42,337,916 |
| Smith's Falls. | 32 | 822 | 2,706,588 | 4,387,864 | 7,584,441 | ${ }_{46}^{12,379,261}$ |
| Stratford. | 74 | 3,305 | 11,548,363 | 25,826,903 | $20,396,511$ $5,958,784$ | - $10,934,389$ |
| Streetsville | 18 | 705 | ${ }_{3}^{2,886,327}$ | 4,675,015 | 6,761,541 | 14, 821, 312 |
| Swansea <br> Thorold | 17 18 | 856 1,464 | $3,947,837$ 6,67810 | 12,848,587 | 12,025,439 | 27,055,820 |
| Tillsonburg | 31 | 1,144 | 3,611,598 | 17,673,586 | 6,185,923 | 24,336,447 |
| Toronto.. | 2,971 | 120,335 | 506,872,752 | 999,132,659 | 851,461, 939 | 1,872,972, ${ }_{25}, 910,892$ |
| Trenton. | 28 | 1,604 | 5,670,870 | 11,214,458 | $14,705,146$ <br> 11 <br> 189 | 20,684,319 |
| Wallaceburg | 28 | 1,767 3,127 | $6,844,197$ $11,997,815$ | $8,138,997$ $22,356,116$ | 44,269,200 | 61,408,591 |
| Waterloo | 68 51 | 3,127 3,958 | 17,236,241 | 48,996,108 | 35,723,806 | 85,545,705 |
| Weston. | 69 | 2,702 | 10,684,418 | 21,256,313 | 17,109,668 | 40,417,583 |
| Windsor | 287 | 22,152 | 112,225,758 | 244,010,059 | 214,719,901 | 467,675,624 |
| Woodstock. . | 62 | 4,113 | 15,932,349 | 41,995,270 | 27,720,820 | 71,399,543 |
| Manitoba- |  |  |  |  |  | 14,131,439 |
| Brandon.... | ${ }_{86}^{41}$ | 5,017 | 21,136,140 | $124,744,591$ | 39,567,291 | 167,756,877 |
| St. Boniface <br> St. James. | 72 | 2,988 | 11,087,441 | 19,603,761 | 20,973,269 | 41,008,810 |
| Winnipeg. | 767 | 24,689 | 87,508,238 | 166,238,709 | 165,509,208 | 334,895,200 |

5.-Statistics of Manufactures of Municipalities, each with Selling Value of Factory Shipments of $\$ 10,000,000$ or Over and with Three or More Establishments, 1960-concluded

| Province and Municipality | Estab lishments | $\underset{\text { Em- }}{\text { Eloyees }}$ | $\begin{aligned} & \text { Salaries } \\ & \text { and } \\ & \text { Wages } \end{aligned}$ | Cost at Plant of Materials Used | Value Added by Manufacture | Selling Value of Factory Shipments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | \$ | s | \$ | 5 |
| Saskatchewan- |  |  |  |  |  |  |
| Mooee Jaw.... | ${ }_{31}^{47}$ | 1,347 | 5,564,694 | 34,629,771 | 12,948, 482 | ${ }_{22}^{48,077,338}$ |
| Prince Albert................. | $\begin{array}{r}31 \\ 133 \\ \hline\end{array}$ | 880 3,671 | $3,405,394$ $15,248,118$ | $\begin{array}{r}13,514,435 \\ 57 \\ \hline\end{array}$ | $8,5888,470$ $\mathbf{3 7}, 455,897$ | ${ }_{99}^{22,236,435}$ |
| Saskatoon. | 141 | 3,555 | 14,386,658 | 61,959,597 | 30,778,142 | 94,416,793 |
| Alberta |  |  |  |  |  |  |
| Calgary.. | 366 | 10,673 | 44,856,584 | 150,452,489 | 93,847,676 | 246,975,621 |
| Edmonton. | 423 | 13,261 | 51,650,995 | 162,107,927 | 100,128,089 | 264,484,111 |
| Lethbridge.............. | ${ }_{43}^{62}$ | 1,338 1,277 | $4,847,760$ $4,751,734$ | 12,252,122 | $13,112,636$ $14,908,967$ | ${ }_{32,973,341}^{24,523,017}$ |
| British Columbia- |  |  |  |  |  |  |
| Kelowna.......... | 34 | 949 | 3,319,069 | 6,959,623 | 5,746,275 | 12,348,191 |
| New Westminster. | 102 | 5,707 | ${ }^{24,784,735}$ | 54,877, 046 | 49,977,873 | 107,294,979 |
| North Vancouver. | 69 | 2,121 | 10,009,467 | 12,372,617 | 18,369,322 | 32,816,643 |
| Port Moody ............ |  | 725 | 3,454,379 | 19,245,290 | 8,633,655 | 30,160,173 |
| Prince George........... |  | 809 | 3,207, 369 | 10,648,718 | 4,814,906 | 15,662,408 |
| Vancouver.............. | 1,189 | $\begin{array}{r}32,059 \\ 3 \\ \hline 850\end{array}$ | $142,578,640$ $16,852,136$ | $275,445,595$ $26,863,203$ | $229,474,007$ $29,704,212$ | $516,525,735$ $57,417,980$ |
| Victoris. | 175 | 3,850 | 16,852,136 | 26,863,203 | 29,704,212 | 57,417,980 |

## PART IV.-FEDERAL AIDS TO DOMESTIC INDUSTRY

The Department of Industry.-In 1963 legislation was introduced into Parliament to establish the Department of Industry. On July 22, 1963, Royal Assent was given to the Department of Industry Act and, with the proclamation on July 25, 1963, the new Department came into existence. Under the Act, the duties, powers and functions of the Minister of Industry are "to include all matters relating to manufacturing industries in Canada over which the Parliament of Canada has jurisdiction, not by law assigned to any other branch or agency of the Government of Canada". The Department 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 the utilization of technological advances within Canadian industry.

The Area Development Agency-part of the Department of Industry-is responsible for undertaking research and investigations into the means of increasing employment and income in designated areas, and the development and carrying out of programs to this end. The Agency administers the various Federal Government incentive measures intended to foster the economic growth of the designated areas.

In October 1963, branches of the Domestic Commerce Service of the Department of Trade and Commerce were incorporated into the Department of Industry. The functions of the Industrial Promotion Branch and the Industrial Design Branch were continued as part of the program of the new Department. The functions of the Small Business Branch were absorbed elsewhere and the special capital cost allowance program for new products came to an end on Dec. 31, 1962, eliminating the need for its administration.

Industrial Promotion.-The industrial promotion activities of the Department of Industry are designed to assist manufacturers and processors to expand operations in Canada. In pursuit of this objective, close liaison is maintained with other federal agencies, with provincial, regional and municipal bodies, and with private development agencies and business organizations and associations. Information on production and market
opportunities within the domestic market is made available to Canadian manufacturers; areas of opportunity for industrial expansion are investigated and import surveys undertaken to obtain information about Canadian market possibilities. In addition, businessmen are provided with information on such matters as licensing arrangement, taxation, tariffs, financing and government rules and regulations.

Product Design.-The National Design Branch of the Department of Industry is the administrative arm of the National Design Council. Jointly, the Council and the Branch have formulated a program and initiated various projects to assist Canadian industry in all areas of design and to create throughout the business community and among the general public a greater awareness of the importance of design in the successful making, marketing and, particularly, export of goods. A national design index illustrating and describing products of superior Canadian design is maintained. This index is a reference catalogue for buyers and the general public and is available in Canada and various centres abroad. National and regional exhibitions are held in co-operation with industry to display products from the index. A design centre, as a permanent place of exhibition and reference, will be opened in the winter of 1963-64.

The Branch organizes seminars and workshops where manufacturers and designers may meet to discuss design and its relevance to particular products and industries. Scholarships and grants for institutional and specialized training in design and for research in industrial design are awarded on a competitive basis and are tenable in Canada and abroad. Studies are conducted to ascertain the present and emergent needs of industry in the design field and the facilities, processes and techniques available to the manufacturer. A national register of practising designers and design consultants has been installed by the Branch so that manufacturers seeking assistance in product development and in packaging may receive expert help. A reference centre, a visual aids library and an information service are being established to cover the whole field of industrial design.

The Economic Council of Canada.-This corporation, in course of being established during the autumn of 1963, by Act of Parliament (SC 1963, c. 11) assented to on Aug. 2, 1963, will consist of a full-time chairman and two full-time directors to hold office for a term not exceeding seven years and not more than 25 other members to be appointed by the Governor in Council for a term of three years and to serve without remuneration except for travelling and living expenses.

The duties of the Council are: "to advise and recommend to the Minister" (President of the Queen's Privy Council for Canada) "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; . . . conduct such studies, inquiries and other undertakings as may be necessary with respect [thereto] ., and .. report to, advise or make recommendations to the Minister with respect thereto, as the circumstances require". In addition, the Council is required under its Act to assume the duties of the former National Productivity Council (whose Act, SC 1960-61, c. 4, is thereby repealed) having to do with "promoting and expediting advances in efficiency of production in all sectors of the economy, [particularly] ... the development of improved production and distribution methods, improved management techniques, the maintenance of good human relations in industry, the use of training programs at all levels of industry, and . retraining programs to meet changing manpower requirements, the extension of industrial research programs in plants and industries
, the dissemination of technical information. .".
For appointments to the Economic Council, up to Nov. 15, 1963, see Register of Official Appointments, Chapter XXVI.

# CHAPTER XV.-GAPITAL EXPENDITURES, CONSTRUCTION AND HOUSING* 

## CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing $p .1$ 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 $\$ 8,738,000,000$ in 1962 , an increase of 6.9 p.c. over the 1961 total of $\$ 8,172,000,000$. The over-all increase resulted from a 9.1-p.c. rise in the purchase of machinery and equipment and a 5.9-p.c. increase in construction expenditures.

Capital outlays in Canada increased each year throughout most of the period after 1946 and reached a peak in 1957. In subsequent years the level of capital spending kept declining slightly until 1962 when it exceeded the previous record of 1957. However, in constant (1957) dollars, the total 1962 capital program was still 7 p.c. below the level of 1957, declines having occurred in volume each year following 1957. A high proportion of Canada's gross national product is still being devoted to the expansion, modernization ${ }^{\circ}$ or renewal of the nation's production facilities, although this proportion has been declining in recent years.

[^196]
## 1.-Capital Expenditures on Construction and on Machinery and Equipment, in Current and Constant (1957) Dollars, 1953-62

Note.-Actual expenditures 1953-61; preliminary actual 1962.

| Year | Capital Expenditures |  |  |  |  |  | Total Expenditure as Percentage of Gross National Product |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Construction |  | Machinery and <br> Equipment |  | Totals |  |  |  |
|  | Current Dollars | $\begin{gathered} \text { Constant } \\ 1957 \\ \text { Dollars } \end{gathered}$ | Current Dollars | Constant 1957 <br> Dollars | Current <br> Dollars | $\begin{gathered} \text { Constant } \\ 1957 \\ \text { Dollars } \end{gathered}$ | Current Dollars | Constant 1957 <br> Dollars |
|  | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 | p.c. | p.c. |
| 1953. | 3,756 | 4,174 | 2,220 | 2,550 | 5,976 | 6,724 | 23.9 | 24.4 |
| 1954. | 3,737 | 4,149 | 1,984 | 2,245 | 5,721 | 6,394 | 23.0 | 23.9 |
| 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 | 26.4 |
| 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 r | 24.4 r |
| 1960. | 5,453 | 5,248 | 2,809 | 2,636 | 8,262 | 7,884 | 22.8 r | 23.1 : |
| 1961. | 5,518 | 5,353 | 2,654 | 2,454 | 8,172 | 7,807 | 21.8 | 22.3 |
| 1962. | 5,842 | 5,506 | 2,896 | 2,607 | 8,738 | 8,113 | 21.6 | 21.8 |

Table 2 shows the extent of the emphasis on housing and non-residential construction in 1962 as compared with the two previous years.

## 2.-Capital Expenditures and Percentage Distribution, by Type, 1960-62

Nore.-Actual expenditures 1960 and 1961; preliminary actual 1962.

| Type | Capital Expenditures |  |  | Distribution |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1960 | 1961 | 1962 | 1960 | 1961 | 1962 |
|  | \$'000,000 | \$'000,000 | \$'000,000 | p.c. | p.c. | p.c. |
| Construction. | 5,453 | 5,518 | 5,842 | 66.0 | 67.5 | 66.9 |
| Housing. ${ }^{\text {a }}$. | 1,456 | 1,467 4,051 | 1,587 4,255 | 17.6 48.4 | 17.9 49.6 | 18.2 48.7 |
| Machinery and Equipment | 2,809 | 2,654 | 2,896 | 34.0 | 32.5 | 33.1 |
| Totals. | 8,262 | 8,172 | 8,738 | 109.0 | 100.0 | 100.0 |

In 1962, capital outlays in the mining industry totalled $\$ 478,000,000$, an increase of $\$ 29,000,000$ over the previous year. A considerable increase in outlays in iron mining facilities in the Quebec-Labrador area only partially offset the substantial decline in expenditure on natural gas processing plants as a result of the near completion in 1961 of the capital program associated with the Alberta-California project for the export of gas.

Expenditures on new manufacturing facilities rose to $\$ 1,231,000,000$, the increase of $\$ 146,000,000$ over 1961 being accounted for mainly by increased outlays by the primary metals industry which rose from $\$ 126,500,000$ to $\$ 212,700,000$. Expenditures by the petroleum and coal products industry were also considerably higher but reduction was experienced by the chemical products industry.

Capital expenditures for utilities-including transportation, communication and storage facilities, and public utilities such as gas, water and electricity-declined from $\$ 1,698,000,000$ in 1961 to $\$ 1,632,700,000$ in 1962. This decrease reflects the completion of major oil and gas pipeline projects in Alberta and British Columbia, only partially offset by higher outlays on telephone systems.


The trade sector of the economy-consisting of wholesale and retail firms and automobile service stations owned by Canada's integrated petroleum companies-made capital outlays of $\$ 304,400,000$ in 1962 , slightly less than in the previous year. A substantial decline among wholesale firms was offset by an increase recorded by department stores; the main strength in the latter originated in increased activities in "discount" department stores, a recent development in retail merchandising.

Institutional services-including hospitals, schools, universities, churches and welfare institutions-recorded an advance of $\$ 191,400,000$ in capital outlays in 1962 over the $\$ 616,400,000$ expended in 1961. Most of the increase was spent on additional school facilities, mainly as a result of the large program of technical school construction being assisted by the Federal Government.

Capital outlays by government departments at all levels increased slightly from $\$ 1,247,100,000$ in 1961 to $\$ 1,309,700,000$ in 1962 . Government departments as defined for capital expenditures purposes include that part of government activity (excluding institutions) generally dependent on tax revenue for financial support as opposed to activities directly producing revenues on a service-rendered basis; one of the major activities of government involving expenditures by federal, provincial and municipal governments is
the road, highway and bridge program. Spending by provincial governments reached $\$ 552,200,000$, an increase of $\$ 60,000,000$ over 1961 , and spending by municipal governments increased by $\$ 21,800,000$ to total $\$ 407,200,400$. On the other hand, the Federal Government spent $\$ 19,300,000$ less than the 1961 total of $\$ 369,600,000$, reflecting in part the implementation of the austerity program.

Capital spending in Canada as a whole in 1962 was 6.9 p.c. higher than in 1961 but there was considerable variation in the spending of the different provinces. Newfoundland experienced an increase of 48.4 p.c. as a result of heavier expenditures by iron mining companies in Labrador; Prince Edward Island, Saskatchewan, Ontario and Quebec recorded increases above the national rate at 13.2 p.c., 12.1 p.c., 9.2 p.c. and 7.9 p.c., respectively; in Manitoba, British Columbia and New Brunswick the increases were more modest at 6.0 p.c., 2.6 p.c. and 0.6 p.c.; and Nova Scotia and Alberta showed declines of 2.7 p.c. and 4.3 p.c., respectively.

## 3.-Summary of Capital and Repair Expenditures, by Economic Sector, 1961 and 1962

Note.-Actual expenditures 1961; preliminary actual 1962.
(Millions of dollars)

| Type of Enterprise and Year | Capital |  |  | Repair |  |  | Capital and Repair |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Con-struction | Machinery and Equipment | Total | Con-struction | Machinery and Equipment | Total | Con-struction |  | Total |
| Agriculture ${ }^{1}$ and fishing..... ${ }_{1962} 1961$ | 168 183 | 408 465 | 576 648 | 65 70 | 141 150 | 206 220 | ${ }_{253}^{233}$ | 549 615 | 782 868 |
| Forestry................... 1961 | 28 28 | 22 25 | 50 53 | 18 16 | 28 30 | 46 46 | 46 | 50 55 | 96 99 |
| Mining, quarrying and oil wells.......................... 1961 1962 | 362 344 | 87 134 | 449 478 | $\stackrel{26}{31}$ | 96 103 | 122 | 388 375 | 183 237 | 571 612 |
| Manufacturing.............. ${ }_{1962} 1961$ | 279 346 | 806 885 | 1,085 1,231 | 124 | 558 588 | 682 710 | 403 | 1,364 1,473 | 1,767 1,941 |
| Utilities........................ 1961 | 1,088 1,013 | 610 620 | 1,698 1,633 | 277 276 | 446 458 | 723 734 | 1,365 1,289 | 1,056 1,078 | 2,421 2,367 |
| Construction................... 1961 | 14 15 | 122 | 136 143 | 4 4 | 134 141 | 138 145 | 18 19 | $\begin{aligned} & 256 \\ & 269 \end{aligned}$ | 274 288 |
| $\text { Housing. . . . ...................... }{ }_{1962}^{1961}$ | 1,467 1,587 | - | 1,467 1,587 | 484 513 | 二 | 484 | 1,951 2,100 | 二 | 1,951 2,100 |
| Trade (wholesale and retail).. ${ }_{1962}^{1961}$ | 127 122 | 180 183 | 307 305 | 39 35 | 40 38 | 79 73 | 166 157 | 220 221 | 386 378 |
| Finance, insurance and real estate. ....................... 1961 | 268 | $\begin{aligned} & 44 \\ & 48 \end{aligned}$ | 312 308 | 17 18 | 4 5 | 21 23 | $\begin{aligned} & 285 \\ & 278 \end{aligned}$ | 48 53 | 333 331 |
| Commercial services.......... ${ }_{1962} 1961$ | 56 62 | $\begin{aligned} & 172 \\ & 172 \end{aligned}$ | 228 | 14 10 | $\begin{aligned} & 48 \\ & 48 \end{aligned}$ | 62 58 | 70 72 | 220 220 | ${ }_{292}^{290}$ |
| Institutional services.......... ${ }_{1962}^{1961}$ | 536 701 | 81 107 | 617 808 | $\begin{aligned} & 64 \\ & 63 \end{aligned}$ | 14 14 | 78 77 | $\begin{aligned} & 600 \\ & 764 \end{aligned}$ | 95 121 | 695 885 |
| Government departments.... ${ }_{1962} 1961$ | $\begin{aligned} & 1,125 \\ & 1,181 \end{aligned}$ | $\begin{aligned} & 122 \\ & 129 \end{aligned}$ | $\begin{aligned} & 1,247 \\ & 1,310 \end{aligned}$ | $\begin{aligned} & 323 \\ & 326 \end{aligned}$ | $\begin{aligned} & 57 \\ & 56 \end{aligned}$ | 380 382 | $\begin{aligned} & 1,448 \\ & 1,507 \end{aligned}$ | $\begin{aligned} & 179 \\ & 185 \end{aligned}$ | $\begin{aligned} & 1,627 \\ & 1,692 \end{aligned}$ |
| Totals. ................ 1961 | $\begin{aligned} & \mathbf{5 , 5 1 8} \\ & \mathbf{5 , 8 4 2} \end{aligned}$ | $\underset{\mathbf{2 , 6 9 6}}{\mathbf{2 , 6 5 4}}$ | $\begin{aligned} & 8,172 \\ & 8,738 \end{aligned}$ | $\begin{aligned} & \mathbf{1 , 4 5 5} \\ & \mathbf{1 , 4 8 4} \end{aligned}$ | 1,566 | $\mathbf{3 , 0 2 1}$ $\mathbf{3 , 1 1 5}$ | 6,973 | $\begin{aligned} & \mathbf{4 , 2 2 0} \\ & \mathbf{4 , 5 2 7} \end{aligned}$ | $\begin{aligned} & \mathbf{1 1 , 1 9 3} \\ & 11,853 \end{aligned}$ |

${ }^{1}$ Estimates for agriculture have been revised on the basis of the 1958 Farm Income and Expenditure Survey and the 1961 Census of Agriculture, and are not comparable with data for years prior to 1961.

Details of some of the above economic sectors are given in Table 4. 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.
4.-Capital and Repair Expenditures for Certain Economic Sectors, 1961 and 1962

Note.-Actual expenditures 1961; preliminary actual 1962.
(Millions of dollars)

| Type of Enterprise and Year | Capital |  |  | Repair |  |  | Capital and Repair |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Con-struction | Machinery and Equipment | Total | Con-struction | Ma- chinery and Equip- ment | Total | Con- struc- tion | Ma- chinery and Equip- ment | Total |
|  | Manufacturing |  |  |  |  |  |  |  |  |
| $\text { Foods and beverages. ........ }{ }_{1962}^{1961}$ | 58.1 |   <br> 106.9  <br> 98.2 165.0 <br> 153.4  |  | $\begin{aligned} & 14.1 \\ & 14.7 \end{aligned}$ | $\begin{aligned} & 61.7 \\ & 59.1 \end{aligned}$ | 75.873.8 | 72.269.9 | $\begin{aligned} & 168.6 \\ & 157.3 \end{aligned}$ | $\begin{aligned} & 240.8 \\ & 227.2 \end{aligned}$ |
|  | 55.2 |  |  |  |  |  |  |  |  |
| Tobacco products........... ${ }_{1962}^{1961}$ | 1.70.4 | 6.44.4 | 8.14.8 | 1.30.5 | 3.2 | 4.42.7 | 3.0 | 9.6 | 12.5 |
|  |  |  |  |  |  |  | 0.9 |  | 7.5 |
| Rubber................... ${ }_{1962}^{1961}$ | 2.61.7 | 13.817.3 | $\begin{aligned} & 16.4 \\ & 19.0 \end{aligned}$ | 0.90.9 | 8.37.8 | 9.28.7 | 3.52.6 | 22.125.1 | 25.627.7 |
|  |  |  |  |  |  |  |  |  |  |
| Leather..................... ${ }_{1962} 1961$ | 0.60.6 | 3.23.1 | $\begin{aligned} & 3.8 \\ & 3.7 \end{aligned}$ | 0.60.6 | 2.62.7 | 3.23.3 | 1.21.2 | 5.85.8 | 7.07.0 |
|  |  |  |  |  |  |  |  |  |  |
| Textile..................... ${ }_{1962}^{1961}$ | 5.56.5 | $\begin{aligned} & 22.0 \\ & 29.6 \end{aligned}$ | $\begin{aligned} & 27.5 \\ & 36.1 \end{aligned}$ | 3.83.9 | $\begin{aligned} & 20.3 \\ & 21.7 \end{aligned}$ | $\begin{aligned} & 24.1 \\ & 25.6 \end{aligned}$ | 9.310.4 | $\begin{aligned} & 42.3 \\ & 51.3 \end{aligned}$ | 51.661.7 |
|  |  |  |  |  |  |  |  |  |  |
| Clothing and knitting mills... ${ }_{1962}^{1961}$ | 3.01.9 | $\begin{aligned} & 10.2 \\ & 11.7 \end{aligned}$ | $\begin{aligned} & 13.2 \\ & 13.6 \end{aligned}$ | 1.11.5 | 4.44.8 | 6.3 | 3.4 | 16.5 | 19.9 |
|  |  |  |  |  |  |  |  |  |  |
| Wood........................... 1961 | $\begin{aligned} & 13.6 \\ & 10 \end{aligned}$ | $\begin{aligned} & 31.0 \\ & 25.5 \end{aligned}$ | $\begin{aligned} & 44.6 \\ & 35.9 \end{aligned}$ | 5.85.7 | 29.631.0 | 35.436.7 | 19.416.1 | 60.656.5 | 80.072.6 |
|  |  |  |  |  |  |  |  |  |  |
| Furniture and fixtures....... ${ }_{1962}$ | 1.21.9 | 3.53.9 | 4.75.8 | 1.01.1 | 2.42.4 | 3.4 | 2.23.0 | 5.96.3 | 8.19.3 |
|  |  |  |  |  |  |  |  |  |  |
| Paper and allied industries. ${ }^{1961} 1962$ | 37.139.2 | 123.9125.3 | 161.0164.5 | 9.210.7 | 101.8107.2 | 111.0 | $\begin{aligned} & 46.3 \\ & 49.9 \end{aligned}$ | 225.7232.5 | 272.0282.4 |
|  |  |  |  |  |  | 117.9 |  |  |  |
| Printing, publishing andallied industries...........19611962 | $\begin{array}{r} 6.4 \\ 11.9 \end{array}$ | $\begin{aligned} & 24.3 \\ & 25.3 \end{aligned}$ | $\begin{aligned} & 30.7 \\ & 37.2 \end{aligned}$ | 2.52.3 | 7.27.1 | $\begin{aligned} & 9.7 \\ & 9.4 \end{aligned}$ | 8.914.2 | $\begin{aligned} & 31.5 \\ & 32.4 \end{aligned}$ | 40.446.6 |
|  |  |  |  |  |  |  |  |  |  |
| Primary metals. .............. ${ }_{1962}^{1961}$ | $\begin{aligned} & 32.9 \\ & 65.8 \end{aligned}$ | $\begin{array}{r} 93.6 \\ 146.9 \end{array}$ | $\begin{aligned} & 126.5 \\ & 212.7 \end{aligned}$ | $\begin{aligned} & 19.1 \\ & 16.9 \end{aligned}$ | $\begin{aligned} & 135.0 \\ & 150.6 \end{aligned}$ | $\begin{aligned} & 154.1 \\ & 167.5 \end{aligned}$ | $\begin{aligned} & 52.0 \\ & 82.7 \end{aligned}$ | $\begin{aligned} & 228.6 \\ & 297.5 \end{aligned}$ | $\begin{aligned} & 280.6 \\ & 380.2 \end{aligned}$ |
|  |  |  |  |  |  |  |  |  |  |
| Metal fabricating. ............ 1961 | $\begin{array}{r} 8.4 \\ 11.2 \end{array}$ | $\begin{aligned} & 29.3 \\ & 34.6 \end{aligned}$ | $\begin{aligned} & 37.7 \\ & 45.8 \end{aligned}$ | 5.25.5 | $\begin{aligned} & 23.9 \\ & 26.6 \end{aligned}$ | $\begin{aligned} & 29.1 \\ & 32.1 \end{aligned}$ | $\begin{aligned} & 13.6 \\ & 16.7 \end{aligned}$ | $\begin{aligned} & 53.2 \\ & 61.2 \end{aligned}$ | $\begin{aligned} & 66.8 \\ & 77.9 \end{aligned}$ |
|  |  |  |  |  |  |  |  |  |  |
| Machinery..................... 1961 | 5.54.4 | $\begin{aligned} & 16.7 \\ & 14.2 \end{aligned}$ | $\begin{aligned} & 22.2 \\ & 18.6 \end{aligned}$ | $\begin{aligned} & 2.9 \\ & 2.6 \end{aligned}$ | $\begin{aligned} & 8.7 \\ & 9.1 \end{aligned}$ | $\begin{aligned} & 11.6 \\ & 11.7 \end{aligned}$ | 8.4 | $\begin{aligned} & 25.4 \\ & 23.3 \end{aligned}$ | $\begin{aligned} & 33.8 \\ & 30.3 \end{aligned}$ |
|  |  |  |  |  |  |  |  |  |  |
| Transportation equipment.... 1961 | $\begin{aligned} & 13.9 \\ & 11.0 \end{aligned}$ | $\begin{aligned} & 33.2 \\ & 34.2 \end{aligned}$ | 47.145.2 | $\begin{array}{r} 10.5 \\ 9.9 \end{array}$ | $\begin{aligned} & 30.2 \\ & 33.4 \end{aligned}$ | $\begin{aligned} & 40.7 \\ & 43.3 \end{aligned}$ | $\begin{aligned} & 24.4 \\ & 20.9 \end{aligned}$ | $\begin{aligned} & 63.4 \\ & 67.6 \end{aligned}$ | $\begin{aligned} & 87.8 \\ & 88.5 \end{aligned}$ |
|  |  |  |  |  |  |  |  |  |  |
| Electrical products............ 1961 | $\begin{array}{r} 7.8 \\ 10.3 \end{array}$ | $\begin{aligned} & 22.4 \\ & 28.1 \end{aligned}$ | 30.238.4 | 3.23.9 | 16.318.1 | 19.522.0 | $\begin{aligned} & 11.0 \\ & 14.2 \end{aligned}$ | 38.746.2 | 49.760.4 |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| Non-metallic mineral <br> products...................... ${ }_{1962}^{1961}$ | 11.9 10.4 | $32.8$ | 44.7 44.7 | 4.2 | 42.0 44.3 | 46.2 48.6 | 16.1 | 74.8 | 90.9 |
| Petroleum and coal products. ${ }_{1962}^{1961}$ | $\begin{aligned} & 27.9 \\ & 49.7 \end{aligned}$ | 4.09.0 | $\begin{aligned} & 31.9 \\ & 58.7 \end{aligned}$ | 26.126.1 | 4.43.8 | $\begin{aligned} & 30.5 \\ & 29.9 \end{aligned}$ | 54.075.8 | 8.412.8 | 62.488.6 |
|  |  |  |  |  |  |  |  |  |  |
| $\begin{array}{rr}\text { Chemical and chemical } \\ \text { products....................... } \\ 1961 \\ & 1962\end{array}$ |  |  |  |  |  |  |  |  |  |
|  | $\begin{aligned} & 35.4 \\ & 45.6 \end{aligned}$ | 90.353.5 | 125.799.1 | $\begin{array}{r} 10.4 \\ 9.1 \end{array}$ | 49.7 | 60.1 | 45.8 | 140.0 | 185.8 |
|  |  |  |  |  | 49.1 | 58.2 | 54.7 | 102.6 | 157.3 |
| Miscellaneous................ . 1961 | 5.6 | 14.2 | 19.8 | 2.1 | 6.3 | 8.4 | 7.7 | 20.5 | 28.2 |
| Copital items 1962 | 7.8 | 18.8 | 26.6 | 1.9 | 6.8 | 8.7 | 9.7 | 25.6 | 35.3 |
| Capital items charged to operating expenses.......... 1961 | - | 124.0 167.6 | 124.0 | - | - | - | - | 124.0 | 124.0 |
| Totals, Manufacturing. . 1961 | 279.1 | 805.7 | 1,084.8 | 124.0 | 557.9 | 681.9 | 403.1 | 1,363.6 |  |
| 1962 | 345.9 | 885.5 | 1,231.4 | 122.1 | 587.8 | 709.9 | 468.0 | 1,473.3 | 1,941.3 |

4.-Capital and Repair Expenditures for Certain Economic Sectors, 1961 and 1962-continued


4.-Capital and Repair Expenditures for Certain Economic Sectors, 1961 and 1962-concluded


A summary of the capital expenditures in each province for the years 1961 and 1962 is given in Table 5. 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.

## 5.-Capital and Repair Expenditures, by Province, 1961 and 1962

Note.-Actual expenditures 1961; preliminary actual 1962. (Millions of dollars)

| Province and Year | Capital |  |  | Repair |  |  | Capital and Repair |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Con-struction |  | Total | Con-struction | Machinery and Equipment | Total | Con-struction | Machinery and Equipment | Total |
| Newfoundland............... 1961 | 144 | 40 | 184 | 25 | 20 | 45 | 169 | 60 | 229 |
| 1962 | 185 | 88 | 273 | 27 | 20 | 47 | 212 | 108 | 320 |
| Prince Edward Island. . . . . ${ }_{1962}^{1961}$ | 25 29 | 13 14 | 38 43 | 7 | 5 | 12 | 32 36 | 18 19 | 50 55 |
| Nova Scotia................. 1961 | 151 | 73 | 224 | 54 | 38 | 92 | 205 | 111 | 316 |
| 1962 | 150 | 68 | 218 | 52 | 37 | 89 | 202 | 105 | 307 |
| New Brunswick. . . . . . . . . . 1961 | 115 | 56 | 171 | 41 | 36 | 77 | 156 | 92 | 248 |
| 1962 | 111 | 61 | 172 | 42 | 36 | 78 | 153 | 97 | 250 |
| Quebec....................... 1961 | 1,386 | 622 | 2,008 | 347 | 389 | 736 | 1,733 | 1,011 | 2,744 |
| 1962 | 1,504 | 663 | 2,167 | 369 | 410 | 779 | 1,873 | 1,073 | 2,946 |
| Ontario....................... 1961 | 1,794 | 1,000 | 2,794 | 501 | 594 | 1,095 | 2,295 | 1,594 | 3,889 |
| $1962$ | 1,980 | 1,071 | 3,051 | 512 | 614 | 1,126 | 2,492 | 1,685 | 4,177 |

5.-Capital and Repair Expenditures, by Province, 1961 and 1962-concluded

| Province 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 |
| Manitoba........................ ${ }_{1962} 1961$ | 283 289 | 134 153 | 417 | 86 82 | $\begin{aligned} & 82 \\ & 89 \end{aligned}$ | 168 171 | 369 371 | 246 | 585 613 |
| Saskatchewan................... 1961 | 302 322 | $\begin{aligned} & 152 \\ & 187 \end{aligned}$ | 454 509 | 81 82 | $\begin{aligned} & 86 \\ & 90 \end{aligned}$ | 167 172 | 383 404 | $\begin{gathered} 238 \\ 277 \end{gathered}$ | 621 |
| Alberta......................... 1961 | 722 | $\begin{aligned} & 259 \\ & 277 \end{aligned}$ | $\begin{aligned} & 981 \\ & 939 \end{aligned}$ | 155 150 | 134 143 | 289 293 | 877 812 | $\begin{aligned} & 393 \\ & 420 \end{aligned}$ | 1,270 1,232 |
| British Columbia.............. ${ }_{1962}^{1961}$ | $\begin{aligned} & 596 \\ & 610 \end{aligned}$ | $\begin{aligned} & 305 \\ & 314 \end{aligned}$ | 901 924 | 158 161 | $\begin{aligned} & 182 \\ & 187 \end{aligned}$ | 340 348 | 754 771 | $\begin{aligned} & 487 \\ & 501 \end{aligned}$ | 1,241 1,272 |
| Totals. . . . . . . . . . . ........ 1961 | $\begin{aligned} & \mathbf{5 , 5 1 8} \\ & \mathbf{5 , 8 4 2} \end{aligned}$ | $\begin{aligned} & \stackrel{2,654}{2,896} \end{aligned}$ | $\begin{aligned} & \mathbf{8 , 1 7 2} \\ & 8,738 \end{aligned}$ | 1,455 | $\begin{aligned} & \mathbf{1 , 5 6 6} \\ & \mathbf{1 , 6 3 1} \end{aligned}$ | $\mathbf{3 , 0 2 1}$ $\mathbf{3 , 1 1 5}$ | $\begin{aligned} & \mathbf{6 , 9 7 3} \\ & \mathbf{7 , 3 2 6} \end{aligned}$ | $\begin{aligned} & \mathbf{4 , 2 2 0} \\ & \mathbf{4}, 527 \end{aligned}$ | $\begin{aligned} & \mathbf{1 1 , 1 9 3} \\ & 11,853 \end{aligned}$ |

## 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 which 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.

Canada's construction program for 1962 is estimated at $\$ 7,329,000,000$, an increase of 5.1 p.c. over 1961. Repair construction is estimated to be about $\$ 32,000,000$ higher than in 1961, and the value of new construction higher by about $\$ 323,000,000$.
6.-Value of New and Repair Construction Work Performed, 1953-62

Noтe.-Actual expenditures 1953-61; preliminary actual 1962.

| Year | New | Repair | Total | Total Construction as Percentage of Gross National Product |
| :---: | :---: | :---: | :---: | :---: |
|  | \$'000,000 | \$'000,000 | \$'000,000 | p.c. |
| 1953. | 3,756 | 1,070 | 4,826 | 19.3 |
| 1954. | 3,737 | 1,105 | 4,842 | 19.5 |
| 1955. | 4,167 | 1,141 | 5,308 | 19.6 |
| 1956 | 5,272 | 1,182 | 6,454 | 21.1 |
| 1957. | 5,785 | 1,238 | 7,023 | 22.0 |
| 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 ${ }^{\text {r }}$ |
| 1961 | 5,518 | 1,456 | 6,974 | 18.6 |
| 1962 | 5,841 | 1,488 | 7,329 | 18.1 |

Table 7, which compares contract construction with other construction, shows that contractors account for from 74 p.c. to 77 p.c. of the work performed each year.

[^197]
## 7.-Value of Construction Work Performed, by Contractors and Others, 1959-62

Note.-Actual expenditures 1959-61; preliminary actual 1962.
(Millions of dollars)

| Item | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: |
| Contract Construction. | 5,269 | 5,183 | 5,347 | 5,696 |
| New. | 4,685 | 4,506 | 4,621 | 4,904 |
| Repair | 584 | 677 | 726 | 792 |
| Other Construction ${ }^{1}$ | 1,808 | 1,703 | 1,627 | 1,633 |
| New.. | 1,025 | 948 | 897 | 937 |
| Repair. | 783 | 755 | 730 | 696 |
| Totals, Construction | 7,077 | 6,886 | 6,974 | 7,329 |
| New. | 5,710 | 5,454 | 5,518 | 5,841 |
| Repair | 1,367 | 1,432 | 1,456 | 1,488 |

[^198]
## 8.-Value and Percentage Distribution of Construction Work Performed, by Principal Type, 1959-62

Note.-Actual expenditures 1959-61; preliminary actual 1962.
(Millions of dollars)

|  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |

Table 9 gives estimates of total expenditures in Canada on each type of construction for which information is available.

## 9.-Value of Construction Work Performed, by Type of Structure, 1961 and 1962

Note.-Actual expenditures 1961; preliminary actual 1962.

| Type of Structure | 1961 |  |  | 1962 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | New | Repair | Total | New | Repair | Total |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Building Construction |  |  |  |  |  |  |
| Residential. | 1,467,000 | 484,000 | 1,951,000 | 1,587,000 | 513,000 | 2,100,000 |
| Industrial. Factories. plants, workshops, food | 294,303 | 116,565 | 410,868 | 370,283 | 122,394 | 492,676 |
| canneries...................... | 227,53450,331 | 91,3607,245 | 318,89457,576 | 278,64472,314 | $\begin{aligned} & 93,795 \\ & 10,438 \end{aligned}$ | $\begin{array}{r} 372,439 \\ 82,752 \end{array}$ |
| Mine and mine mill buildings..... |  |  |  |  |  |  |
| Railway stations, offices, roadway buildings | 11,236 | 11,668 | 22,904 | 11,241 | 11,598 | 22,839 |
| Railway shops, engine houses, water and fuel stations......... | 5,202 | 6,292 | 11,494 | 8,083 | 6,563 | 14,646 |
| Commercial. | 637,305 | 117,354 | 754,659 | 623,701 | 109,599 | 733,300 |
| Warehouses, storehouses, refrigerated storage, etc. Grain elevators. | 52,924 | 12,317 | 65,241 | 47,570 | 11,982 | 59,552 |
|  | Grain elevators............................. 21,357 6,744 28,101 23,957 5,205 29,162 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| Office buildings. | $\begin{array}{r}33,876 \\ 311,504 \\ \hline\end{array}$ | 40,373 | 351,877 | 32,554 284,865 | 9,569 41,364 | 42,123 326,229 |
| Stores, retail and wholesale. | 136,23734,877 | 28,520 | 164,757 | 149,97031,994 | 25,8118,850 | 175,78140,844 |
| Garages and service stations.... |  | 9,192 | 44,069 |  |  |  |
| Theatres, arenas, amusement and recreational buildings. <br> Laundries and dry-cleaning estab | 44,824 | 6,592 | 51,416 | 51,836 | 5,836 | 57,672 |
| Laundries and dry-cleaning estab- | 1,706 | 924 | 2,630 | 955 | 982 | 1,937 |
| Institutional............................ buildings. | 570,415 | 76,641 | 647,056 | 734,500 | 75,340 | 809,840 |
|  | 322,239 | 38,729 | 360,968 | 486,285 | 39,183 | 525,468 |
| Churches and other religious buildings. | 59,821 | 8,884 | 68,705 | 53,515 | 6,547 | 60,062 |
| Hospitals, sanatoria, clinics, firstaid stations, etc | $\begin{array}{r} 159,192 \\ 29,163 \end{array}$ | $\begin{array}{r} 20,190 \\ 8,838 \end{array}$ | $\begin{array}{r} 179,382 \\ 38,001 \end{array}$ | $\begin{array}{r} 164,356 \\ 30,344 \end{array}$ | $\begin{array}{r} 20,257 \\ 9,353 \end{array}$ | $\begin{array}{r} 184,613 \\ 39,697 \end{array}$ |
| Other institutional buildings. |  |  |  |  |  |  |
|  | 288,685 | 90,902 | 379,587 | 292,847 | 95,987 | 388,834 |
|  | 152,951 | 58,788 | 211,739 | 165,828 | 63,424 | 229, 252 |
| Broadcasting, radio and television, relay and booster stations, telephone exchanges. |  | $\begin{aligned} & 3,616 \\ & 3,480 \end{aligned}$ | $\begin{gathered} 69,464 \\ 8,633 \end{gathered}$ | $\begin{array}{r} 59,966 \\ 3,984 \end{array}$ | 3,4913,417 | 63,4577,401 |
| Aeroplane hangars............... | $\begin{array}{r} 65,848 \\ 5,153 \end{array}$ |  |  |  |  |  |
| Passenger terminals, bus, boat or air. | 22,406 | 423 | 22,829 | 20,563 | 1,591 | 22,154 |
| Armouries, barracks, drill halls, etc. | 10,145 | 14,153 | 24,298 | 9,221 | 13,386 | 22,607 |
| Bunkhouses, dormitories, camp cookeries, bush depots and camps | $\begin{aligned} & 12,263 \\ & 19,919 \end{aligned}$ | $\begin{aligned} & 3,969 \\ & 6,473 \end{aligned}$ | $\begin{aligned} & 16,232 \\ & 26,392 \end{aligned}$ | $\begin{aligned} & 13,849 \\ & 19,436 \end{aligned}$ | $\begin{aligned} & 3,972 \\ & 6,706 \end{aligned}$ | $\begin{aligned} & 17,821 \\ & 26,142 \end{aligned}$ |
| Miscellaneous...................... |  |  |  |  |  |  |
| Totals, Building Construction. . | 3,257,708 | 885,462 | 4,143,170 | 3,608,330 | 916,320 | 4,524,650 |
| Engineering Construction |  |  |  |  |  |  |
| Marine. | 104,347 | 16,496 | 120,843 | 74,908 | 15,870 | 90,778 |
| Docks, wharves, piers, breakwaters. | 69,732 | 7,348 | 77,080 | 50,574 | 7,052 | 57,626 |
| Retaining walls, embankments, riprapping |  | 9291,504 | 2,29210,470 | 1,6822,829 | 8341,189 | 2,5164,018 |
| Canals and waterways............ | 8,966 |  |  |  |  |  |
| Dredging and pile drivin | 19,134 | 4,794 | 23, ${ }^{1} 028$ | 16,489 | 4,710 | 21,199 |
| Dyke construction. |  | 167 | 1,081 | 759 | 158 | ${ }_{843}^{917}$ |
| Logging booms. | 3373,901 | 6281,126 | 19655,027 | 306 2,269 | 537 1.390 | 8433,659 |
| Other. |  |  |  | 2,269 | 1,390 |  |
| Road, Highway and Aerodrome.. Hard surfaced or paved streets, highways, parking lots, etc. Gravel or stone streets, highways, roads, parking lots, etc........... | $\begin{aligned} & \mathbf{5 5 6 , 9 4 1} \\ & 358,595 \\ & 111,910 \end{aligned}$ | 193,229 | 750,170 | 597,736 | 195,393 | 793,129 |
|  |  | 103,143 | 461,738 | 387,567 | 106,324 | 493,891 |
|  |  | 58,486 | 170,396 | 117,053 | 54,964 | 172,017 |

9.-Value of Construction Work Performed, by Type of Structure, 1961 and 1962-concluded

| Type of Structure | 1961 |  |  | 1962 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | New | Repair | Total | New | Repair | Total |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Engineering Construction -concluded |  |  |  |  |  |  |
| Road, Highway and Aerodrome - concluded |  |  |  |  |  |  |
| Dirt, clay or other streets, roads, parking lots, etc. | 29,444 | 9,783 | 39,227 | 32,295 | 9,614 | 41,909 |
| Grading, scraping, oiling, filling... | 14,520 | 13,015 | 27, 535 | 19,695 | 15,799 | 35,494 |
| Sidewalks, paths............... | 15,844 | 6,431 | 22,275 | 16,728 | 6,362 | 23,090 |
| Aerodromes, landing fields, runways, tarmac. | 26,628 | 2,371 | 28,999 | 24,398 | 2,330 | 26,728 |
| Waterworks and Sewage Systems. | 186,021 | 37,131 | 223,152 | 191,081 | 40,473 | 231,554 |
| Tile drains, drainage ditches, storm sewers. | 4,095 | 2,987 | 7,082 | 4,717 | 3,411 | 8,128 |
| Water mains, hydrants and services. | 59,386 | 17,648 | 77,034 | 57,329 | 17,492 | 74,821 |
| Sewage systems and connections.. | 109,805 | 12,880 | 122,685 | 114,086 | 12,818 | 126,904 |
| Pumping stations, water.......... | 10,728 | 3,388 | 14,116 | 13,703 | 3,132 | 16,835 |
| Water storage tanks.... | 2,007 | 228 | 2,235 | 1,246 | 3,620 | 4,866 |
| Dams and Irrigation | 71,379 | 6,972 | 78,351 | 104,256 | 7,387 | 111,643 |
| Dams and reservoirs. . | 57,055 | 2,963 | 60,018 | 87,826 | 3,183 | 91,009 |
| Irrigation and land reclamation projects. | 14,324 | 4,009 | 18,333 | 16,430 | 4,204 | 20,634 |
| Flectric Power | 354,087 | 57,294 | 411,381 | 396,642 | 58,697 | 455,339 |
| Electric power generating plants, including water conveying and controlling structures. | 183,053 | 14,068 | 197,121 | 190,260 | 11,586 | 201,846 |
| Electric transformer stations...... | 26,345 | 6,892 | 33,237 | 34,523 | 7,169 | 41,692 |
| Power transmission and distribution lines, trolley wires. | 129,591 | 30,263 | 159,854 | 159,605 | 33,749 | 193,354 |
| Street lighting.................... | 15,098 | 6,071 | 21,169 | 12,254 | 6,193 | 18,447 |
| Rallway, Telephone and Telegraph............................. Railway tracks and roadbed...... Signals and interlockers | 231,789 | 152,234 | 384,023 | 225,350 | 148,449 | 373,799 |
|  | 122,161 | 109,410 | 231,571 | 103,279 | 104,122 | 207,401 |
|  | 8,703 | 7,401 | 16,104 | 6,240 | 7,503 | 13,743 |
| Selegraph and telephone lines, underground and marine cables. | 100,925 | 25,423 | 136,348 | 115,831 | 36,824 | 152,655 |
| Gas and Oil Facilities............. | 472,074 | 47,452 | 519,526 | 368,780 | 50,514 | 419,294 |
|  | 50,637 | 5,905 | 56,542 | 60,090 | 5,324 | 65,414 |
| Pumping stations, oil. | 2,104 | 1,124 | 3,228 | 4,121 | 1,358 | 5,479 |
| Pumping stations, gas | 13,655 | 118 | 13,773 | 22,990 | 414 | 23,404 |
| Oil storage tanks. . | 17,991 | 2,783 | 20,774 | 15,987 | 2,978 | 18,965 |
| Gas storage tanks. | . 894 | 15 | 409 | ${ }_{4} 431$ | , 28 | +459 |
| Oil pipelines. | 41,121 | 1,836 | 42,957 | 14,282 | 2,469 | 16,751 |
| Gas pipelines | 94,210 | 1,050 | 95,260 | 22,805 | 1,112 | 23,917 |
| Oil wells. | 115,294 | 5,853 | 121,147 | 119,654 | 7,976 | 127,630 |
| Gas wells.. | 44,868 | 1,554 | 46,422 | 37,938 | 1,341 | 39,279 |
| Oil refinery-processing units...... | 24, 260 | 23,969 | 48,229 | 42,927 | 25,072 | 67,999 |
| Natural gas cleaning plants........ | 67,040 | 3,245 | 70,285 | 27,555 | 2,442 | 29,997 |
| Other Engineering. <br> Bridges, trestles, culverts, overpasses, viaducts. <br> Tunnels and subways | 283,944 | 59,819 | 343,763 | 274,380 | 54,579 | 328,959 |
|  | 181,412 | 26,154 | 207,566 | 172,821 | 24,804 | 197,625 |
|  | 18,941 | 320 | 19,261 | 21,019 | 308 | 21,327 |
| Incinerators <br> Park systems, landscaping, sodding, etc. | 352 | 51 | 403 | 301 | 49 | 350 |
|  | 5,916 | 4,461 | 10,377 | 6,227 | 5,166 | 11,393 |
| Swimming pools, tennis courts, outdoor recreation facilities. Mine shafts and other below surface workings. | 4,684 | 1,578 | 6,262 | 4,400 | 1,540 | 5,940 |
|  | 28,476 | 3,345 | 31,821 | 22,956 | 1,918 | 24,874 |
| Fences, snowsheds, signs, guardrails. <br> Miscellaneous. |  |  |  | 14,132 | 10,563 | 24,695 |
|  | 29,695 | 13,631 | 43,326 | 32,524 | 10,231 | 42,755 |
| Totals, Engineering Construction. | 2,260,582 | 570,627 | 2,831,209 | 2,233,133 | 571,362 | 2,804,495 |
| Totals, All Construction. | 5,518,290 | 1,456,089 | 6,974,379 | 5,841,463 | 1,487,682 | 7,329,145 |

Principal statistics of the construction industry are shown by province and for contractors, utilities, governments and others in Table 10. 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.

## 10.-Labour Content, Cost of Materials and Value of Work Performed in Construction, by Province and by Employer, 1961 and 1962 with Totals for 1958-62

Noтe.-Actual expenditures 1958-61; preliminary actual 1962. Comparable figures from 1953 are given in the corresponding table of previous Year Books beginning with the 1957-58 edition.


## 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 so 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.

## 11.-Value of Construction Contracts Awarded, 1939-62

(Sovrce: MacLean Building Guide)
Note.-Figures for the years 1926-38 are given in the corresponding table of the 1962 Year Book, p. 682.

| Year | Value of Construction Contracts | Year | Value of Construction Contracts | Year | Value of Construction Contracts |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ |  | \$ |  | \$ |
| 1939. | 187,178,500 | 1947. | 718,137,100 | 1955.. | 3,183,592,000 |
| 1940.. | 346,009,800 | 1948. | 954,082,400 | 1956. | 3,426,905,500 |
| 1941... | 393,991, 300 | 19491................ | 1,143,547,300 | 1957. | 2,894,168,100 |
| 1942. | 281,594,100 | 1950. | 1,525,764,700 | 1958. | 3,593,709,200 |
| 1943... | 206, 103,900 | 1951. | 2,295,499,200 | 1959. | 3,219,073,300 |
| 1944.. | 291,961,800 | 1952. | 1,812,177,600 | 1960.. | 3,053,749,500 |
| 1945... | 409,032,700 | 1953................. | 2,017,060,700 | 1961. | 3,220,937,300 |
| 1946.... | 663,355,100 | 1954. | 2,154,959,200 | 1962. | 3,351,717,500 |

${ }^{1}$ Newfoundland included from Apr. 1, 1949.

## 12.-Value of Construction Contracts Awarded, by Province and Type of Construction, 1961 and 1962

(Source: MacLean Building Guide)

| Province <br> and Type of Construction | 1961 | 1962 | Type of Construction | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 8'000 | \$'000 |  | \$'000 | \$'000 |
| Newfoundland | 147,688 | 43,823 | Business. | 1,090,518 | 1,285,934 |
| Nova Scotia. | -83,012 | 75,009 | Public garages | 12,366 | 12,088 |
| New Brunswick | 63,140 | 80, 880 | Hospitals.... | 93,727 | 94,030 |
| Quebec. | 888,673 | 914,962 | Hotels and clubs. | 116,938 | 109,107 |
| Ontario. | 1,229,003 | 1,430,363 | Office buildings. | 127,336 | 118,064 |
| Manitoba | 164,340 | 143,845 | Public buildings. | 143,048 | 110,672 |
| Saskatchewan | 134,809 | 113,154 | Schools. | 336,136 | 500,512 |
| British Columbia......... | 287,019 | 310,864 | Stores. | 118,751 | 196,380 |
|  | 210,774 | 228,359 | Theatres................. | $\begin{aligned} & 13,700 \\ & 81,891 \end{aligned}$ | $\begin{array}{r} 1,459 \\ 94,365 \end{array}$ |
|  | 3,220,937 | 3,351,718 | Industrial. | 361,239 | 277,559 |
| Totals |  |  | Engineering. . . . . . . . . . . . . | 765,222 | 626,851 |
|  |  |  |  | 84,205 | 92,169 |
|  |  |  | Marine...................... | 65,465 | 41,391 |
|  |  |  | Sewerage and waterworks. . | 127,444 | 132,785 |
| Eesidential. | 1,003,959 | 1,161,374 | Roads and streets.......... | 193,679 | 219,799 |
| Apartments. | 269,610 734,349 | 349,949 811,425 | Power and communications. | 205,582 | 91,719 |
|  | 734,349 | 811,425 | Miscellaneous............... | 88,847 | 48,988 |

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 1,000 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.

During 1962, building permits issued in Canada for construction work exceeded $\$ 2,500,000,000$ in value. This was the highest figure on record and represented an increase of 12.1 p.c. over 1961. New residential construction increased 3.3 p.c., industrial construction 10.1 p.c., commercial construction 7.2 p.c. and institutional and government construction 43.8 p.c. On a regional basis, increases in the total value of building permits were recorded in all the western provinces except Manitoba and in the central provinces of Ontario and Quebec. On the other hand, declines were experienced in all the Atlantic Provinces except Nova Scotia.

Table 13 shows the value of building permits issued in each of 50 municipalities for the years 1961 and 1962.

## 13.-Estimated Value of Proposed Construction as Indicated by Building Permits Issued in 50 Municipalities, 1961 and 1962

Note.-Comparable figures for 1956-60 are given in the 1962 Year Book, p. 684.

| Province and Municipality | 1961 | 1962 | Province and Municipality | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 |  | \$'000 | \$'000 |
| NewfoundlandSt. John's. | 15,732 | 12,521 | Ontario-concluded Port Arthur. Scarborough Township | 13,905 58,687 | $\begin{aligned} & 11,178 \\ & 53,189 \end{aligned}$ |
| Prince Edward Island- |  |  | Toronto............... | 108, 062 | 107,346 |
| Charlottetown. | 5,083 | 2,724 | Toronto Township | 25,957 10,959 | 26,096 9,844 |
| Nova Scotia- |  |  | York North Township | 100,826 | 124,050 |
| Halifax. | 20,710 | 15,835 | York Township........ | 9,226 | 9,006 |
| New Brunswick- |  |  | Manitoba- |  |  |
| Fredericton | 5,277 | 5,386 | Fort Garry... |  |  |
| Moncton. | 14,002 | 7,644 | St. Boniface | $83,543{ }^{1}$ | 82,847 ${ }^{1}$ |
| Saint John | 4,733 | 4,474 | St. James... Winnipeg... | 83,543 | 82,847 |
| Quebec- |  |  |  |  |  |
| LaSalle. | 10,948 | 7,976 | Saskatchewan- |  |  |
| Montreal | 117,770 | 170,715 | Moose Jaw.... | 2,185 | 4,129 |
| Quebec. | 16,173 | 34,557 | Prince Albert. | 5,579 | 5,573 |
| St. Laurent | 9,111 | 10,811 | Regina..... |  |  |
| Ste. Foy | 16,613 | 18,007 | Saskatoon. | 26,624 | 24,093 |
| Sept Iles... | 9,261 | 5,802 13,337 |  |  |  |
| Sherbrooke.... | 8,210 6,340 | 13,337 9,424 | Alberta- | 70,376 | 87,918 |
| Trois Rivieres. | 6,340 | 9,424 | Edmonton | 68,589 | 90,250 |
| Ontario- |  |  | Jasper Place | 8,863 | 11,327 |
| Brampton | 12,196 | 13,483 | Lethbridge | 6,634 | 9,243 |
| Burlington. | 10,821 | 12,602 | Medicine Hat | 6,739 | 5,607 |
| Etobicoke Township | 64,838 | 67,050 | Red Deer | 6,920 | 10,326 |
| Hamilton. | 34,500 | 42,781 |  |  |  |
| Kitchener. | 15,558 | 16,262 | British Columbia- |  |  |
| London. | 34,813 | 47,976 | Burnaby District......... | 13,080 | 20,840 5,416 |
| London Township. | 532 | 448 | Richmond District | 11,785 | 5,416 8,162 |
| Nepean Township | 18,563 10 | 20,293 9,660 | Surrey District.... | 9,082 38,699 | -44,397 |
| Oshawa.. | 78,524 | 66,163 | Victoria. | 9,129 | 12,608 |

[^199]Table 14 shows the value of building permits issued in 17 metropolitan areas across Canada. In 1962 the permits issued in these areas made up 68 p.c. of the total for Canada.
14.-Estimated Value of Building Permits Issued in Metropolitan Areas, 1961 and 1962

| Metropolitan Area | 1961 | 1962 | Metropolitan Area | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 |  | \$'000 | \$'000 |
| St. John's ${ }^{1}$. | 15,732 | 12,521 | Sudbury.. | 15,082 | 21,695 |
| Halifax. | 31,748 | 30,523 | London. | 38,200 | 51,578 |
| Saint John | 4,881 | 4,936 | Windsor. | 21,825 | 21,811 |
| Quebec. | 59,006 318,917 | 76,926 404 | Winnipeg | 83,543 | 82,847 |
| Montreal. ${ }^{\text {Ottawa-Hull }}$ | 318,917 128,012 | 404,777 109,746 | Calgary | 74,947 | 89,579 |
| Toronto.. | 358, 151 | 441,739 | Edmonton. | 90,220 | 113,073 |
| Hamilton | 53,685 | 63,234 | Vancouver. | 108,482 | 119,174 |
| Kitchener | 36,562 | 36,059 | Victoria. | 23,726 | 30,924 |

${ }^{1}$ Although this is a metropolitan area, only St. John's proper is included in the building permits survey.
Table 15 shows the value of building permits, by province, for the years 1961 and 1962 and Table 16 the number of dwelling units covered by building permits in each province for the same years. The relative material was compiled from municipal figures and therefore varies with the terms of individual by-laws, with the methods of estimating the value of local construction and with other factors that may differ from area to area. Information is not available on the permits allowed to lapse without the relative construction being undertaken.
15.-Value of Building Permits Issued, by Province, 1961 and 1962 with Totals for 1958-62

Note.-Comparable figures from 1952 are given in the corresponding table of previous Year Books beginning with the 1957-58 edition.


## 16.-Number of Dwelling Units Covered by Building Permits, by Province, 1961 and 1962 with Totals for 1958-62

| Province and Year | Apartments | Other | Total | Province and Year | Apartments | Other | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. |  | No. | No. | No. |
| Newfoundland.......... 1961 | 32 | 441 | 473 | Manitoba.............. 1961 | 1,368 | 3,440 | 4,808 |
| Prince Edward Island 1961 |  |  |  | Saskatchewan .... 1961 |  |  |  |
| Prince Edward Island... ${ }_{1962}^{1961}$ | 37 8 | 359 56 | 396 64 | Saskatchewan.......... 1961 | 499 919 | 3,597 2,935 | 4,096 3,854 |
| Nova Scotia. . . . . . . . . . 1961 | 439 | 1,013 | 1,452 | Alberta................ 1961 | 2,921 | 9,809 | 12,730 |
| 1962 | 910 | 904 | 1,814 | 1962 | 4,111 | 9,603 | 13,714 |
| New Brunswick......... 1961 | 208 | 700 | 908 | British Columbia. . . . . 1961 | 2,865 | 7,424 | 10,289 |
| 1962 | 330 | 726 | 1,056 | 1962 | 5,095 | 7,827 | 12,922 |
| Quebec................. 1961 | 10,507 | 21,966 | 32,473 | Totals............ . 1958 | 46,847 | 102,297 | 149,144 |
| 1962 | 15,489 | 22,658 | 38,147 | 1959 | 41,745 | 87,000 | 128,745 |
|  |  |  |  | 1960 | 33,711 | 60,299 | ${ }_{11,010}^{94,00}$ |
| Ontario................. ${ }_{1962}^{1961}$ | 17,826 19,965 | ${ }_{25,136}^{23,145}$ | 45,981 45,101 | 1961 1962 | 36,712 48,111 | 76,894 | 113,606 |
|  |  |  |  |  |  | 7,302 | 121,413 |

The indexes given in Table 17 show as far as possible the fluctuations in building costs and their effect upon construction work and employment. 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 centres studied.

## 17.-Index Numbers of Prices of Building Materials, and Wage Rates and Employment in Construction Industries, 1953-62 <br> (Av. 1949=100)

| Year | Prices of Building Materials |  | Wage Rates in Construction Industries ${ }^{1}$ | Employment in Building Construction ${ }^{2}$ |
| :---: | :---: | :---: | :---: | :---: |
|  | Residential | Nonresidential |  |  |
| 1953. | 123.9 | 124.4 | 137.2 | 127.8 |
| 1954. | 121.7 | 121.8 | 141.1 | 111.1 |
| 1955. | 124.3 | 123.4 | 146.6 | 120.2 |
| 1956. | 128.5 | 128.0 | 152.4 | 145.5 |
| 1957 | 128.4 | 130.0 | 162.9 | 147.7 |
| 1958. | 127.3 | 129.8 | 173.6 | 130.1 |
| 1959. | 130.0 | 131.7 | 183.4 | 136.5 |
| 1960. | 129.2 | 132.3 | 195.5 | 128.6 |
| 1961. | 128.4 | 131.1 | 199.7 | 122.5 |
| 1962..... | 129.6 | 131.9 | 209.7 | 127.9 |

${ }^{1}$ Compiled by the Department of Labour.
${ }^{2}$ As reported by employers with 15 or more employees.

## 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

[^200]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, a Crown agency incorporated by Act of Parliament in 1945, administers the National Housing Act and coordinates 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 enters into partnership with both provincial and municipal governments to assist in housing. (See also p. 119.)

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 owners.

The volume of house-building in Canada since 1935 has been spectacular. Close to half of the country's present stock of more than $4,851,000$ 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.

The terms of the National Housing Act, 1954 and its subsequent amendments, with the exception of that passed late in 1962, are described in some detail at pp. 688-691 of the 1962 Year Book. The 1962 amendment (SC 1962-63, c. 17) extends the deadline for partial forgiveness of municipal indebtedness in connection with sewage treatment project loans to Mar. 31, 1965. A consolidation of the Act and its amendments to 1960-61 is available from the Queen's Printer (Catalogue No. YX79-221/23, 35 cents).

## Subsection 2.-Housing Activities in 1962

There was a levelling off in the amount of new residential construction undertaken in 1962. The total of 130,095 starts of all types of housing was only slightly above the 1961 total of 125,577 , although it represented a substantial gain over the 108,858 reported in 1960. Construction was maintained at a comparatively high level throughout the year, partly because of a large carryover of houses started but not completed in 1961. The value of residential construction work put in place was $\$ 1,587,000,000$ compared with $\$ 1,467,000,000$ in the previous year.

A shift in the composition of housing starts marked one of the more significant variations in the 1962 housing pattern. There was a considerable gain in rental dwelling starts, rental housing accounting for 41 p.c. of all starts during the year. This trend was not restricted to any one sector. Nearly all metropolitan centres experienced a strong revival in apartment construction. On the other hand, home-owner dwelling starts declined to 77,236 units from 79,477 in 1961.

During 1962, 48,151 units were built with National Housing Act financing, a reduction from the 1961 total of 59,870 , and units financed by funds other than NHA numbered 81,938 , a considerable increase over the 65,707 units so financed in the previous year. Mortgage money from NHA approved lenders was easily accessible during the first six months of 1962 but during the second half the flow from this source was considerably curtailed. The 32,437 units financed by approved lenders in 1962 represented a 12-p.c. drop from 1961. Meanwhile, conventional mortgage loans were in good supply, increasing from 41,465 in 1961 to 56,365 in 1962.

Demand for new housing in 1962 prevented any large-scale vacancy rate from developing and most of the completed dwellings were absorbed.
18.-Dwelling Units Started and Completed, by Type of Financing, 1953-62 and by Region, 1961 and 1962

| Year and Region | Dwelling Units Started |  |  |  |  | $\begin{gathered} \text { Dwelling } \\ \text { Units } \\ \text { Completed } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | National Housing Act |  | Conventional Institutional Loans | All Other Financing | Total |  |
|  | CMHC | Approved Lenders Loans |  |  |  |  |
|  | No. | No. | No. | No. | No. | No. |
| 1953. | 4,907 | 33,998 | 21,091 | 42,413 | 102,409 | 96,839 |
| 1954. | 1,215 | 48, 819 | 32,891 | 30,602 | 113,527 | 101,965 |
| 1955. | 2,120 | 63,073 | 35,999 | 37,084 | 138,276 | 127,929 |
| 1956. | 2,712 | 40,149 | 35,687 | 48,763 | 127,311 | 135,700 |
| 1957. | 22,333 | 23,971 | 32,866 | 43,170 | 122,340 | 117,283 |
| 1958. | 35,795 | 44,533 | 42,929 | 41,375 | 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 |
| 1961 |  |  |  |  |  |  |
| Atlantic Provinces. | 1,124 | 1,018 | 1,813 | 4,568 | 8,523 | 7,969 |
| Quebec. | 5,982 | 6,765 | 14,400 | 7,068 | 34,215 | 31,756 |
| Ontario | 7,973 | 19,834 | 13,044 | 7,293 | 48,144 | 43,754 |
| Prairie Provinces. | 7,094 | 6,287 | 5,318 | 4,826 | 23,525 | 20,962 |
| British Columbia.. | 1,679 | 1,430 | 3,741 | 4,320 | 11,170 | 11,167 |
| 1962 |  |  |  |  |  |  |
| Atlantic Provinces. | 668 | 1,031 | 2,668 | 3,076 | 7,443 | 7,650 |
| Quebec....... | 4,760 | 6,844 | 18,590 | 9,958 | 40,152 | 35,782 |
| Ontario. | 3,886 | 15,974 | 20,876 | 3,570 | 44,306 | 47,287 |
| Prairie Provinces. | 5,167 | 6,315 | 5,869 | 6,951 | 24,302 | 24,043 |
| British Columbia. | 1,152 | 1,626 | 6,211 | 4,903 | 13,892 | 11,920 |

19.-Dwelling Units Started in Metropolitan and Major Urban Areas, 1961 and 1962


[^201]19.-Dwelling Units Started in Metropolitan and Major Urban Areas, 1961 and 1962
-concluded


[^202]Operations under the National Housing Act.-In 1962, 47,689 dwelling units were financed under the Act compared with 61,353 in 1961. Of these, 47,142 were built with mortgage loans ( 32,437 by approved lenders and 14,705 by the Corporation) and federalprovincial partnership arrangements accounted for 547. The approved lenders provided NHA mortgage financing in an amount of $\$ 383,900,000$ while the Central Mortgage and Housing Corporation provided $\$ 163,300,000$ from public funds.

The volume of insured mortgage lending by the life insurance and trust and loan companies was 12 p.c. lower than in 1961. Loans by all approved lenders financed 32,437 units compared with 36,810 in 1961. Although the life insurance companies were the main source of NHA mortgage funds and financed 18,582 dwellings, the trust companies were responsible for 11,956 units. Loan companies made loans for 1,895 units.

The decline in NHA lending during 1962 took place largely in insured rental loans; approved lenders made loans for 7,824 units of rental accommodation compared with 10,612 in 1961. More than 75 p.c. of the dwellings financed by approved lenders in 1962 were for owner occupancy- 21,324 to be built by merchant builders for sale to owners and 3,289 by owner-applicants who made their own construction arrangements. Comparable figures for 1961 were 22,704 units and 3,494 units, respectively.

Although policy governing lending by the Corporation was virtually unchanged from 1961, the number and value of loans approved declined appreciably during 1962. During
the year, the Corporation made mortgage loans for 14,705 units- 13,223 to be occupied by home owners and 1,482 in limited-dividend projects. In 1961, the Corporation made loans for 20,298 dwellings for owner-occupancy and 3,326 for rental in limited-dividend projects.

During 1962, Corporation loans were available to eligible owner-applicants in any part of Canada, and to merchant builders provided the houses to be financed had been pre-sold to qualified purchasers. In both instances, applicants were required to submit written evidence that they had been unable to obtain loans from an approved lender. To assist in financing the construction of display houses, the Corporation was authorized in November to make to each qualifying builder two loans without the pre-sale requirement and loans for the construction of 794 such prototypes were approved. The Government also directed the Corporation near the year-end to make direct loans for privately sponsored rental housing projects, particularly in smaller communities where loans cannot be obtained from approved lenders.

## 20.-Mortgage Loans Approved by Lending Institutions, by Type of Property and of

 Loan, 1953-62| Year | New Housing |  | Existing | Other <br> Property | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | NHA <br> Loans | Conventional Loans | Conventional Loans | Conventional Loans |  |
|  | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 |
| 1953. | 256 | 119 | 117 | 89 | 581 |
| 1954. | 464 | 180 | 145 | 115 | 904 |
| 1955. | 639 | 235 | 183 | 138 | 1,195 |
| 1956. | 425 | 255 | 177 | 141 | 998 |
| 1957. | 278 | 239 | 150 | 104 | 771 |
| 1958... | 519 | 291 | 208 | 174 | 1,192 |
| 1959. | 308 | 343 | 216 | ${ }_{216}$ | 1,083 |
| 1960 | 242 | 307 | 221 | 263 | 1,033 |
| 1961. | 453 | 333 | 300 | 298 | 1,384 |
| 1962. | 412 | 450 | 358 | 311 | 1,531 |

Loans to Limited-Dividend Housing Companies.-Developments approved in 1962 provided 342 units for lower-income families in projects sponsored by entrepreneurs and 1,140 units for elderly persons, all by non-profit organizations or municipalities. The number of dwellings financed at 1,482 was substantially below the 3,326 reported for 1961, the decrease reflecting lack of interest in the limited-dividend field by companies sponsored by entrepreneurs, whose projects are subject to more restrictive terms. Loans to limiteddividend companies may be made for the purchase and conversion of existing buildings into low-rental developments. The first loan of this kind was made in 1962-to Metropolitan Toronto Housing Company Limited in an amount of $\$ 847,170$ for the purchase of an apartment house and its conversion into 154 low-rental units for elderly persons.

Borrower and House Characteristics.--The average size of families borrowing under NHA continued to rise in 1962, following the trend of the 1950's. The proportion of families with three or more children represented 29.6 p.c. of NHA borrowers compared with 29.0 p.c. in 1961 and 12.5 p.c. in 1950. Almost half of the borrowers were in the $29-34$-year age group, the average age of borrower being $3+.5$ years. Nearly 75 p.c. of NHA borrowers in 1962 were buying a home for the first time.

The average income of NHA home-owner borrowers was $\$ 6,015$, compared with $\$ 5,810$ in $1961 ; 27.5$ p.c. had an income of $\$ 5,000$ or less. The average down-payment was $\$ 2,421$ on a house costing $\$ 14,815$. Borrowers paid out, on the average, 21.4 p.c. of their income in monthly payments on mortgage principal, interest and property taxes combined.

The size of the average house increased to 1,189 sq. feet from 1,154 sq. feet in 1961 ; smaller houses-of less than $1,000 \mathrm{sq}$. feet-decreased from 12.6 p.c. of the total to 10.8 p.c.

There were more homes with four or more bedrooms. Bungalows represented almost 75 p.c. of all single-detached dwellings financed under NHA in 1962, split-level houses for 20 p.c. and two-storey houses for about 5 p.c.

Home Improvement Loans.-There was a moderate drop in the volume of NHA guaranteed bank loans for home improvements. The banks approved 23,895 such loans in an amount of $\$ 38,000,000$, compared with 28,097 loans for a value of $\$ 42,600,000$ in 1961. At the year-end, the banks reported $\$ 69,900,000$ outstanding on such loans compared with $\$ 65,900,000$ at the end of the previous year. The Home Improvement Loan Insurance Fund, comprised of fees received from borrowers, stood at $\$ 2,500,000$ compared with $\$ 2,200,000$ a year previously.

Loans for University Housing Projects.-In 1962, NHA loans for a total amount of $\$ 21,200,000$ were made to 19 universities and colleges for the construction of resident housing accommodation for more than 4,400 students. These loans were provincially distributed as follows:-

| Province | Loans | Amount | $\begin{gathered} \text { Students } \\ \text { to be } \\ \text { Accommodated } \end{gathered}$ |
| :---: | :---: | :---: | :---: |
|  | No. | \$'000 | No. |
| Newfoundland. | - | - | - |
| Prince Edward Island. | - | - | - |
| Nova Scotia. | 2 | 1,097 | 241 |
| New Brunswick. |  |  | - |
| Quebec.......... | 5 | 4,321 | 957 |
| Ontario... | 5 | 3,953 | 804 |
| Manitoba...... | 3 | 4,161 | 744 |
| Saskatchewan. | 1 | 2,357 | 349 |
| Alberta........... | 1 | 4,976 | 1,218 |
| British Columbia. |  | 371 | 53 |

The average loan per student was $\$ 4,864$. Thirteen other universities or colleges submitted preliminary applications for loans which, if approved, would result in loans of $\$ 10,100,000$ to provide dormitories for an additional 2,400 students. The total amount of loans that can be advanced by the Corporation for university housing is set by statute at $\$ 100,000,000$. From the enactment of the legislation in December 1960 to December 1962, 41 loans totalling $\$ 41,500,000$ were approved for residences to accommodate some 8,700 students.

Loans for Municipal Sewage Treatment Projects.-During 1962, 223 NHA loans amounting to $\$ 45,000,000$ were made to assist municipalities in financing sewage treatment projects, provincially distributed as follows:-

| Province | Loans | Amount | Province | Loans | Amount |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | \$'000 |  | No. | \$'000 |
| Newfoundland......... | 3 | 894 | Ontario. | 86 | 35,231 |
| Prince Edward Island... | 2 | 35 | Manitoba | 14 | 640 |
| Nova Scotia. | 2 | 1,127 | Saskatchewan. | 52 | 1,049 |
| New Brunswick | 5 | 133 | Alberta. | 21 | 563 |
| Quebec.................. | 18 | 3,628 | British Columbia | 20 | 1,759 |

A further 220 preliminary applications or inquiries were received. From enactment of the legislation for these loans in December 1960 to December 1962, 367 loans with an aggregate value of $\$ 85,000,000$ were approved for 297 municipalities. Although close to one half of all the municipalities receiving such aid had a population of fewer than 1,000 persons, the over-all population of communities receiving assistance exceeded $6,000,000$. Loans were made in each of the ten provinces, with Ontario, Saskatchewan and British Columbia the most active. Many villages and small towns receiving federal assistance for sewerage works are installing complete systems for the first time, in contrast with the larger municipalities where such loans are used to improve or extend existing facilities. Thus, the per capita loan is usually higher in the smaller community.

The Act initially provided that one quarter of the loan and interest thereon be forgiven for work put in place on or before Mar. 31, 1963; late in 1962, Parliament approved an extension of two years to Mar. 31, 1965.

Mortgage Marketing.-The Corporation continued its efforts to encourage development of a market for National Housing Act insured mortgages. Three offerings were made during the year to members of the Investment Dealers' Association of Canada, NHA approved lenders and their NHA approved correspondents. The total amount offered to investors was $\$ 83,500,000$, but sales were limited to $\$ 60,000,000$, the excess providing prospective investors with more opportunities for selection. Since June 1961, approximately $\$ 85,000,000$ of the Corporation's mortgage portfolio has been sold. Of this amount, sales of $\$ 47,000,000$ were effected in 1962 . On Dec. 6,1962 , the Corporation was authorized to make short-term lending facilities available to NHA approved lenders as an added stimulus to the development of an active mortgage market in Canada.

Urban Redevelopment.-The redevelopment of blighted areas in Canadian cities was again substantially assisted by federal contributions in 1962. An estimated $\$ 2,600,000$ was approved to help the City of Montreal acquire and clear 17.6 acres of a 27 -acre redevelopment area in the east end of the city. Some 72 acres of waterfront in Hamilton have been marked for clearance and redevelopment as a public park and recreational area with a $\$ 600,000$ federal contribution. Two separate projects were under way in Halifax-one a 17 -acre site to be put to commercial, residential and light industrial use and the other a long-term redevelopment program designed to revitalize an older part of the city. Saint John invited proposals for the private development of industrial, commercial and highdensity residential land on 12 acres of the 57 -acre slum clearance project undertaken prior to 1962. A federal-provincial housing project has also been approved for the cleared area.

Federal-Provincial Projects.-During 1962, the Government approved rental housing projects under federal-provincial arrangements in Saint John, Montreal, Galt, Winnipeg, Saskatoon and Weyburn and to the extension of an Ottawa project. These will provide a total of 547 dwellings for rent to tenants of low income. Requests for projects were received from the County of Halifax, Moncton and North Battleford and investigation of proposed projects was under way in 38 municipalities in Ontario. Since 1950 when the first project was approved until the end of 1962, 11,167 dwelling units in 93 projects were approved. Of these, 9,035 units were finished and turned over to local housing authorities for administration.

During 1962, approval was given to service 1,469 lots in four land assembly projects. Preliminary investigations for such projects were under way in three Ontario municipalities and an additional 569 lots were offered for sale. The total number of lots serviced and sold under federal-provincial arrangements up to the end of 1962 was 9,503 .

Housing Research and Community Planning.-Under the NHA, the Corporation is responsible for investigating housing conditions and for distributing information leading to the improvement of housing and community planning. The Corporation also assists other organizations engaged in housing and community planning studies. During 1962, approximately $\$ 1,000,000$ was expended for this purpose, both on its own account and through arrangements with outside agencies.

Federal grants were made to the Ontario Research Foundation, the National House Builders' Association, the Community Planning Association, the Ontario Association of Housing Authorities, the Royal Architectural Institute of Canada and the Province of Ontario, as well as to the Canadian Council on Urban and Regional Research. Educational grants were also made to students in architecture and community planning, including 15 fellowships of $\$ 1,500$ each to students attending planning courses at Canadian universities, and five bursaries of $\$ 1,200$ each to university students attending graduate courses in the fields of housing, urban redevelopment and estate management.

## 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 results $\dagger$ 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 21 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.
21.-Housing Characteristics, Censuses of 1951 and 1961

| Item |  | $1951{ }^{1}$ | $\begin{gathered} \text { P.C. } \\ \text { of } \\ \text { Total } \end{gathered}$ | 1961 | $\begin{gathered} \text { P.C. } \\ \text { of } \\ \text { Total } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Totals, Occupied Dwellings. | No. | 3,409,295 | 100.0 | 4,554,493 | 100.0 |
| Tenure- |  |  |  |  |  |
| Owner-occupied. | No. | 2,236,955 | 65.6 | 3,005,587 | 66.0 |
| Tenant-occupied. |  | 1,172,340 | 34.4 | 1,548,906 | 34.0 |
| Type- |  |  |  |  |  |
| Single detached.. | No. | 2,275,615 | 66.7 | 2,978,501 | 65.4 |
| Apartments, flats |  | 885,565 | 26.0 | 1,151,098 | 25.3 |
| Dwellings by period of construction- |  |  |  |  |  |
| Before 1920. | No. | . | . | 1,391,719 | 30.6 |
| Since 1945. | " | .. | . | 1,148,389 | 25.2 |
| Dwellings in need of major repair. | No. | 457,570 | 13.4 | 255,414 | 5.6 |
| Av. rooms per dwelling. | No. | 5.3 | ... | 5.3 | ... |
| Av. bedrooms per dwelling |  |  |  | 2.7 |  |
| Crowded dwellings ${ }^{2}$. Median value. | " | 641,820 | 18.8 | 750,942 11,021 | 16.5 ... |
| Dwellings with mortgage ${ }^{3}$. | No. | 394,910 | 29.3 | 979,966 | 45.5 |
| Median monthly cash rent ${ }^{4}$. | \$ | 34 | ... | 62 | ... |
| Dwellings heated principally by- |  |  |  |  |  |
| Coal or wood. | No. | 2,387,375 | 70.0 | 1,062,751 | 23.3 |
| Oil. | " | 774,535 | 22.7 | 2,565,416 | 56.3 |
| Gas. | " | 163,165 | 4.8 | 8557,953 | 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...... | " | 2,072,975 | 60.8 | 3,659,520 | 80.3 |
| Flush toilet...... | " | 2,328, 855 | 68.3 | 3,880,512 | 85.2 |
| Mechanical refrigerato | " | 1,594,980 | 46.8 | 4,145,086 | 91.0 |
| Passenger automobile. | " | 1,442,595 | 42.3 | 3,114,677 | 68.4 |

[^203]Table 22 gives certain 1961 housing characteristics by province. 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

[^204]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.

## 22.-Housing Characteristics, by Province, Census 1961

| Province or Territory | Total Occupied Dwellings | Type of Dwelling |  | Period of Construction |  | In Need of Major <br> Repair | Average <br> Rooms | Average Bedrooms | Crowded Dwellings ${ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Single Detached | Apartments, Flats | $\begin{aligned} & \text { Before } \\ & 1920 \end{aligned}$ | $\begin{aligned} & \text { Since } \\ & 1945 \end{aligned}$ |  |  |  |  |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| Newfoundland | 87,940 | 73,738 | 5,170 | 21,168 | 42,853 | 4,783 | 5.9 | 3.2 | 26,254 |
| Prince Edward Island. |  |  | 2,259 |  |  | 1,357 | 6.4 | 3.3 |  |
| Nova Scotia | 175, 340 | 134,715 | 25,187 | 83,465 | 53,858 | 15,158 | 5.8 | 3.0 | 31,832 |
| New Brunswick | 132,714 | 95,772 | 25,906 | 57, 822 | 44,439 | 15,977 | 5.9 | 3.0 | 27,836 |
| Quebec.. | 1,191,368 | 467,716 | 583,983 | 357,568 | 531,863 | 49,392 | 5.3 | 2.8 | 259,985 |
| Ontario | 1,640,750 | 1,140,653 | 324,859 | 573,071 | 705,528 | 74,127 | 5.5 | 2.7 | 194,343 |
| Manitoba | 239,754 | 190,171 | 37,115 | 75,417 | 98,039 | 18,505 | 4.9 | 2.4 | 40,261 |
| Saskatchewan | 245,424 | 210,253 | 22,390 | 69,260 | 97,071 | 22,117 | 4.9 | 2.5 | 45,967 |
| Alberta. | 349,809 | 272,069 | 54,919 | 64,979 | 192,635 | 27,116 | 4.9 | 2.4 | 61,308 |
| British Columbia. | 459,532 | 367,663 | 68,632 | 74,740 | 236,865 | 25,309 | 4.9 | 2.4 | 55,484 |
| west Territories.. | 7,920 | 6,324 | 678 | 362 | 6,117 | 1,573 | 3.4 | 1.5 | 3,592 |
| Canada. | 4,554,493 | 2,978,501 | 1,151,098 | 1,391,719 | 2,014,385 | 255,414 | 5.3 | 2.7 | 750,942 |

${ }^{1}$ Dwellings in which the number of persons exceeded the number of rooms.
As shown in Table 23, Newfoundland had the largest proportion of owner-occupied dwellings in 1961 with 87.2 p.c., followed by Prince Edward Island with 79.2 p.c.; Quebec had the smallest proportion with 49.0 p.c. However, of owner-occupied, single detached, non-farm dwellings with mortgage, Ontario had the highest percentage (53.5) and Newfoundland the lowest (7.9).

The median value of homes ranged from $\$ 4,311$ in Newfoundland to $\$ 12,952$ in Ontario and the average cash rent from $\$ 48$ in Prince Edward Island and New Brunswick to $\$ 76$ in Ontario. Average gross rent, including amounts paid monthly for services such as water, electricity, gas or fuel, ranged from $\$ 66$ in New Brunswick to $\$ 87$ in Ontario.
23.-Tenure of Occupied Dwellings, Value and Rent, by Province, Census 1961

| Province or Territory | Owned Dwellings |  |  | Rented Dwellings |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Total | Median | Dwellings with Mortgage ${ }^{1}$ | Total | Average Cash Rent ${ }^{2}$ | Average Gross Rent ${ }^{2}$ |
|  | No. | \$ | No. | No. | \$ | 8 |
| Newfoundland. | 76,691 | 4,311 | 5,313 | 11,249 | 55 | 77 |
| Prince Edward Island | 18,958 | 5,310 | 2,786 | 4,984 | 48 | 67 |
| Nova Scotia. | 131,405 | 5,873 | 27,322 | 43,935 | ${ }_{48}$ | 74 66 |
| New Brunswick | 94,022 583,981 | $\begin{array}{r}5,382 \\ 10,004 \\ \hline\end{array}$ | 16,860 158,518 | 38,692 607,387 | 59 | 72 |
| Ontario.. | 1,157, 229 | 12,952 | 472, 959 | 483,521 | 76 | 87 |
| Manitoba | 176,156 | 10,396 | 53,341 | 63,598 | 64 | 74 |
| Saskatchewan | 188,226 | 7,396 | 30,543 | 57,198 | 55 | 69 |
| Alberta. | 248,537 | 12,116 | 80,732 | 101,272 | 65 | 75 |
| British Columbia | 326,090 | 11,744 | 131,321 | 133,442 | 65 |  |
| Yukon and Northwest Territori | 4,292 | 2,188 | 271 | 3,628 | 61 | 77 |
| Canada. | 3,005,587 | 11,021 | 979,966 | 1,548,906 | 65 | 77 |

${ }^{1}$ Figures relate to owner-occupied, single detached, non-farm dwellings only.
${ }^{2}$ Figures relate to nonfarm dwellings only, regardless of type.

## CHAPTER XVI.-LABOUR*

## CONSPEGTUS



The interpretation of the symbols used in the tables throughout the Year Book
will be found facing p. 1 of this volume.

## Section 1.-The Government in Relation to Labour

## Subsection 1.-The Federal Department of Labour and Federal Labour Legislation

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 today falls very broadly into two main areas-industrial relations and manpower supply.

The legislation it administers 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 Government contracts for construction or supplies, and promotes joint labour-management consultation. It also administers legislation to prevent discrimination in employment based on race, religion, colour or national origin, to provide for equal pay for female employees and to provide for annual vacations with pay.

[^205]In the manpower supply area the Department has been increasingly concerned with promoting the best use of all available manpower resources. Under federal-provincial agreements, assistance is provided to the provinces for the construction and equipping of technical and vocational schools and for the operation of a variety of training programs, including training for the unemployed in provincially organized courses. The Department is responsible for the co-ordination of the national program for the vocational rehabilitation of the civilian disabled, and provides financial assistance, also under federal-provincial agreements, to provincial rehabilitation programs.

To stimulate winter activity and so increase winter employment it organizes, in cooperation with the National Employment Service, the annual nation-wide, "Do It Now" winter employment campaign to persuade home and business owners to plan inside renovation and repair work for the cold months. It is also responsible for the Municipal Winter Works Incentive Program, through which the Federal Government contributes toward winter works projects undertaken by municipalities.

Research, involving regular surveys and analyses of economic and social trends affecting the labour force, is an important part of its work. It studies wages and working conditions, employment and unemployment, particular occupations, the training and utilization of manpower, union organization and collective bargaining.

Through the Women's Bureau and the Division on Older Workers, it investigates the problems of women and of older persons in the labour force. It assists in the movement of farm workers between provinces and between Canada and the United States, under federal-provincial agreements. It operates a plan of workmen's compensation for seamen on Canadian ships, and arranges workmen's. compensation for Federal Government employees.

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 governments, and is responsible for the sale and administration of Canadian Government annuities.

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 hours on contracts for construction are now regulated by the Fair Wages and Hours of Labour Act and Order in Council P.C. 2029 of Dec. 22, 1954. Hours of work on construction contracts are limited to eight per day and 44 per week, except in an emergency 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.

Wages and hours of work on contracts for equipment and supplies are also regulated by Order in Council P.C. 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

[^206]forests, experimental farms, canal operation, airports and government vessels, survey parties, special projects, etc. Such positions are exempt from the operations of the Civil Service Act and rates of pay 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 Fair Wages and Prevailing Rates Division of the Industrial Relations Branch also recommends rates of pay for 4,000 commissionaires employed by various government departments and agencies throughout Canada, 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 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 affecting 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, 1962, the Canada Labour Relations Board received 1,390 applications for certification, 819 of which were granted, 289 rejected, 276 withdrawn and six were pending at the end of the period. Of the 903 industrial disputes dealt with under the conciliation provisions of the Act, 799 were settled by conciliation officers and conciliation boards, 55 were not settled, 25 lapsed and 24 were pending at Dec. 31, 1962.

Labour-Management Co-operation Service.-During World War II, production committees based on the principle of joint consultation between labour and management were established in many vital industries. Since 1947 the establishment of labour-management committees in industry has been encouraged and assisted by the Labour-Management Co-operation Service, a division of the Industrial Relations Branch of the Department of Labour. The number of active committees has grown from 526 in 1947 to 1,754 at Dec. 31, 1962. Their activities are directed toward such objects as better understanding between management and labour, improved production efficiency, improved quality, reduction of waste, accident prevention, good housekeeping and reduction of absenteeism.

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. The Act is administered by the Minister of Labour through the National Employment Service (see p. 736).

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. 705). 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.

Annual Vacations Act.-This Act was passed in January 1958 and became effective by proclamation on Oct. 1, 1958. It provides a one-week vacation with pay for the first year of employment and a two-week vacation for subsequent years. Vacation pay is computed at 2 p.c. of wages, as defined in the Act, for a vacation of one week and 4 p.c. for a vacation of two weeks.

## Subsection 2.-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 legislation 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.

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 minimum wages for employees. Five provinces have general hours-of-work laws, which either limit daily and weekly working hours or require the payment of an overtime rate if work is continued beyond specified daily and weekly hours.

Hours of work are also restricted and minimum wages established for certain types of employment under industrial standards legislation in Nova Scotia, New Brunswick, Ontario, Saskatchewan and Alberta, under the Manitoba Fair Wage Act and under the Quebec Collective Agreement Act. Industrial standards legislation establishes a procedure whereby a schedule of minimum wages and maximum hours of labour may be put into effect for a trade or industry in a given area. Under these laws a conference is convened by the Minister of Labour on the request of employer or employee representatives in an industry. If at such conference "a proper and sufficient representation" of the employers and employees affected agree on wages and hours conditions, the government may declare them legally binding on the entire industry in the district concerned. In Manitoba, the Fair Wage Act provides similar machinery for fixing wages and hours. Although the Act may be applied in other industries, its application has been confined to the construction industry. The Quebec Collective Agreement Act enables the wages, hours, vacations, apprenticeship and social security benefit provisions of a collective agreement to be made applicable by decree to all employers and employees in the industry throughout the province or in a defined area, provided the parties to the agreement represent a sufficient proportion of the industry. As with industrial standards schedules, the standards made binding by the decree are minimum standards.

Eight provinces have passed annual vacations laws. In four provinces employees have a right to an annual vacation with pay of one week after a year of employment, and in the remaining four a two-week vacation must be granted after one year of service. In most provinces there is legislation setting a minimum age for the employment of young workers in various industries and occupations. A weekly day of rest is provided for by law in most provinces. In two provinces there are statutory requirements regarding the observance of certain public holidays.

Factory Acts in eight provinces establish safeguards for the protection of the health and safety of workers in factories with respect to such matters as sanitation, heating, lighting, ventilation and the guarding of dangerous machinery. Long-established 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 gasand oil-burning equipment. This legislation also prescribes standards of qualification for workers who install, operate or service such equipment. Laws requiring measures to be taken to eliminate accidents in construction and excavation work are in force in a number of jurisdictions.

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.

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 make compulsory collective bargaining between an employer and the certified trade union representing his employees. Except in Saskatchewan, they provide for compulsory conciliation, that is, they require the parties to comply with the conciliation procedures laid down in the Act before a strike or lockout may legally take place. A two-stage conciliation process is provided for-the intervention of a conciliation officer at the first stage of a dispute and, failing settlement, the establishment of a conciliation board. The Acts also provide for the compulsory settlement of any dispute that arises out of a collective agreement, and prohibit strike action while an agreement is in force. All prescribe and provide penalties for unfair labour practices. In some 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.

Six 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. The same six provinces have laws providing that places to which the public is customarily admitted must be open to all without regard to race, colour, religion or national origin. Eight provinces have equal pay laws, which forbid discrimination in rates of pay solely on the basis of sex. The Ontario anti-discriminatory legislation has been consolidated in the Ontario Human Rights Code, 1961-62, which is administered by the Ontario Human Rights Commission.

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. 744-745.

Changes in 1962.-In 1962 there were a number of important changes in provincial labour laws.

In British Columbia, a new Payment of Wages Act was passed to give workmen greater assurance of payment of wages. In addition to requiring wages to be paid not less often than twice a month, a new wages recovery procedure, to be administered by the Board of Industrial Relations, made it an offence for an employer to issue an NSF cheque in payment of wages, and gave the Board authority to order employers to be bonded. In Manitoba, provision was made, by amendment to the Employment Standards Act, for the bonding of the employer to provide security for the payment of wages.

Major amendments were made to the labour relations laws of Ontario, Manitoba and Prince Edward Island. The Ontario amendments dealt in large part with labour relations in the construction industry, and were designed to expedite certification and conciliation proceedings in view of the usual short-term employment in the industry. In Manitoba, trade unions and employers' organizations were declared to be legal entities, liable in damages for a breach of a collective agreement or for a violation of the Labour Relations Act. Provision was also made for the appointment of a mediator, to be selected and paid
by the parties, as an alternative to the regular conciliation procedure, and for the enforcement of the Act through Crown prosecutions. Previously, only prosecutions instituted by the aggrieved party were provided for. Another amendment requires all strike votes to be conducted by the Manitoba Labour Board. The Prince Edward Island Act was replaced by a new statute which follows more closely the general pattern of labour relations laws in Canada.

A new Construction Safety Act in Ontario, to be enforced by municipal inspectors, and a revised Act with the same title in Manitoba are designed to promote safe practices in all phases of construction work, by prescribing minimum standards as to equipment and precautions to be observed by employers and workmen. The scope of the New Brunswick Factory Act was extended to cover the construction industry and, because of its wider application, the name of the Act was changed to the Industrial Safety Act. In Alberta, the Factories Act was repealed and factory inspection services were assigned to the Workmen's Compensation Board and a new Elevators and Fixed Conveyances Act was passed, applicable to lifting devices in all parts of the province. In Manitoba, the provisions of the Employment Standards Act having to do with the safety of employees in factories were extended to cover all types of employment. The Labour Safety Council of Ontario, created by an amendment to the Department of Labour Act, is to act in an advisory capacity to the Minister of Labour on matters affecting the safety of workers. The New Brunswick Industrial Safety Council was set up to promote and co-ordinate industrial safety activities in that province.

Workmen's compensation Acts were amended in five provinces. Important changes in New Brunswick were the upgrading of existing pensions to disabled workmen and the raising of the age limit to which children's allowances are payable, if they continue to attend school, from 18 to 21 years. In Newfoundland and Prince Edward Island, a one-day waiting period was adopted. Widows' and children's compensation payments were increased in Nova Scotia, New Brunswick and Saskatchewan. The maximum annual earnings on which compensation may be paid were raised from $\$ 3,600$ to $\$ 4,200$ in Nova Scotia and from $\$ 4,000$ to $\$ 5,000$ in Prince Edward Island.

Further information about legislative changes in 1962 may be found in the Labour Gazette, September and November issues, 1962.

Regulation of Hours and Annual Vacations.-The Provinces of Ontario, Manitoba, Saskatchewan, Alberta and British Columbia have statutes of general application limiting working hours. The Acts are of two types. Those of Ontario, Alberta and British Columbia set actual limits on daily and weekly hours, and provide that work may not be carried on beyond those limits except with the permission of the administrative authority. 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. Hours are also regulated under the Industrial Standards Acts, the Manitoba Fair Wage Act and the Quebec Collective Agreement Act (see p. 712) and there is, in addition, some regulation of hours under other legislation, such as factories Acts, mines Acts and, in Newfoundland, legislation governing shops.

In Ontario, working hours are limited to eight in a day and 48 in a week. In Alberta, the maximum daily and weekly hours permitted to be worked in all centres with a population of over 5,000 are eight and 44 , and in the remainder of the province they are eight and 48. In British Columbia, hours are limited to eight in a day and 44 in a week. Under the Saskatchewan law, one and one half times the regular rate must be paid for work done after eight hours in a day and 44 hours in a week, except in workplaces (other than factories) in the smaller centres, where the overtime rate must be paid after a 48 -hour week. In addition to the above, the Lieutenant-Governor in Council has authority to limit daily hours in any class of employment in order to prevent the working of excessive hours;
this authority has been used to limit daily hours to 12 in highway construction and maintenance. The Manitoba Act, which applies to the chief industrial areas of the province, requires one and one half times the regular rate to be paid after eight hours in a day and after 48 hours in a week for men and 44 hours for women. The Manitoba and British Columbia Acts cover specified industries but the other three Acts apply to most industries in the province concerned.

Seven provinces-Nova Scotia, Quebec, Ontario, Manitoba, Saskatchewan, Alberta and British Columbia-have annual vacations legislation applicable to most industries, and the New Brunswick Vacation Pay Act applies to construction, mining, including the peat-moss industry, and the canning and packing of fish, vegetables and fruit. In Nova Scotia, New Brunswick, Quebec and Ontario, workers are entitled to a vacation with pay of one week after a year of service; in the four western provinces, a vacation of two weeks with pay must be granted after a year of employment. In Saskatchewan, a worker becomes eligible for a vacation of three weeks after five years of service with the same employer. A worker employed for less than a year is entitled, in Quebec, to a half-day for each month of employment and, in Saskatchewan, to one day for every month. Coal miners in Alberta are entitled to a vacation of one day for every 20 days worked in a month but not more than two weeks in a year.

A stamp system of vacation pay credits is in effect for the construction industry in Alberta and Nova Scotia. In Ontario, the stamp system is used in any industry (including construction) in which employment is terminated during a working year. In Manitoba, vacation pay of transitory construction workers in Greater Winnipeg is deposited by employers with the Department of Labour and disbursed to employees by cheque after the first day of July in each year.

Farm workers are excluded from the vacation provisions in all provinces, and domestic servants in all but Manitoba and Saskatchewan. In addition, Quebec exempts employees of municipal and school corporations, janitors and caretakers, salesmen with less than three months experience and certain part-time workers; Ontario exempts professional workers, flower, fruit and vegetable growers, and funeral directors and embalmers; Nova Scotia excludes workers engaged in lumbering and commercial fishing; Alberta exempts salesmen; Manitoba and Saskatchewan exclude ranch and market garden employees; and British Columbia exempts professional workers and horticultural workers. Workers covered by decrees under the Quebec Collective Agreement Act are excluded from the vacation order and are subject to the annual vacation provided for in the decree concerned.

Minimum Wage Regulations.-All provinces have minimum wage legislation but in Nova Scotia the law applies only to women workers, and in Ontario, although the Act applies to both sexes, minimum wage rates have been set for women only. In Prince Edward Island, no minimum rates are in effect under the law applying to male workers; under the Women's Minimum Wage Act rates have been set for only one group of employees -waitresses and other restaurant workers in Charlottetown and Summerside. In New Brunswick, minimum rates have been established for most women workers; they have been fixed for men in certain industries only-logging, sawmilling, the garment industry and the canning or processing of fish, vegetables or fruit. With these exceptions, minimum wage laws and orders apply to both sexes and, except in Newfoundland, set the same rates for male and female workers. In Newfoundland, New Brunswick and British Columbia, minimum rates apply throughout the province. Elsewhere (excluding Prince Edward Island) there are regional differentials in minimum rates. Weekly rates are set in some provinces, hourly rates in others.

Table 1 shows the minimum rates in effect on Jan. 1, 1963, for several classes of establishment in the principal cities.
1.-Minimum Wage Rates for Experienced Workers in Certain Cities, by Sex, Jan 1, 1963

| Item, Type of Establishment and Sex | $\begin{aligned} & \text { St. } \\ & \text { John's, } \\ & \text { Nfld. } \end{aligned}$ | $\begin{array}{\|c\|} \text { Halifax, } \\ \text { N.S. } \end{array}$ | $\begin{aligned} & \text { Saint } \\ & \text { John, } \\ & \text { N.B. } \end{aligned}$ | $\begin{aligned} & \text { Montreal, } \\ & \text { Que. } \end{aligned}$ | Toronto, Ont. | Winnipeg, Man. | Regina, Sask. | Ed- monton, Alta. | $\begin{gathered} \text { Van- } \\ \text { couver, } \end{gathered}$ B.C. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Maximum hours per week to which the $\quad \mathrm{M}$.rates apply. | 48 48 | 48 | $\overline{48}$ | 481 481 | 48 | 48 44 | 44 44 | 44 44 | 44 44 |
|  | cts. per hour | \$ per week | cts. per hour | cts. per hour | $\$$ per week | cts. per hour | \$ per week | \$ per week | cts. per hour |
| Factories.............. ${ }_{\text {M. }}^{\text {F. }}$ | 50 35 | 21.60 | $\begin{aligned} & 652 \\ & 60 \end{aligned}$ | 70 | $\overline{30}$ | 66 66 | 34 34 | $\begin{aligned} & 34 \\ & 34 \end{aligned}$ | $\begin{aligned} & \$ 1 \\ & \$ 1 \end{aligned}$ |
| Laundries, etc.......... ${ }_{\text {M }}^{\text {M. }}$. | 50 35 | 21.6 | $\overline{60}$ | 70 | $\overline{30}$ | 66 66 | 34 34 | 34 34 | $\begin{aligned} & 75 \\ & 75 \end{aligned}$ |
| Shops................. ${ }^{\text {M. }}$. | 50 35 | $21 . \overline{60}$ | $\overline{60}$ | 70 70 | $\overline{30}$ | 66 66 | 34 34 | 34 34 | \$1 |
| $\begin{array}{cc} \text { Hotels, restaurants, }{ }^{3} & \mathrm{M} . \\ \text { etc. } \end{array}$ | $\begin{aligned} & 50 \\ & 35 \end{aligned}$ | ${ }_{21.60}$ | $\overline{55}$ | $\begin{aligned} & 64^{4} \\ & 64 \end{aligned}$ | $\overline{30}$ | $\begin{aligned} & 66 \\ & 66 \end{aligned}$ | $\begin{aligned} & 34 \\ & 34 \end{aligned}$ | $\begin{aligned} & 34 \\ & 34 \end{aligned}$ | \$1 |
| Beauty parlours........ ${ }_{\text {F }}^{\text {F. }}$ | $\begin{aligned} & 50 \\ & 35 \end{aligned}$ | 21.60 | $\overline{60}$ | 70 | $\overline{30}$ | 66 66 | 34 34 | 34 34 | $\begin{aligned} & 35^{5} \\ & 35^{5} \end{aligned}$ |
| Theatres and amuse- ment places. $\quad \underset{\mathrm{F}}{\mathrm{F}}$. | $\begin{aligned} & 50 \\ & 35 \end{aligned}$ | 21.60 | $\overline{60}$ | 70 70 | $\overline{30}$ | 66 66 | 34 34 | 34 34 | 75 75 |
| Offices..................... M . | 50 35 | 21.60 | $\overline{60}$ | 70 | $\overline{30}$ | 66 66 | 34 34 | $\begin{aligned} & 34 \\ & 34 \end{aligned}$ | $\begin{aligned} & 75 \\ & 75 \end{aligned}$ |

[^207]Regulation of Wages and Hours of Work under Industrial Standards Legislation and the Quebec Collective Agreement Act.-Industrial Standards Acts are in effect in Nova Scotia, New Brunswick, Ontario and Saskatchewan and there are similar provisions in the Alberta Labour Act (Part IV). These provide that a schedule of wage rates and hours of work agreed upon by a representative group of employees and employers in an industry may, upon approval by the government, be given statutory effect by Order in Council, to become the minimum terms of employment for the entire industry in the area. This legislation applies only to certain trades and areas in the province concerned. It has been used fairly extensively in the building trades, the clothing industries, barbering and a few other industries. An advisory committee, usually equally representative of employers and employees, is established to assist in enforcing a schedule.

The Nova Scotia Act applies only to construction work in Halifax, Dartmouth and Sydney; 12 schedules of wages and hours for individual building trades were in force during the year ended Mar. 31, 1962. In New Brunswick, four schedules covering an individual building trade or group of such trades were in effect in the same period.

At the end of March 1962, there were 148 schedules in force under the Ontario Industrial Standards Act. Of these 71 applied to the building trades, 67 to barbering, and four to the retail gasoline service industry. Five schedules for the garment industries and one for hard furniture applied throughout the province. During the year the fur industry and hairdressing were designated as industries under the Act.

In Saskatchewan, 16 schedules were in effect on Mar. 31, 1962, covering barbering, beauty culture, baking, carpentry, painting and the electrical trade. The schedule for barbering covered the whole province except the cities of Regina and Saskatoon, for each of which a separate schedule was in effect. Each of the other schedules applied to a zone consisting of a city and its environs. In Alberta, 15 schedules were in force at the end of
the year 1962. These governed, in one or more areas, certain building trades, dairy employees, garage and service station workers, and bakers and bakery salesmen. In Manitoba, the Fair Wage Schedule issued annually under the Fair Wage Act for the construction industry sets a regular work week and hourly rates of wages for various classifications of workers. The schedule applies to private construction work in the larger centres of population as well as to public construction work throughout the province.

In the Province of Quebec, 105 decrees under the Collective Agreement Act were in force on Mar. 31, 1962, governing 34,387 employers and 240,924 employees. Of the 105 decrees, 18 applied to barbers and hairdressers, 21 to commercial establishments, 16 to the construction industry, 26 to manufacturing, and 24 to other industries and services. Fifteen of the decrees had province-wide jurisdiction, governing the manufacture of women's coats and suits, dresses, hats and handbags, men's and boys' clothing, hats and caps and shirts, the manufacture of shoes, leather gloves, furniture, paint, corrugated paper boxes and caskets, the tanning industry and the building materials industry. The remaining decrees regulated an industry in a particular urban centre or region of the province. Each decree is enforced by a parity committee which has power to levy an assessment on employers and employees to obtain funds for the enforcement of the decree.

## Section 2.-The Labour Force*

A current and periodic analysis of the state of employment in Canada was organized in 1945 to provide up-to-date and reliable information concerning the Canadian labour force. A labour force survey, on a sample basis, was conducted in November 1945 and quarterly surveys were carried out thereafter until November 1952, when the survey was placed on a monthly basis. A multi-stage area sample was used involving the selection of progressively smaller sample areas and ultimately of households. Random methods of choice were used at every stage of selection so that all members of the population had an equal chance of inclusion. The present sample covers more than 36,000 households in about 170 different areas of Canada. The estimates of the labour force are restricted to the civilian labour force. In addition to members of the Armed Forces, inmates of institutions and Indians living on reservations are excluded.

The labour force surveys provide a classification of persons 14 years of age or over on the basis of their activity during the week preceding the beginning of interviewing for the survey. The main divisions of the population are defined as follows:-

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 survey week, were employed or unemployed.

Employed.-The employed include all persons who, during the survey 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; or (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 survey week and who also looked for work are included in the unemployed as persons without work and seeking work.

Unemployed.-The unemployed include all persons who, through the survey week: (a) were without work and seeking work, i.e., did no work during the survey 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; or (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 (exclusive 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 and others who worked part time are classified as employed. If they looked for work they are classified as unemployed.

[^208]The estimates derived from the labour force surveys are subject to sampling error. In general, the percentage of error tends to decrease as the size of the estimate increases. The chances are about 19 out of 20 that the difference between the estimate and the figure which would have been obtained from a complete count is less than shown below. The sampling variabilities indicated are averages, since sampling error differs from characteristic to characteristic; in particular, for the unemployed the sampling variability is about 40 p.c. higher than the general average.

|  | Size of Estimate | Sampling Variability |
| :---: | :---: | :---: |
| 10,000.. |  | 3,500 |
| 50,000.. |  | 8,000 |
| 100,000.. |  | 11,000 |
| 500,000.. |  | 24,000 |
| 1,000,000.. |  | 33,000 |
| 5,000,000.. |  | 58,000 |
| 6,000,000.. |  | 60,000 |

## 2.-Estimates of the Civilian Labour Force and its Main Components, Annual Averages, 1946 and 1953-62

Notr.-Comparable figures for 1947-52 are given in the 1962 Year Book, p. 708. Figures do not include inmates of institutions and Indians on reservations. Newfoundland is included from 1950 only.

| Year | Civilian <br> Population (14 years of age or over) | Civilian Labour Force (14 years of age or over) |  |  |  |  |  |  | Persons not in the Labour Force (14 years of age or over) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Employed |  |  |  |  | $\underset{\text { Un- }}{\text { Unployed }}$ | Total <br> Labour <br> Force |  |
|  |  | Non-agriculture |  |  | Agriculture | Total (employed) |  |  |  |
|  |  | Paid Workers | Other | Total (non-agriculture) |  |  |  |  |  |
|  | '000 | '000 | '000 | '000 | '000 | '000 | '000 | '000 | '000 |
| 1946.. | 8,779 | 2,990 | 490 | 3,480 | 1,186 | 4,666 | 163 | 4,829 | 3,950 |
| 1953. | 10,164 | 3,842 | 535 | 4,377 | 858 | 5,235 | 162 | 5,397 | 4,767 |
| 1954. | 10,391 | 3,840 | 525 | 4,265 | 878 | 5,243 | 250 | 5,493 | 4,898 |
| 1955. | 10,597 | 4,027 | 519 | 4,546 | 819 | 5,364 | 245 | 5,610 | 4,987 |
| 1956. | 10,805 | 4,286 | 523 | 4,809 | 776 | 5,585 | 197 | 5,782 | 5,023 |
| 1957. | 11,108 | 4,440 | 542 | 4,981 | 744 | 5,725 | 278 | 6,003 | 5,105 |
| 1958. | 11,357 | 4,454 | 529 | 4,983 | 712 | 5,695 | 432 | 6,127 | 5,230 |
| 1959. | 11,562 | 4,615 | 548 | 5,163 | 692 | 5,856 | 373 | 6,228 | 5,334 |
| 1960. | 11,789 | 4,727 | 553 | 5,280 | 675 | 5,955 | 448 | 6,403 | 5,386 |
| 1961. | 12,010 | 4,798 | 577 | 5,375 | 674 | 6,049 | 469 | 6,518 | 5,492 |
| 1962. | 12,224 | 4,978 | 587 | 5,564 | 653 | 6,217 | 391 | 6,608 | 5,616 |

Characteristics of the Civilian Labour Force, 1946-62.-The civilian noninstitutional population averaged $12,224,000$ in 1962 compared with $8,779,000$ in 1946, an increase of 39.2 p.c., and during the same period the labour force rose by only 37.1 p.c. to $6,608,000$. Thus, the proportion of the population 14 years of age or over in the labour force, which was 55.0 p.c. in 1946, dropped to 54.1 p.c. in 1962 . Contributing to this decrease were such factors as shifts in the age composition of the population, the tendency for young people to remain in school until they are a little older and the tendency for older persons to retire at an earlier age. The effect of these factors was greater among men, whose rate of labour force participation dropped from 85.2 p.c. in 1946 to 79.3 p.c. in 1962. Although the growth in the female labour force was also affected by these factors, there was an offsetting development. From 1953 there was a rapid increase in job opportunities for women, particularly married women. The female participation rate dropped slightly
from 24.7 p.c. in 1946 to 23.4 p.c. in 1953 and then rose to 29.1 p.c. in 1962 . During the 1953-62 period, the participation rate for the female group 25-44 years of age rose from 23.1 p.c. to 29.7 p.c. and for the $45-64$ age group from 17.2 p.c. to 29.4 p.c. In 1962, women in the labour force numbered $1,789,000$, about half of whom were married (excluding widowed, divorced and separated). Total employment in that year averaged $6,217,000$, an increase of 33.2 p.c. over 1946. The number of men employed ( $4,487,000$ ) was 24.3 p.c. higher and the number of women employed $(1,730,000)$ was 63.7 p.c. higher.

Between 1946 and 1962, employment in agriculture dropped from 1,186,000 to 653,000, a decline of 44.9 p.c. On the other hand, employment in non-agricultural industries increased by 59.9 p.c. from $3,480,000$ to $5,564,000$ and the number of paid workers employed in non-agricultural industries rose by 66.5 p.c. from $2,990,000$ to $4,978,000$. Important changes also occurred in the distribution of employment among industries. In 1962, the goods-producing industries accounted for 45 p.c. and the service-producing industries for 55 p.c. of total employment compared with 60 p.c. and 40 p.c., respectively, in 1946. The most notable shift was in agriculture. In 1946, about one in four employed persons worked in agriculture whereas in 1962 the proportion was one in ten. In other primary industries the proportion employed also declined substantially but in manufacturing it remained about the same. In all other industry groups the proportion employed was higher in 1962 than in 1946. In the later year, almost one out of every two employed women worked in service industries as compared with one out of every three in 1946.

On an annual average basis, unemployment as a percentage of the labour force fluctuated widely during the period, ranging between 2.2 p.c. in 1947 and 7.2 p.c. in 1961; it averaged 5.9 p.c. in 1962. Throughout the period, unemployment rates were substantially lower for women than for men.

The number of persons 14 years of age or over not in the labour force averaged $5,616,000$ in 1962 compared with $3,950,000$ in 1946, an increase of 42 p.c. Housewives and students together constituted more than 80 p.c. of the total in the later year; the number of women keeping house increased by almost one third during the period and the number of students more than doubled.

## 3.-Percentage Distribution of the Population 14 Years of Age or Over in the Labour Force and Non-labour Force Categories, by Sex, 1946 and 1953-62

Note.-Comparable figures for 1947-52 are given in the 1962 Year Book, pp. 710-711. Newfoundland included from 1950 only.

| 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 |  | Unem ployed | Total | Women Keeping House | Persons Going to School | Other | Total |
|  |  | Agriculture | Non- agri- culture |  |  |  |  |  |  |
|  | Males |  |  |  |  |  |  |  |  |
| 1946.. | $\begin{aligned} & \hline 000 \\ & 4,400 \end{aligned}$ | $\begin{aligned} & \text { p.c. } \\ & 23.4 \end{aligned}$ | $\begin{aligned} & \text { p.c. } \\ & 58.7 \end{aligned}$ | $\begin{array}{r} \text { p.c. } \\ 3.1 \end{array}$ | $\begin{aligned} & \text { p.c. } \\ & 85.2 \end{aligned}$ | p.c. | p.c. | p.c. | $\begin{aligned} & \text { p.c. } \\ & 14.8 \end{aligned}$ |
| 1953.... | 5,075 5,188 | 16.1 16.2 | 64.0 61.8 | 2.8 4.2 | 82.9 82.2 | $\ldots$ | 5.6 5.8 | 11.5 12.0 | 17.1 |
| 1955. | 5,290 | 14.8 | 63.3 | 4.0 | 82.1 | $\ldots$ | 6.0 | 11.9 | 17.9 |
| 1956. | 5,397 | 13.6 | 65.4 | 3.2 | 82.2 | ... | 6.2 | 11.6 | 17.7 |
| 1957. | 5,552 | 12.7 | 65.2 | 4.4 | 82.3 | ... | 6.3 | 11.4 | 17.7 |
| 1958. | 5,671 | 11.6 | 63.4 | 6.7 | 81.7 | ... | 6.8 | 11.5 | 18.3 |
| 1959. | 5,767 | 11.2 | 64.3 | 5.6 | 81.1 | ... | 7.3 | 11.6 | 18.9 |
| 1960. | 5,876 | 10.6 | 63.6 | 6.6 | 80.8 | ... | 7.6 | 11.6 | 19.2 |
| 1961. | 5,980 | 10.3 | 62.9 | 6.8 5.5 | 80.0 79.3 | $\ldots$ | 8.1 8.6 | 11.9 12.1 | 20.7 |
| 1962. | 6,078 | 9.7 | 64.1 | 5.5 | 79.3 | ... | 8.6 | 12.1 | 20.7 |

3.-Percentage Distribution of the Population 14 Years of Age or Over in the Labour Force and Non-labour Force Categories, by Sex, 1946 and 1953-62-concluded

| 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 | WomenKeepingHouse |  | Other | Total |
|  |  | Agri- culture | Non- agri- culture |  |  |  |  |  |  |
| Females |  |  |  |  |  |  |  |  |  |
| 1946.. | $\begin{aligned} & \prime 000 \\ & 4,379 \end{aligned}$ | $\begin{array}{r} \text { p.c. } \\ 3.6 \end{array}$ | $\begin{aligned} & \text { p.c. } \\ & 20.5 \end{aligned}$ | $\begin{array}{r} \text { p.c. } \\ 0.6 \end{array}$ | $\begin{aligned} & \text { p.c. } \\ & 24.7 \end{aligned}$ | $\begin{gathered} \text { p.c. } \\ 63.2 \end{gathered}$ | $\begin{array}{r} \text { p.c. } \\ 5.1 \end{array}$ | $\begin{aligned} & \text { p.c. } \\ & 7.0 \end{aligned}$ | p.c. $75.3$ |
| 1953. | 5,089 | 0.8 | 22.2 | 0.4 | 23.4 | 66.7 | 5.3 | 4.6 | 76.6 |
| 1954. | 5,203 5,306 | 0.8 | 22.3 22.6 | 0.6 0.6 | 23.7 23.9 | 66.5 66.0 | 5.3 5.5 | 4.5 4.6 | 76.3 |
| 1956. | 5,408 | 0.7 | 23.7 | 0.5 | 24.9 | 64.9 | 5.5 | 4.7 | 75.1 |
| 1957. | 5,555 | 0.7 | 24.5 | 0.6 | 25.8 | 63.9 | 5.7 | 4.6 | 74.2 |
| 1958. | 5,686 | 0.9 | 24.4 | 1.0 | 26.3 | 63.2 | 6.1 | 4.4 | 73.7 |
| 1959. | 5,795 | 0.8 | 25.1 | 0.8 | 26.7 | 62.3 | 6.4 | 4.6 | 73.3 |
| 1960. | 5,914 | 0.9 | 26.1 | 1.0 | 28.0 | 60.9 | 6.6 | 4.5 | 72.0 |
| 1961. | 6,030 | 0.9 | 26.8 | 1.1 | 28.8 | 59.8 | 7.0 | 4.4 | 71.2 |
| 1962. | 6,147 | 1.0 | 27.1 | 1.0 | 29.1 | 59.0 | 7.4 | 4.5 | 70.9 |

4.-Percentage Distribution of the Employed by Industrial Group, 1946 and 1953-62

Note.-Comparable figures for 1947-52 are given in the 1962 Year Book, p. 711.

| Year | Total Employed | Percentage Distribution |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Agriculture | Other Primary Industries | Manufacturing | Construction | Transportation and Other Utilities | Trade | Finance, Insurance and Real Estate | Service |
|  | '000 | p.c. | p.c. | p.c. | p.c. | p.c. | p.c. | p.c. | p.c. |
| 1946...... | 4,666 | 25.4 | 4.0 | 26.0 | 4.8 | 8.1 | 12.3 | 2.6 | 16.8 |
| 1953. | 5,235 | 16.4 | 3.8 | 26.4 | 6.6 | 9.2 | 15.6 | 3.2 | 18.8 |
| 1954. | 5,243 | 16.8 | 4.1 | 25.3 | 6.4 | 8.7 | 15.8 | 3.2 | 19.7 |
| 1955. | 5,364 | 15.3 | 4.5 | 25.6 | 6.9 | 8.7 | 15.7 | 3.3 | 20.0 |
| 1956. | 5,585 | 13.9 | 4.6 | 25.7 | 7.4 | 8.9 | 15.8 | 3.5 | 20.2 |
| 1957. | 5,725 | 13.0 | 4.3 | 26.1 | 7.6 | 8.9 | 15.7 | 3.6 | 20.8 |
| 1958. | 5,695 | 12.5 | 3.7 | 25.6 | 7.5 | 8.9 | 16.0 |  |  |
| 1959. | 5,856 | 11.8 | 3.4 | 25.5 | 7.5 | 8.9 | 16.2 | 3.7 | 23.0 |
| 1960. | 5,955 | 11.3 | 3.5 | 24.7 | 7.0 | 8.6 | 16.5 | 3.8 | 24.6 |
| 1962.. | 6,049 6,217 | 11.1 | 3.0 2.8 | 25.0 | 6.7 | 8.4 | 16.3 | 4.0 | 25.5 |
| 1962. | 6,217 | 10.5 | 2.8 | 25.2 | 6.9 | 8.5 | 16.1 | 4.0 | 26.0 |

Employment was substantially higher in 1962 than in 1946 in all regions. British Columbia experienced the largest increase of 43.1 p.c. followed by Ontario with 39.5 p.c., Quebec with 32.7 p.c., the Prairie region with 17.3 p.c. and the Atlantic region (excl. Newfoundland) with 10.2 p.c. In all regions, however, the increase in employment was not as great as the growth of the labour force and, as a consequence, there was a rise in unemployment. Unemployment in Canada averaged 391,000 in 1962, 5.9 p.c. of the labour force. The unemployed were distributed regionally as follows: Quebec 35.3 p.c., Ontario 26.6 p.c., Atlantic 16.4 p.c., Prairie 11.5 p.c. and British Columbia 10.2 p.c. In 1946 the unemployed were distributed among the regions in just about the same proportions.

Similarly, unemployment rates were higher in 1962 than in 1946. In the later year, the unemployed as a percentage of the labour force in each of the five regions was as follows: Atlantic 10.7 p.c., Quebec 7.5 p.c., Ontario 4.3 p.c., Prairie 3.9 p.c. and British Columbia 6.7 p.c. From 1946 on, unemployment rates for the Atlantic region and Quebec were consistently higher than the national average and for Ontario and the Prairie region they were consistently lower. The British Columbia rate was above the national average in every year except 1955 and 1956.

## 5.-Estimates of Employment and Unemployment, by Region, 1946 and 1953-62

Note.-Comparable figures for 1947-52 are given in the 1962 Year Book, p. 712.

| Year | Atlantic ${ }^{1}$ |  | Quebec |  | Ontario |  | Prairie |  | British Columbia |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Employment | Unemployment | $\begin{array}{\|c} \text { Employ- } \\ \text { ment } \end{array}$ | Unemployment | Employment | Unemployment | Employment | Unemployment | Employment | Unemployment |
|  | '000 | '000 | '000 | '000 | '000 | '000 | '000 | '000 | '000 | '000 |
| 1946. | 392 | 23 | 1,283 | 54 | 1,654 | 48 | 947 | 21 | 390 | 16 |
| 1953.. | 478 | 28 | 1,480 | 58 | 1,907 | 41 | 938 | 18 | 432 | 18 |
| 1954.. | 468 | 33 | 1,470 | 92 | 1,945 | 77 | 925 | 24 | 437 | ${ }_{24}$ |
| 1955. | 478 | 33 | 1,493 | 98 | 1,993 | 66 | 939 | 30 | 462 | 18 |
| 1956.. | 489 | 31 | 1,535 | 80 | 2,096 | 51 | 975 | 22 | 490 | 14 |
| 1957. | 496 | 45 | 1,574 | 101 | 2,157 | 77 | 988 | 27 | 511 | 27 |
| 1958. | 476 | 68 | 1,577 | 153 | 2,133 | 122 | 1,004 | 43 | 504 | 47 |
| 1959.. | 493 | 60 | 1,613 | 138 | 2,187 | 103 | 1,036 | 35 | 526 | 36 |
| 1960.. | 507 | 60 | 1,632 | 164 | 2,239 | 128 | 1,053 | 46 | 524 | 50 |
| 1961.. | 526 | 66 | 1,644 | 168 | 2,261 | 132 | 1,083 | 52 | 536 | 50 |
| 1962. | 536 | 64 | 1,703 | 138 | 2,308 | 104 | 1,111 | 45 | 558 | 40 |

${ }^{1}$ Newfoundland included from 1950.

## Section 3.-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. During the war period also, separate records for men and women employees were established.

The survey covers firms that usually employ 15 persons or more in all sectors of the following major industrial divisions: forestry; mining; manufacturing; construction; transportation, storage and communication; public utility operation; trade; finance, insurance and real estate. Also included are certain branches of the service industry, mainly hotels and restaurants, laundries and dry-cleaning plants, 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 $(1949=100)$.

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, piecework and time work payments, and such items as shift premiums, and regularly paid production, 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.

## Subsection 1.-Employment and Weekly Wages and Salaries

During the interwar period, the composite employment index $(1949=100)$ rose steadily from a postwar recession level of 46.9 in 1921 to a high of 62.8 in the boom year of 1929, but the severe depression that followed reduced the annual figure to a low of 44.0

[^209]in 1933. Slow recovery in the next six years left the index slightly lower in 1939 than in 1929. With the outbreak of World War II, employment began to increase under the stimulus of production for military requirements. In 1943, a wartime peak of 93.0 was reached, more than 50 p.c. above the 1939 level. A declining tendency that became evident in 1944 persisted after the end of the War. However, the impact of cutbacks in wartime production was cushioned by public demand for goods and services that had been largely unavailable during the war years, so that the over-all loss recorded in 1946 was small. The index showed successive gains from 1947 until a peak of 113.1 was reached in 1953. A slight decline in 1954 was followed by further advances that brought the index to 122.6 in 1957. During the next four years the industrial composite index did not vary greatly, fluctuating around levels some 3 p.c. to 4 p.c. below the 1957 peak.

A general recovery in employment commenced in the second quarter of 1961 and continued through 1962. Employment rose substantially in all the goods-producing industries. Because of the low levels early in 1961, however, the annual averages of employment for that year were lower than in 1960, except in non-durable goods manufacturing. In forestry and mining there have been long-term trends toward reduced levels of employment in particular areas or segments within the divisions, and the gains of early 1961 were not maintained in 1962. Construction was at a fairly low level early in 1961; an upward trend beginning in the second quarter continued into 1962. All service-producing industrial divisions showed employment gains in 1961 and 1962 except transportation, storage and communication. The percentage gains were largest in finance, insurance and real estate and in service.
6.-Annual Average Index Numbers of Employment by Industrial Division, Significant Years 1921-62, and Monthly Indexes 1962
Nore.-These indexes are calculated as at the last pay period of each month, on the base $1949=100$.

| $\begin{aligned} & \text { Year } \\ & \text { and Month } \end{aligned}$ | $\begin{gathered} \text { Forest- } \\ \text { ry } \\ \text { (chiefly } \\ \text { log- } \\ \text { ging) } \end{gathered}$ | Mining | Manu-facturing | Con-struction |  | Public Utility Operation | Trade | Finance, Insurance and Real Estate | Service ${ }^{1}$ | Industrial Composite |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Averages- |  |  |  |  |  |  |  |  |  |  |
| 1921. | 51.3 | 56.1 | 44.0 | 30.3 | 66.5 | 34.3 | 41.8 |  | 34.6 | 46.9 |
| 1926. | 49.5 | 57.0 | 49.9 | 45.1 | 73.3 | 41.4 | 44.7 |  | 41.1 | 52.6 |
| 1933. | 33.1 | 55.8 | 40.5 | 37.2 | 56.5 | 45.1 | 50.5 | . | 44.1 | 44.0 |
| 1939. | 59.3 | 93.7 | 56.3 | 62.0 | 59.8 | 54.9 | 61.5 | $\because$ | 56.8 | 60.1 |
| 1940 | 82.2 | 95.8 | 65.1 | 47.1 | 62.2 | 56.0 | 63.7 | 67.3 | 57.9 | 64.7 |
| 1945. | 119.7 | 82.3 | 100.0 | 53.8 | 86.0 | 61.1 | 76.2 | 77.4 | 81.1 | 88.8 |
| 1949. | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1950 | 104.8 | 106.0 | 101.4 | 103.1 | 100.2 | 101.2 | 103.6 | 105.9 | 101.0 | 102.1 |
| 1953. | 98.3 | 110.8 | 113.0 | 118.1 | 111.2 | 112.4 | 113.1 | 122.4 | 108.8 | 113.1 |
| 1954. | 96.3 | 110.4 | 107.3 | 110.6 | 109.0 | 116.1 | 114.8 | 128.0 | 111.7 | 109.9 |
| 1955. | 102.9 | 113.7 | 109.8 | 115.0 | 110.8 | 119.2 | 118.7 | 132.1 | 115.0 | 112.9 |
| 1956. | 113.2 | 122.7 | 115.8 | 121.8 | 118.3 | 126.3 | 126.3 | 137.1 | 125.1 | 120.7 |
| 1957. | 99.3 | 127.2 | 115.8 | 135.7 | 120.4 | 133.6 | 131.8 | 145.0 | 131.9 | 122.6 |
| 1958 | 75.9 | 123.5 | 109.8 | 126.2 | 115.5 | 137.6 | 131.6 | 149.3 | 135.1 | 117.9 |
| 1959. | 78.9 | 123.4 | 111.1 | 130.3 | 114.3 | 138.7 | 135.3 | 153.2 | 139.3 | 119.7 |
| 1960 | 84.0 | 120.1 | 109.5 | 125.7 | 111.1 | 137.8 | 136.7 | 156.7 | 143.2 | 118.7 |
| 1961. | 71.6 | 116.5 | 108.9 | 121.7 | 108.6 | 138.3 | 137.8 | 163.1 | 148.9 | 118.1 |
| 1962 | 70.9 | 116.4 | 113.3 | 124.3 | 108.3 | 141.6 | 140.6 | 170.1 | 156.5 | 121.4 |
| 1962- |  |  |  |  |  |  |  |  |  |  |
| January. | 77.5 | 114.0 | 108.5 | 102.0 | 102.3 | 135.8 | 135.8 | 167.4 | 147.7 | 115.2 |
| February | 68.2 | 113.7 | 108.9 | 100.1 | 102.8 | 135.5 | 133.7 | 167.7 | 147.7 | 114.7 |
| March. | 47.1 | 114.3 | 109.6 | 103.2 | 103.4 | 135.7 | 135.6 | 168.4 | 149.6 | 115.2 |
| April. | 34.4 | 113.3 | 110.4 | 112.3 | 105.9 | 136.7 | 137.7 | 168.5 | 152.0 | 116.7 |
| May. | 51.9 | 117.8 | 113.7 | 127.5 | 109.3 | 141.9 | 139.6 | 168.2 | 157.7 | 121.3 |
| June. | 75.0 | 121.0 | 116.4 | 137.8 | 110.0 | 145.2 | 141.2 | 169.3 | 163.3 | 125.0 |
| July | 78.6 | 121.2 | 115.5 | 144.5 | 114.2 | 149.4 | 140.1 | 169.8 | 164.3 | 125.8 |
| August. | 80.2 | 120.7 | 117.6 | 146.0 | 113.9 | 149.4 | 140.0 | 169.8 | 167.4 | 127.0 |
| September | 85.9 | 118.2 | 117.6 | 141.9 | 112.0 | 144.7 | 142.3 | 169.5 | 162.0 | 126.5 |
| October | 88.4 | 116.1 | 115.9 | 137.6 | 110.8 | 143.7 | 144.0 | 173.7 | 157.7 | 125.4 |
|  | 85.8 | 114.3 | 114.7 | 130.5 | 109.2 | 141.6 | 147.5 | 174.2 | 155.7 | 124.3 |
| Decem | 78.3 | 112.5 | 110.9 | 108.7 | 106.4 | 139.3 | 150.2 | 174.5 | 153.2 | 120.2 |

${ }^{1}$ Consists mainly of hotels, restaurants, laundries, dry-cleaning establishments and recreational and business services.

# 7.-Annual Average Index Numbers of Employment, by Industrial Division and Group, 1957-62 

Note.-These indexes are calculated as at the last pay period of each month, on the base $1949=100$.

7.-Annual Average Index Numbers of Employment, by Industrial Division and Group, 1957-62-concluded

| Industry | 1957 | 1958 | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Manufacturing-concluded |  |  |  |  |  |  |
| Electrical apparatus and supplies.............. | 150.4 | 135.7 | 135.8 | 133.1 | 132.9 | 148.1 |
| Heavy electrical machinery.... | 139.8 | 121.6 | 111.8 | 105.4 | 99.4 | 109.0 |
| Telecommunication equipment | 225.2 | 211.7 | 210.5 | 214.3 | 228.1 | 268.7 1467 |
| Non-metallic mineral products. Clay products............. | 132.2 102.3 | 133.2 102.1 | 143.1 | 140.0 89.8 | 138.2 85.8 | 146.7 90.0 |
| Glass and glass products | 132.1 | 133.5 | 149.3 | 151.0 | 155.3 | 158.3 |
| Concrete products. |  |  |  | 249.2 | 232.9 | 256.5 |
| Products of petroleum and coal. | 140.0 | 139.7 | 138.5 | 137.5 | 137.0 | 139.3 |
| Petroleum refining. |  | 141.8 | 140.7 | 140.3 | 139.9 | 141.8 |
| Chemical products... | 133.5 | 131.2 | 129.4 | 132.3 | 131.4 | 132.6 |
| Medicinal and pharmaceutical preparations.. | 117.1 | 119.0 | 119.2 | 118.0 | 119.2 | 122.6 |
| Acids, alkalies and salts. . . . . . . . . | 146.9 | 148.1 | 145.5 | 155.3 | 154.9 | 152.4 |
| Other chemical products. | 134.5 | 130.7 | 128.4 | 130.8 | 129.3 | 130.7 |
| Miscellaneous manufacturing industries......... | 113.7 | 119.9 | 126.5 | 130.3 | 137.8 | 145.2 |
| Construction | 135.7 | 126.2 | 130.3 | 125.7 | 121.7 | 124.3 |
| Building and general engineering. | 144.4 | 127.6 | 129.0 | 121.9 | 117.7 | 121.8 |
| Building. | 147.7 | 130.1 | 136.5 | 128.6 | 122.4 | 127.9 |
| General engineering | 130.8 | 117.1 | 98.0 | 94.0 | 97.9 | 97.3 |
| Highways, bridges and streets. | 122.0 | 124.2 | 132.3 | 132.0 | 128.5 | 128.6 |
| Transportation, Storage and Communication | 120.4 | 115.5 | 114.3 | 111.1 | 108.6 | 108.4 |
| Transportation.. | 111.8 | 105.0 | 104.5 | 101.4 | 99.2 | 98.8 |
| Air transport and airports. | 190.7 | 187.3 | 192.9 | 211.4 | 219.5 | 221.8 |
| Steam railways | 107.7 | 97.7 | 95.6 | 89.5 | 85.0 | 83.2 |
| Maintenance of equipment | 106.9 | 92.6 | 87.0 | 77.8 | 74.8 | 73.9 |
| Maintenance of ways and structures | 102.2 | 93.5 | 93.9 | 84.8 | 79.1 | 74.2 |
| Transportation-steam railways. | 108.5 | 98.5 | 96.0 | 91.7 | 87.3 | 86.3 |
| Telegraphs. | 126.8 | 122.3 | 121.9 | 117.9 | 114.1 | 115.6 |
| Water transportation. | 100.1 | 96.9 | 94.6 | 92.7 | 90.2 | 90.5 |
| Electric and motor transportation. | 123.5 | 124.1 | 129.3 | 132.3 | 135.6 | 137.9 |
| Urban and interurban transportation | 86.5 | 84.4 | 82.3 | 82.0 | 80.9 | 79.1 |
| Truck transportation. | 189.1 | 191.5 | 211.6 | 216.9 | 220.8 | 222.1 |
| Storage. | 115.8 | 115.3 | 114.4 | 108.6 | 106.3 | 102.4 |
| Grain elevators | 104.2 | 104.9 | 103.2 | 100.1 | 97.5 | 92.4 |
| Storage and warehouses | 150.5 | 145.9 | 147.0 | 133.4 | 132.3 | 131.9 |
| Communication. | 167.4 | 171.0 | 1665 | 163.8 | 160.1 | 162.0 |
| Radio broadcasting | 294.2 | 307.1 | 319.6 | 339.6 | 357.1 | 372.7 |
| Telephone........ | 155.7 | 154.2 | 148.3 | 143.6 | 138.5 | 139.5 |
| Public Utility Operation. | 133.6 | 137.6 | 138.7 | $13 \% .8$ | 138.3 | 141.6 |
| Electric light and power. | 133.9 | 136.2 | 135.5 | 134.9 | 136.1 | 138.2 |
| Other public utilities. | 132.6 | 143.8 | 152.0 | 149.3 | 146.5 | 154.0 |
| Trade | 131.8 | 131.6 | 135.3 | 136.7 | 137.8 | 140.6 |
| Wholessle | 133.2 | 131.8 | 134.8 | 136.1 | 136.1 | 139.5 |
| Retail. | 131.0 | 131.6 | 135.6 | 137.1 | 138.7 | 141.3 |
| Food. | 164.9 | 171.9 | 178.8 | 189.1 | 194.7 | 197.4 |
| Department sto | 114.6 | 113.9 | 117.4 | 118.8 | 121.4 | 122.9 |
| Variety stores. | 126.9 | 125.9 | 129.2 | 129.7 | 131.2 | 128.8 |
| Automotive products....................... | 166.0 | 160.8 | 164.9 | 166.1 | 163.1 | 170.9 |
| Finance, Insurance and Real Estate | 145.0 | 149.3 | 153.2 | 156.7 | 163.1 | 170.1 |
| Banking, investment and loan | 148.4 | 150.1 | 153.6 | 157.5 | 164.1 | 171.6 |
| Insurance............... | 137.1 | 145.1 | 149.7 | 152.4 | 157.3 | 162.3 |
| Serrice. | 131.9 | 135.1 | 139.3 | 143.2 | 148.9 | 156.5 |
| Hotels and restaurant | 125.5 | 125.6 | 128.6 | 130.1 | 129.9 | 135.0 |
| Laundries and dry-cleaning | 114.0 | 115.0 | 113.3 | 114.1 | 122.0 | 130.3 |
| Business service. | .. | .. | 245.9 | 246.1 | 263.9 | 282.8 |
| Industrial Composite.................. | 122.6 | 117.9 | 119.7 | 118.7 | 118.1 | 121.4 |

8.-Annual Average Index Numbers of Employment, by Province, Significant Years 1939-62, and Monthly Indexes 1962
Noтe.-These indexes are calculated as at the last pay period of each month, on the base $1949=100$.

| Year and Month | Nfld. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Averages- |  |  |  |  |  |  |  |  |  |  |  |
| 1939. | . | 64.1 | 66.8 | 59.6 | 64.6 | 57.3 | 59.7 | 71.4 | 55.1 | 55.8 | 60.1 |
| 1940 |  | 67.2 | 71.4 | 67.4 | 67.4 | 64.2 | 63.4 | 70.1 | 57.4 | 58.0 | 64.7 |
| 1945. | . | 81.9 | 101.5 | 98.6 | 92.8 | 86.7 | 85.3 | 86.4 | 76.3 | 87.5 | 88.8 |
| 1949 |  | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1950 |  | 110.3 | 95.6 | 102.6 | 100.5 | 102.7 | 100.8 | 100.8 | 104.5 | 100.8 | 102.1 |
| 1953. | 140.4 | 115.5 | 101.0 | 100.8 | 112.4 | 114.5 | 107.0 | 116.2 | 128.5 | 108.2 | 113.1 |
| 1954. | 128.0 | 109.9 | 97.6 | 98.0 | 109.2 | 110.6 | 104.7 | 118.0 | 128.0 | 106.3 | 109.9 |
| 1955 | 131.1 | 114.2 | 97.1 | 103.5 | 112.5 | 113.5 | 105.2 | 117.0 | 133.0 | 111.9 | 112.9 |
| 1956. | 136.9 | 117.4 | 101.7 | 110.1 | 120.1 | 121.4 | 108.6 | 121.1 | 148.5 | 121.5 | 120.7 |
| 1957 | 130.1 | 115.2 | 100.2 | 103.8 | 121.5 | 124.3 | 110.9 | 125.3 | 152.2 | 123.9 | 122.6 |
| 1958 | 122.6 | 114.9 | 95.5 | 98.0 | 117.0 | 119.6 | 108.7 | 126.6 | 150.5 | 114.7 | 117.9 |
| 1959. | 125.8 | 126.3 | 96.3 | 101.7 | 118.5 | 121.3 | 112.2 | 130.0 | 155.0 | 115.1 | 119.7 |
| 1960. | 129.7 | 128.5 | 95.5 | 103.4 | 118.6 | 119.2 | 111.0 | 126.0 | 153.3 | 114.7 | 118.7 |
| 1961. | 131.7 | 130.7 | 94.0 | 103.9 | 118.3 | 118.7 | 110.0 | 123.1 | 154.2 | 112.3 | 118.1 |
| 1962. | 133.2 | 135.8 | 94.4 | 103.8 | 121.6 | 123.0 | 111.1 | 124.6 | 158.1 | 115.7 | 121.4 |
| 1962- |  |  |  |  |  |  |  |  |  |  |  |
| January | 122.7 | 109.3 | 89.0 | 101.9 | 115.7 | 117.7 | 105.1 | 112.4 | 148.8 | 105.9 | 115.2 |
| February | 116.8 | 106.2 | 88.6 | 99.8 | 115.2 | 117.1 | 104.8 | 112.1 | 147.6 | 108.1 | 114.7 |
| March | 113.3 | 112.0 | 87.8 | 97.0 | 114.6 | 118.0 | 105.8 | 113.5 | 148.9 | 110.4 | 115.2 |
| April. | 115.5 | 114.6 | 91.0 | 92.4 | 116.3 | 119.9 | 106.9 | 117.2 | 149.0 | 111.6 | 116.7 |
| May | 127.5 | 141.6 | 97.1 | 103.0 | 120.5 | 123.4 | 110.6 | 127.0 | 157.4 | 115.7 | 121.3 |
| June. | 145.6 | 150.9 | 98.4 | 110.8 | 124.8 | 125.7 | 114.4 | 132.3 | 164.7 | 119.1 | 125.0 |
| July | 150.5 | 158.1 | 97.6 | 109.0 | 125.9 | 125.2 | 116.1 | 135.3 | 168.2 | 123.6 | 125.8 |
| August | 148.1 | 161.1 | 99.0 | 110.3 | 127.2 | 126.6 | 117.8 | 135.8 | 169.4 | 123.5 | 127.0 |
| Septemb | 150.6 | 158.8 | 98.5 | 107.9 | 126.6 | 126.8 | 116.7 | 133.1 | 167.4 | 121.8 | 126.5 |
| October | 147.3 | 154.3 | 96.6 | 107.6 | 126.4 | 126.2 | 115.3 | 130.6 | 161.9 | 118.3 | 125.4 |
| November | 138.3 | 145.4 | 96.2 | 104.6 | 125.4 | 126.3 | 111.9 | 125.7 | 158.4 | 116.5 | 124.3 |
| December. | 122.6 | 117.6 | 93.4 | 101.9 | 120.2 | 123.0 | 108.0 | 120.8 | 156.0 | 113.2 | 120.2 |

9.-Annual Average Index Numbers of Employment, by Metropolitan Area, Significant Years 1939-62 and Monthly Indexes 1962
Note.-These indexes are calculated as at the last pay period of each month, on the base $1949=100$.

| Year and Month | Montreal | Quebec | Toronto | Ottawa- <br> Hull | Hamilton | Windsor | Winnipeg | $\begin{gathered} \text { Van- } \\ \text { couver } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Averages- |  |  |  |  |  |  |  |  |
| 1939. | 60.9 | 67.5 | 56.3 |  | 53.1 | 47.1 | 59.2 | 59.7 |
| 1940. | 64.2 | 69.5 | 61.9 | 63.5 | 63.0 | 56.3 | 62.8 85.9 | 53.5 |
| 1945. | 90.4 | 109.3 | 89.2 | 82.8 | 87.6 | 84.1 100.0 | 85.9 100.0 | 96.1 100.0 |
| 1949. | 100.0 101.3 | 100.0 98.7 | 100.0 | 100.0 | 100.0 100.8 | 100.0 102.2 | 100.0 | 100.0 99.0 |
| 1953 | 113.7 | 110.8 | 119.8 | 109.2 | 111.1 | 110.9 | 103.9 | 102.1 |
| 1954. | 110.7 | 110.5 | 120.1 | 109.9 | 103.6 | 91.5 | 103.4 | 102.6 |
| 1955. | 113.4 | 108.0 | 121.6 | 114.0 | 106.4 | 103.4 | 104.6 | 107.9 |
| 1956. | 120.2 | 111.0 | 128.3 | 119.6 | 113.8 | 104.9 | 106.8 | 117.4 |
| 1957. | 124.6 | 110.8 | 132.1 | 120.3 | 114.4 | 95.9 | 107.7 | 120.4 |
| 1958. | 121.5 | 108.1 | 131.0 | 121.2 | 105.0 | 78.6 | 107.5 | 114.8 |
| 1959. | 123.3 | 110.4 | 131.3 | 124.9 | 112.0 | 79.3 | 111.3 | 116.0 |
| 1960 | 123.1 | 110.4 | 129.9 | 124.2 | 111.3 | 76.2 | 111.4 | 113.8 |
| 1961. | 123.3 | 113.3 | 131.8 | 127.9 | 108.1 | 72.8 | 110.3 | 111.3 |
| 1962. | 126.9 | 120.0 | 137.3 | 133.8 | 113.2 | 72.1 | 110.6 | 114.2 |
| 1962- |  |  |  |  |  |  |  |  |
| January. | 122.5 | 111.0 | 132.1 | 127.8 | 107.8 | 71.0 | 105.8 | 107.1 |
| February | 122.8 | 112.4 | 131.8 | 126.2 | 103.3 | 64.0 | 105.4 | 107.9 |
| March | 124.0 | 113.9 | 133.2 | 127.7 | 109.1 | 64.0 | 106.4 |  |
| April. | 125.5 | 116.9 | 134.7 | 130.1 | 111.3 | 73.1 | 107.8 | 111.6 |
| May. | 127.3 | 119.2 | 137.0 138.4 | 135.0 138.7 | 114.2 | 74.4 74.1 | 110.5 113.2 | 114.2 |
| June. | 129.3 128.1 | 122.9 122.7 | 138.4 138.6 | 138.7 138.7 | 116.3 116.0 | 74.1 70.2 | 113.2 | 119.1 |
| August | 129.4 | 125.2 | 139.7 | 139.9 | 114.5 | 75.0 | 115.0 | 119.7 |
| Septemb | 129.6 | 125.2 | 140.2 | 136.1 | 115.2 | 75.1 | 114.8 | 118.3 |
| October. | 129.8 | 125.5 | 141.4 | 136.2 | 114.5 | 74.7 | 113.8 | 115.6 |
| November | 125.2 | 125.2 120.1 | 142.3 138.8 | 136.1 133.2 | 116.5 114.5 | 75.4 73.9 | 111.4 109.6 | 114.9 114.3 |

${ }^{1}$ Includes New Westminster from 1956.

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 $\$ 80.55$ in 1962 . Approximately 15 p.c. of this advance was recorded during the abnormal conditions of the war years. Wartime gains resulted from substantial amounts of overtime work and a concentration of employment in war industries where earnings were relatively high; however, these gains were offset to a degree by wartime regulation of pay rates (as of prices) and dilution of labour through the employment of unskilled and part-time workers, including many inexperienced women. Following the relaxation of wage restrictions in December 1949 and the progressive lifting of price controls, the upward movement in per capita earnings gained momentum. The average annual increases from 1947 to 1962 were more than twice as great as those between 1939 and 1945 . Variations over the years in the occupational and industry mix within the heterogeneous group of industries covered have had, on the whole, a buoyant effect on the per capita earning figures. More recently, year-to-year percentage changes have tended to level, those for 1961 and 1962 approximating 3 p.c.
10.-Annual Index Numbers of Employment and Payrolls, with Average Weekly Wages and Salaries, by Industry, Province and Urban Area, 1960-62

| Industry, Province and Urban Area | Employment$(1949=100)$ |  |  | Payrolls$(1949=100)$ |  |  | Average Weekly Wages and Salaries |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1960 | 1961 | 1962 | 1960 | 1961 | 1962 | 1960 | 1961 | 1962 |
| Industry |  |  |  |  |  |  | $\delta$ | \$ | \$ |
| Forestry (chiefly logging) | 84.0 | 71.6 | 70.9 | 157.5 | 137.8 | 143.9 | 74.85 | 77.05 | 81.42 |
| Mining | 120.1 | 116.5 | 116.4 | 218.8 | 216.9 | 223.1 | 93.80 | 95.90 | 98.82 |
| Manufacturing | 109.5 | 108.9 | 113.3 | 197.0 | 202.8 | 217.4 | 78.19 | 80.73 | 83.17 |
| Durable goods ${ }^{1}$ | 112.6 | 110.6 | 117.0 | 202.5 | 206.0 | 225.0 | 84.20 | 87.08 | 89.80 |
| Non-durable goods ${ }^{1}$ | 106.8 | 107.5 | 110.2 | 191.7 | 199.6 | 210.2 | 72.86 | 75.25 | 77.28 |
| Construction.. | 125.7 | 121.7 | 124.3 | 243.8 | 242.2 | 257.5 | 80.46 | 82.57 | 85.90 |
| Transportation, storage and communication | 111.1 | 108.6 | 108.4 | 190.1 | 194.2 | 200.8 | 82.32 | 85.87 | 88.98 |
| Public utility operation | 137.8 | 138.3 | 141.6 | 266.4 | 276.4 | 292.2 | 91.52 | 94.52 | 97.49 |
| Trade. | 136.7 | 137.8 | 140.6 | 237.4 | 246.2 | 258.9 | 65.19 | 67.05 | 69.18 |
| Finance, insurance and real estate. | 156.7 | 163.1 | 170.1 | 259.9 | 282.0 | 303.1 | 70.83 | 73.92 | 76.37 |
| Service | 143.2 | 148.9 | 156.5 | 253.3 | 274.2 | 297.7 | 53.08 | 55.38 | 57.23 |
| Industrial Composite | 118.7 | 118.1 | 121.5 | 210.9 | 216.5 | 229.8 | 75.83 | 78.11 | 80.58 |
| Province |  |  |  |  |  |  |  |  |  |
| Newfoundland | 129.7 | 131.7 | 133.2 | 233.7 | 249.8 | 258.5 | 67.91 | 71.41 | 73.19 |
| Prince Edward I | 128.5 | 130.7 | 135.8 | 216.3 | 231.5 | 246.6 | 55.00 | 57.03 | 58.10 |
| Nova Scotia | 95.5 | 94.0 | 94.4 | 160.0 | 161.4 | 166.7 | 62.65 | 63.98 | 65.73 |
| New Brunsw | 103.4 | 103.9 | 103.8 | 171.9 | 175.0 | 181.1 | 62.66 | 63.55 | 65.72 |
| Quebec | 118.6 | 118.3 | 121.6 | 211.6 | 218.1 | 232.3 | 73.00 | 75.33 | 77.94 |
| Ontario. | 119.2 | 118.7 | 123.0 | 212.2 | 218.3 | 233.2 | 78.71 | 81.14 | 83.66 |
| Manitoba. | 111.0 | 110.0 | 111.1 | 188.6 | 192.1 | 199.7 | 71.71 | 73.45 | 75.52 |
| Saskatchewan.............. | 126.0 | 123.1 | 124.6 | 218.2 | 219.4 | 230.7 | 72.13 | 74.19 | 77.01 |
| Territories)................. | 153.3 | 154.2 | 158.1 | 268.9 | 280.5 | 292.9 | 77.83 | 80.45 | 82.01 |
| British Columbia (including Yukon Territory) | 114.7 | 112.3 | 115.7 | 209.3 | 211.0 | 223.2 | 82.97 | 85.20 | 87.44 |
| Urban Area |  |  |  |  |  |  |  |  |  |
| St. John's, Nfld. | 131.4 | 134.0 | 141.2 | 226.7 | 241.7 | 267.1 | 55.31 | 57.71 |  |
| Sydney, N.S. | 88.2 | 78.6 | 76.5 | 142.7 | 128.0 | 129.8 | 75.62 | 75.70 | 78.81 |
| Malifax, N.S. | 117.8 | 122.6 | 124.9 | 203.6 | 221.6 | 235.3 | 62.03 | 64.78 | 67.46 |
| Maint John, N. | ${ }^{99.1}$ | 104.7 | 107.6 | 162.1 | 175.1 | 183.8 | 59.31 | 60.56 | 61.96 |
| Chicoutimi-Jonqui | 115.8 | 108.2 | 109.6 | 184.5 | 190.7 | 202.0 | 61.58 | 62.62 | 65.59 |
| Quebec, Que...... | 110.4 | 108.8 113.3 | 120.7 | 214.8 | ${ }_{213}^{211.5}$ | 215.1 | 92.28 | 96.72 | 99.23 |
| Sherbrooke, Qu | 100.5 | 104.1 | 108.9 | 173.9 | 186.0 | ${ }_{202.5}^{233.8}$ | 63.77 62.66 | 66.47 64.69 | 68.94 67.37 |
| Shawinigan, Que | 105.8 | 103.6 | 94.8 | 191.0 | 192.7 | 181.1 | 83.10 | 85.47 | 87.74 |
| Trois Rivières, Q | 112.0 | 110.5 | 115.1 | 191.8 | 196.9 | 209.5 | 70.10 | 72.77 | 74.35 |
| Montreal Qu | 76.1 | 77.9 | 78.3 | 123.6 | 130.2 | 137.6 | 61.10 | 62.92 | 66.08 |
| Ottawa, Ont.-Hil | 123.1 124 | 123.3 | 126.9 | 219.7 | 227.6 | 242.7 | 74.61 | 77.06 | 79.82 |
| Kingston, Ont. . . . . . . . . . . . . . . . . . . | 124.2 112.2 | 127.9 117.9 | 133.8 116.8 | 222.2 209.0 | 237.2 227.9 | 256.2 232.4 | 70.46 73.99 | 72.85 | 75.18 78.69 |

[^210]10.-Annual Index Numbers of Employment and Payrolls, with Average Weekly Wages and Salaries, by Industry, Province and Urban Area, 1960-62-concluded

| Urban Area | $\underset{(1949=100)}{\text { Employment }}$ |  |  | $\begin{gathered} \text { Payrolls } \\ (1949=100) \end{gathered}$ |  |  | Average Weekly Wages and Salaries |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1960 | 1961 | 1962 | 1960 | 1961 | 1962 | 1960 | 1961 | 1962 |
| Urban Area-concluded |  |  |  |  |  |  | \$ | \$ | \$ |
| Peterborough, Ont. | 95.4 | 89.9 | 95.1 | 179.9 | 174.2 | 192.3 | 83.93 | 86.10 | 89.78 |
| Oshawa, Ont. | 170.8 | 163.6 | 178.8 | 304.1 | 300.6 | 355.4 | 89.02 | 91.74 | ${ }_{99} .01$ |
| Toronto, Ont | 129.9 | 131.8 | 137.3 | 231.8 | 243.2 | 261.4 | 78.98 | 81.59 | 84.10 |
| Hamilton, Ont | 111.3 | 108.1 | 113.2 | 201.5 | 202.5 | 219.1 | 84.00 | 86.84 | 89.68 |
| St. Catharines, Ont | 108.9 | 108.3 | - 111.1 | 190.8 | 196.4 | 211.0 | 85.57 | 88.46 | 92.60 |
| Niagara Falls, On | 99.9 | 97.9 | 100.0 | 175.0 | 177.6 | 185.2 | 78.70 | 81.33 | 81.93 |
| Brantford, Ont | 81.2 | 81.6 | 83.5 | 132.6 | 137.6 | 143.9 | 71.39 | 73.80 | 75.46 |
| Guelph, Ont | 121.4 | 120.1 | 124.4 | 211.2 | 216.1 | 232.1 | 70.18 | 72.43 | 75.08 |
| Galt, Ont. | 115.7 | 106.7 | 114.5 | 203.2 | 192.7 | 213.4 | 68.50 | 70.33 | 72.20 |
| Kitchener, On | 121.4 | 121.8 | 130.9 | 214.4 | 221.6 | 245.2 | 71.74 | 73.85 | 75.99 |
| Sudbury, Ont | 146.0 | 147.4 | 140.0 | 250.0 | 258.1 | 246.0 | 90.17 | 92.32 | 92.43 |
| Timmins, On | 93.7 | 91.3 | 89.0 | 137.0 | 138.2 | 139.2 | 68.84 | 71.15 | 73.40 |
| London, Ont | 123.9 | 129.5 | 135.9 | 220.9 | 238.8 | 258.0 | 72.07 | 74.38 | 76.46 |
| Sarnia, Ont. | 124.7 | 126.5 | 128.9 | 254.4 | 266.7 | 279.8 | 98.05 | 101.28 | 104.28 |
| Windsor, On | 76.2 | 72.8 | 72.1 | 128.8 | 126.8 | 130.3 | 84.98 | 87.29 | 90.44 |
| Sault Ste. Marie, Ont | 143.5 | 139.2 | 145.4 | 270.0 | 275.1 | 293.3 | 95.28 | 99.65 | 101.50 |
| Fort William-Port Arthur, On | 108.0 | 107.2 | 105.6 | 189.2 | 192.9 | 192.7 | 78.07 | 80.13 | 81.31 |
| Winnipeg, Man | 111.4 | 110.3 | 110.6 | 193.4 | 197.1 | 203.1 | 68.64 | 70.42 | 72.25 |
| Regina, Sask | 131.3 | 135.2 | 139.9 | 238.4 | 254.4 | 273.5 | 69.68 | 72.80 | 75.90 |
| Saskatoon, Sask | 138.3 | 138.7 | 138.2 | 249.3 | 257.3 | 265.7 | 67.71 | 69.67 | 71.89 |
| Edmonton, Alta | 184.8 | 189.0 | 201.6 | 328.7 | 347.3 | 379.5 | 72.62 | 74.79 | 76.71 |
| Calgary, Alta | 170.7 | 172.3 | 178.6 | 298.7 | 313.9 | 339.9 | 73.61 | 76.58 | 80.77 |
| Vancouver, B. | 113.8 | 111.3 | 114.2 | 212.0 | 214.0 | 225.0 | 87.42 | 83.82 | 85.80 |
| Victoria, B.C | 110.7 | 109.0 | 116.7 | 199.3 | 202.5 | 224.0 | 74.69 | 77.00 | 79.68 |

11.-Annual Average Weekly Wages and Salaries, by Industrial Division, Significant Years 1939-62, and Monthly Averages 1962


[^211]
## Subsection 2.-Hours and Earnings of Hourly Rated Wage-Earners

Toward the end of 1944, the monthly survey of employment and payrolls was extended to cover 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.

In the 18 years of the record, average hours have fallen in nearly all the industries and areas covered by the survey, reflecting widespread reductions in the standard work week and in the overtime work that was still prevalent in many industries in the final year of the War. The smallest decline in hours since 1945 (less than 1 p.c.) has taken place in building and structures; this group had been severely affected by wartime shortages of labour and materials and during the War generally curtailed operations. The 18-year decrease in hours of work in manufacturing approximated 8 p.c.

During this period, average hourly and weekly wages have risen substantially. Upward wage-rate revisions have been the main cause of these advances, but other factors have contributed. Important among these, especially in the earlier postwar years, were progressive increases in cost-of-living allowances, now largely absorbed in wage rates. Technological changes, frequently involving the employment of more highly skilled workers at the expense of lower paid jobs, have also tended to raise wage levels, as has the relatively greater expansion over the years in industries in which pay rates usually exceed the general level. From 1945 to 1962 , average weekly wages rose 151 p.c. in manufacturing, 138 p.c. in mining and 191 p.c. in construction. Average hourly earnings increased 172 p.c. in manufacturing, 156 p.c. in mining and 178 p.c. in construction. In manufacturing the 1962 average hourly earnings stood at $\$ 1.88$, 2.7 p.c. above the 1961 average, while the average weekly wage at $\$ 76.55$ was 3.1 p.c. higher than in 1961. This difference in percentage changes was attributable mainly to a slight increase in average weekly hours in durable goods manufacturing in 1962.

## 12.-Annual Average Weekly Hours and Earnings of Hourly Rated Wage-Earners in Specified Industries, 1945-62 and Monthly Averages 1962

| Year | All Manufactures |  |  | Mining |  |  | Building and Structures |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Average Weekly Hours | Average Hourly Earnings | Average Weekly Wages | Average Weekly Hours | Average Hourly Earnings | Average Weekly Wages | Average Weekly Hours | Average Hourly Earnings | Average Weekly Wages |
|  | No. | \$ | \$ | No. | S | \$ | No. | \$ | \$ |
| Averages- |  |  |  |  |  |  |  |  |  |
| 1945. | 44.1 | 0.69 | 30.47 | 43.9 | 0.85 | 38.40 | 40.2 | 0.81 | 32.60 |
| 1949. | 42.2 | 0.99 | 41.74 | 42.7 | 1.18 | 50.22 | 40.0 | 1.08 | 43.28 |
| 1950. | 42.3 | 1.04 | 44.03 | 43.0 | 1.22 | 52.46 | 39.5 | 1.14 | 45.07 |
| 1953. | 41.3 | 1.36 | 56.25 | 42.6 | 1.54 | 65.69 | 40.7 | 1.58 | 64.31 |
| 1955. | 40.7 | 1.41 | 57.43 | 42.6 | 1.58 | 67.14 | 39.9 | 1.61 | 64.08 |
| 1956. | 41.0 41.0 | 1.45 1.52 | 59.45 62.40 | 43.2 42.8 | 1.61 1.73 | 69.68 73.92 | 39.5 41.0 | 1.63 1.77 | 64.46 72.73 |
| 1957. | 40.4 | 1.61 | 64.96 | 42.3 | 1.88 | 79.35 | 41.3 | 1.90 | 78.47 |
| 1958. | 40.2 | 1.66 | 66.77 | 41.5 | 1.96 | 81.30 | 40.5 | 1.94 | 78.37 |
| 1959. | 40.7 | 1.72 | 70.16 | 41.5 | 2.04 | 84.80 | 39.6 | 2.01 | 79.59 |
| 1960. | 40.4 | 1.78 | 71.96 | 41.7 | 2.09 | 87.26 | 40.1 | 2.12 | 84.85 |
| 1961. | 40.6 40.7 | 1.83 1.88 | 74.27 76.55 | 41.8 41.7 | 2.13 2.18 | 89.08 91.22 | 39.9 39.7 | 2.17 | 86.39 89.37 |

12.-Annual Average Weekly Hours and Earnings of Hourly Rated Wage-Earners in Specified Industries, 1945-62 and Monthly Averages 1962-concluded

| Year <br> and Month | All Manufactures |  |  | Mining |  |  | Building and Structures |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Average Weekly Hours | Average Average <br> Hourly Weekly <br> Earnings Wages |  | Average Weekly Hours | Average Hourly Earnings | Average Weekly Wages | Average Weekly Hours | Average Hourly Earnings | Average Weekly Wages |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  | No. | \$ | \$ | No. | \$ | \$ | No. | \$ | \$ |
| 1962- |  |  |  |  |  |  |  |  |  |
| January. | 40.6 | 1.86 | 75.46 | 42.8 | 2.15 | 92.19 | 39.1 | 2.23 | 87.35 |
| February. | 40.8 | 1.86 | 75.99 | 41.9 | 2.17 | 90.82 | 39.2 | 2.25 | 88.45 |
| March.... | 41.0 | 1.87 | 76.68 | 42.0 | 2.17 | 91.28 | 40.5 | 2.27 | 91.95 |
| April. . | 40.6 | 1.89 | 76.50 | 41.5 | 2.19 | 90.83 | 38.5 | 2.27 | 87.17 |
| May... | 41.0 | 1.89 | 77.51 | 42.2 | 2.17 | 91.72 | 39.8 | 2.24 | 88.94 |
| June. . | 41.1 | 1.88 | 77.52 | 42.0 | 2.19 | 92.04 | 40.9 | 2.23 | 91.44 |
| July.... | 41.0 | 1.87 | 76.72 | 41.8 | 2.19 | 91.57 | 41.2 | 2.23 | 92.00 |
| August.... | 41.0 | 1.86 | 76.17 | 41.8 | 2.18 | 91.27 | 42.0 | 2.24 | 94.04 |
| September . | 41.4 | 1.88 | 77.61 | 41.6 | 2.19 | 91.34 | 42.1 | 2.25 | 94.67 |
| October... | 41.3 | 1.89 | 77.96 | 42.3 | 2.18 | 92.18 | 41.4 | 2.25 | 93.23 |
| November. | 41.2 | 1.90 | 78.09 | 42.2 | 2.19 | 92.57 | 40.9 | 2.27 | 92.65 |
| December.. | 37.3 | 1.94 | 72.34 | 38.8 | 2.24 | 86.85 | 30.7 | 2.30 | 70.60 |

13.-Average Weekly Hours and Earnings of Hourly Rated Wage-Earners in Specified Industries and Urban Areas, 1960-62

| Industry, Province and Urban Area | Average Weekly Hours Worked |  |  | Average Hourly Earnings |  |  | Average Weekly Wages |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1960 | 1961 | 1962 | 1960 | 1961 | 1962 | 1960 | 1961 | 1962 |
|  | No. | No. | No. | \$ | \$ | \$ | \$ | \$ | \$ |
| Industry |  |  |  |  |  |  |  |  |  |
| Mining | 41.7 | 41.8 | 41.7 | 2.09 | 2.13 | 2.18 | 87.26 | 89.08 | 91.22 |
| Metal mining | 41.9 | 42.2 | 41.9 | 2.17 | 2.20 | 2.26 | 90.89 | 92.83 | 94.43 |
| Coal mining. | 39.7 | 39.7 | 40.3 | 1.75 | 1.77 | 1.83 | 69.36 | 70.36 | 73.82 |
| Manufacturing. | 40.4 | 40.6 | 40.7 | 1.78 | 1.83 | 1.88 | 71.96 | 74.27 | 76.55 |
| Durable goods ${ }^{1}$ | 40.7 | 40.9 | 41.2 | 1.94 | 1.99 | 2.04 | 78.70 | 81.36 | 84.02 |
| Non-durable goods ${ }^{1}$ | 40.1 | 40.3 | 40.2 | 1.64 | 1.69 | 1.73 | 65.68 | 67.87 | 69.55 |
| Construction. | 40.4 | 40.3 | 40.3 | 1.94 | 1.98 | 2.06 | 78.41 | 79.93 | 83.16 |
| Buildings and structures. | 40.1 | 39.9 | 39.7 | 2.12 | 2.17 | 2.25 | 84.85 | 86.39 | 89.37 |
| Highways, bridges and streets.. | 41.0 | 40.9 | 41.5 | 1.63 | 1.67 | 1.73 | 66.89 | 68.37 | 71.65 |
| Service | 39.1 | 38.7 | 38.1 | 1.04 | 1.07 | 1.10 | 40.58 | 41.27 | 42.02 |
| Hotels and restaurants | 39.1 | 38.7 | 38.0 | 1.01 | 1.04 | 1.06 | 39.63 | 40.09 | 40.41 |
| Laundries and dry-cleaning plants | 39.8 | 39.7 | 39.9 | 1.00 | 1.03 | 1.05 | 39.83 | 40.96 | 41.95 |
| Province |  |  |  |  |  |  |  |  |  |
| Newfoundland. | 40.3 | 40.1 | 39.8 | 1.64 | 1.71 | 1.69 | 65.94 | 68.39 | 67.77 |
| Nova Scotia. | 40.8 | 40.4 | 40.4 | 1.57 | 1.60 | 1.64 | 64.13 | 64.48 |  |
| New Brunswick | 41.4 | 40.8 | 40.9 | 1.55 | 1.58 | 1.62 | 64.21 | 64.56 | ${ }^{66.09}$ |
| Quebec......... | 41.2 | 41.5 | 41.5 | 1.60 | 1.65 | 1.70 | 66.10 | 68.25 | 70.39 |
| Ontario. | 40.3 | 40.5 | 40.8 | 1.87 | 1.93 | 1.98 | 75.52 | 78.09 | 80.62 |
| Manitoba. | 39.9 | 39.8 | 39.8 | 1.67 | 1.72 | 1.76 | 66.67 | 68.43 | 70.01 |
| Saskatchewan | 38.9 | 38.9 | 38.8 | 1.90 | 1.97 | 2.00 | 74.02 | 76.67 | 77.70 |
| Alberta. | 39.5 | 39.7 | 39.8 | 1.89 | 1.96 | 1.99 | 74.76 | 77.90 | 79.29 86.04 |
| British Columbia. | 37.6 | 37.7 | 37.7 | 2.17 | 2.23 | 2.28 | 81.69 | 84.17 | 86.04 |
| Urban Area |  |  |  |  |  |  |  |  |  |
| Montreal. | 40.3 | 40.7 | 40.7 | 1.65 | 1.70 | 1.75 | 66.78 | 69.04 | 71.35 |
| Toronto. | 40.1 | 40.4 | 40.5 | 1.80 | 1.85 | 1.89 |  | 74.67 | 71.355 91.29 |
| Hamilton | 40.1 | 40.3 | 40.3 | 2.14 | 2.22 | 2.27 | 85.70 | 89.41 88.38 | 91.29 |
| Windsor. | 39.7 | 40.0 39.8 | 41.2 39.7 | 2.14 1.66 | 2.21 1.72 | 2.29 1.76 | 84.83 66.51 | 88.38 68.36 | 69.79 |
| Winnipeg. | 40.0 37.2 | 39.8 37.4 | 39.7 37.4 | 1.66 2.12 | 1.72 2.17 | 1.76 2.23 | 66.51 78.93 | 681.30 81 | 83.31 |

[^212]
## Section 4.-Wage Rates, Hours of Labour and Other Working Conditions

Statistics on occupational wage rates by industry and region or city and on 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 published are based on an annual survey covering some 27,500 establishments in most industries and apply to the last normal pay period preceding Oct. 1.

Average wage rates of time workers and average straight-time earnings of piece workers and other incentive workers in a given occupation are shown separately but are combined in the calculation of index numbers. Predominant ranges of rates for each occupation used are also given. Overtime pay is excluded.

The industry index numbers shown in Table 14 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. More detailed information on concepts and methods of developing these statistics is given in the annual report.

## 14.-Index Numbers of Average Wage Rates for Certain Main Industrial Groups, 1953-62 (1949=100)

Nore.-Indexes back to 1901 may be obtained from the Department of Labour publication Wage Rates, Salaries and Hours of Labour 1962.

| Year | $\begin{aligned} & \text { Log- } \\ & \text { ging } \end{aligned}$ | Coal Mining | Metal <br> Mining | Manufacturing |  |  | Con-struction | Railways | Telephone | $\left\lvert\, \begin{gathered} \text { Per- } \\ \text { sonal } \\ \text { Service } \end{gathered}\right.$ | General Average |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Durable Goods | Nondurable Goods | $\begin{gathered} \text { All } \\ \begin{array}{c} \text { Manu- } \\ \text { factur- } \\ \text { ing } \end{array} \end{gathered}$ |  |  |  |  |  |
| 1953. | 135.5 | 124.0 | 132.3 | 136.3 | 132.8 | 134.6 | 136.2 | 137.2 | 136.6 | 123.3 | 133.6 |
| 1954. | 138.0 | 123.5 | 136.7 | 140.0 | 136.9 | 138.5 | 140.0 | 137.8 | 147.6 | 128.6 | 137.9 |
| 1955. | 138.2 | 122.8 | 140.3 | 143.7 | 140.7 | 142.2 | 145.4 | 137.8 | 152.8 | 132.3 | 141.7 |
| 1956. | 160.8 | 123.6 | 150.8 | 151.2 | 148.3 | 149.8 | 150.7 | 146.8 | 157.6 | 136.1 | 148.7 |
| 1957. | 168.4 | 137.4 | 156.2 | 160.7 | 156.3 | 158.6 | 160.7 | 153.3 | 165.9 | 138.9 | 156.5 |
| 1958. | 172.0 | 147.6 | 160.8 | 166.1 | 162.2 | 164.2 | 171.0 | 153.3 | 175.4 | 143.5 | $162.5{ }^{\text {r }}$ |
| 1959. | 176.2 | 147.3 | 164.3 | 170.8 | 167.0 | 168.9 | 180.7 | 165.7 | $175.3{ }^{\text {r }}$ | 146.1 | $168.8{ }^{\text {r }}$ |
| 1960. | 184.3 | 148.2 | 169.4 | 176.6 | 173.2 | 175.0 | 192.6 | 166.4 | 178.0 | 156.8 | $175.5{ }^{\text {r }}$ |
| 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 | 194.4 | 162.2 | 185.9 |

15.-Average Wage and Salary Rates for Selected Occupations in Certain Cities Across Canada, Oct 1, 1962

| Industry and Occupation | $\begin{gathered} \text { Halifax, } \\ \text { N.S. } \end{gathered}$ | Saint John, N.B. | Sherbrooke, Que. | $\begin{gathered} \text { Montreal, } \\ \text { Que. } \end{gathered}$ | Toronto, Ont. | Hamilton, Ont. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\stackrel{\$}{\boldsymbol{p e r} \mathrm{hr}} .$ | $\stackrel{\$}{\mathrm{per} h r} .$ | $\stackrel{\$}{\mathbf{p e r} \mathrm{hr}}$ | $\stackrel{\$}{\$} \mathrm{hr} .$ | $\stackrel{\$}{\mathrm{per}} \mathrm{hr} .$ | $\stackrel{\$}{\mathbf{p e r}} \mathrm{hr} .$ |
| Construction (building and structures only)- |  |  |  |  |  |  |
| Bricklayer and mason. | 2.42 | 2.10 | 2.25 | 2.75 | 3.35 | 2.95 |
| Carpenter. | 2.15 | 2.04 | 2.05 | 2.55 | 3.10 | 2.98 |
| Electrician. | 2.35 | 2.00 | 2.00 | 2.70 | 3.68 | 3.60 |
| Painter. | 1.89 | 1.77 | 1.95 | 2.45 | 2.81 | 2.60 |
| Plasterer. | 2.40 | 2.10 | 2.25 | 2.75 | 3.25 | 3.05 |
| Plumber. | 2.42 | 2.00 | 2.20 | 2.82 | 3.56 | 3.30 |
| Sheet metal worker. | 2.15 | 1.65 | 2.20 | 2.55 | 3.60 | 3.05 |
| Labourer. | 1.58 | 1.15 | 1.65 | 1.95 | 2.15 | 2.00 |
| Truck driver. . . . . . . . . . . . . . . . . . . . . . . . . | 1.58 | 1.20 | 1.65 | 1.95 | 2.15 | 2.00 |

## 15.-Average Wage and Salary Rates for Selected Occupations in Certain Cities Across Canada, Oct 1, 1962-continued



For footnote, see end of table.

## 15.-Average Wage and Salary Rates for Selected Occupations in Certain Cities Across Canada, Oct 1, 1962-concluded

| Industry and Occupation | Winnipeg, Man. | Regina, Sask. | Saskatoon, Sask. | Calgary, Alta. | $\begin{aligned} & \text { Edmon- } \\ & \text { ton, } \\ & \text { Alta. } \end{aligned}$ Alta. | $\begin{aligned} & \text { Van- } \\ & \text { couver, } \\ & \text { B.C. } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\stackrel{\$}{\mathrm{p}} \mathrm{hr} .$ | $\stackrel{\$}{\mathrm{~s}} \mathrm{hr} .$ | $\underset{\operatorname{per} \mathrm{hr}}{\$}$ | $\stackrel{\$}{\mathbf{p e r} \mathrm{hr}} .$ | $\stackrel{\$}{\mathbf{p e r} \mathrm{hr}} .$ | $\stackrel{\mathbf{s}}{\operatorname{per} \mathrm{hr}} .$ |
| Construction (building and structures only)- |  |  |  |  |  |  |
| Bricklayer and mason. . . . . . . . . . . . . . . . . . . | 2.80 | 2.62 | 2.62 | 2.95 | 2.90 | 3.09 |
| Carpenter. | 2.60 | 2.31 | 2.31 | 2.70 | 2.70 | 3.02 |
| Electrician | 2.80 | 2.56 | 2.51 | 2.95 | 3.00 | 3.43 |
| Painter. | 2.25 | 2.05 | 2.17 | 2.30 | 2.20 | 2.91 |
| Plasterer | 2.80 | 2.45 | 2.50 | 2.80 | 2.80 | 3.00 |
| Plumber. | 2.90 | 2.65 | 2.65 | 2.75 | 2.80 | 3.24 |
| Sheet metal worker............................ | 2.50 | 2.40 | 2.40 | 2.75 | 2.95 | 3.11 |
| Labourer......................................... | 1.65 | 1.56 | 1.63 | 1.95 | 1.95 | 2.19 |
| Truck driver. ........................... | 1.75 | 1.60 | 1.64 | 1.95 | 1.95 | 2.41 |
| Manufacturing and Other Industries-1 |  |  |  |  |  |  |
| General labourer, male.................... | 1.68 | 1.62 | 1.61 | 1.78 | 1.58 | 1.97 |
| Maintenance Trades- |  |  |  |  |  |  |
| Carpenter........ | 2.24 | 2.14 | 2.17 | 2.38 | 2.25 | 2.52 |
| Electrician | 2.36 | 2.55 | 2.46 | 2.61 | 2.52 | 2.65 |
| Machinist. | 2.24 | 2.38 | 2.45 | 2.32 | 2.42 | 2.58 |
| Mechanic. | 2.19 | 2.28 | 2.20 | 2.44 | 2.28 | 2.56 |
| Millwright...................................... | 2.17 | - | 2.14 | 2.30 | 2.37 | 2.57 |
| Pipefitter. | 2.21 | 2.66 | 2.40 | 2.46 | 2.55 | 2.42 |
| Tool and die maker | 2.16 | - | - | - | - | 2.64 |
| Welder. | 2.23 | 2.43 | 2.39 | 2.47 | 2.35 | 2.58 |
| Service Occupations- |  |  |  |  |  |  |
| Truck driver, heavy truck.................. | 1.71 | 1.76 | 1.67 | 1.94 | 1.82 | 2.29 |
| Truck driver, light truck.................... | 1.52 | 1.64 | 1.58 | 1.80 | 1.70 | 2.22 |
| Office Occupations, Male- | per wk. | per wk. | per wk. | per wk. | per wk. | per wk. |
| Bookkeeper, senior. | 85.68 | 93.53 | 86.59 | 103.66 | 100.98 | 102.01 |
| Clerk, intermediate. | 65.21 | 67.65 | 67.38 | 78.76 | 74.36 | 76.81 |
| Clerk, senior. | 84.67 | 93.15 | 88.93 | 104.86 | 96.83 | 101.67 |
| Order clerk. | 67.38 | 68.85 | 67.63 | 76.11 | 73.30 | 85.07 |
| Draughtsman, intermediate.................... | 86.42 | 81.26 | 78.67 | 90.52 | 83.67 | 97.04 |
| Draughtsman, senior........................... | 100.99 | 97.32 | 94.23 | 108.57 | 104.86 | 115.17 |
| Office Occupations, Female- |  |  |  |  |  |  |
| Clerk, intermediate........................... | 51.76 | 59.70 | 58.11 | 56.85 | 56.93 | 64.73 |
| Machine Operator- |  |  |  |  |  |  |
| Bookkeeping.................................. | 50.82 | 53.93 | 52.01 | 52.00 | 50.24 | 54.05 |
| Calculating................................... | 54.00 | 57.82 | 52.28 | 56.78 | 54.77 | 62.75 |
| Payroll clerk. | 56.90 | 65.46 | 62.14 | 67.67 | 60.09 | 66.48 |
| Secretary, senior. | 73.19 | 76.34 | 70.27 | 80.02 | 71.92 | 76.63 |
| Stenographer, junior............................. | 49.78 | 56.52 | 51.61 | 56.33 | 53.21 | 54.13 |
| Stenographer, senior... | 60.95 | 63.53 | 63.28 | 66.46 | 63.53 | 64.36 |
| Switchboard operator. | 49.32 | 52.99 | 52.40 | 54.63 | 51.97 | 55.98 |
| Typist, junior.. | 44.31 | 47.38 | 47.56 | 48.26 | 47.84 | 47.99 |
| Typist, senior. | 52.45 | 61.24 | 55.44 | 58.09 | 55.84 | 59.02 |

[^213]Table 16 gives summary data on working conditions of plant and office employees in manufacturing industries for the years 1958 to 1962. The percentages in this table denote the proportions which employees-plant or office-of establishments reporting specific 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.

It will be noted that for the year 1958 the number of establishments shown as having plant employees is identical with the number having office employees, while for 1959 and subsequent years these numbers differ. The explanation is that in 1959 and subsequent years separate counts of establishments having plant workers and establishments having office employees were made, while in previous years counts of establishments were obtained without distinguishing between those with both plant and office employees and those with either one or the other only.

Further details and additional information may be seen 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 establishments.

## 16.-Summary of Selected Working Conditions of Plant and Office Employees in Manufacturing Industries, 1958-62



# 16.-Summary of Selected Working Conditions of Plant and Office Employees in Manufacturing Industries, 1958-62-concluded 

| Item | 1958 | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Percentages of Plant Employees-concluded |  |  |  |  |
| Vacation with Pay-concluded |  |  |  |  |  |
| Four weeks with pay........ |  | 26 | 31 | 33 | 36 |
| After: 25 years...... | 12 | 22 | 25 | 27 | 11 |
| Vacations that do not vary with length of service........ | 1 | 1 | $12^{1}$ | $11^{1}$ | $11^{1}$ |
| 1 week.................................................. | $\cdots$ | . | 5 | 5 | 5 |
| 2 weeks................................................... | .. | .. | 7 | 6 | 5 |
| Paid Statutory Holidays................................... | 97 | 95 | 96 | 96 | 95 |
| 1-5..................... | 10 | 10 | 10 | 9 | 8 |
| 6. | 6 | 7 | 5 | 6 | 5 |
| 7. | 11 | 9 | 8 | 8 | 8 |
| 8. | 15 | 14 | 15 | 16 | 18 |
| More than 9 . | 3 | 8 | 3 | 3 | 8 |
|  | Percentages of Office Employees |  |  |  |  |
| Standard Weekly Hours- |  |  |  |  |  |
| Under $37 \frac{1}{2} . . . . . . . . .$. | 26 | 27 | 27 | 27 | 29 |
| 371. | 41 | 42 | 43 | 43 | 42 |
| Over $37 \frac{1}{2}$ and under 40 | 10 | 9 | 8 | 8 | 7 |
| $40 \ldots . .$. | 19 | 18 | 18 | 18 | 19 |
| Over 40. | 4 | 4 | 4 | 4 | 3 |
| Employees on a five-day week. | 93 | 95 | 95 | 96 | 97 |
| Vacation with Pay- |  |  |  |  |  |
| Two weeks with pay. | 99 | 98 | $90^{1}$ | 911 | $92^{1}$ |
| Aiter: 1 year or less.................................... | 89 | 89 | 79 | 82 | 85 |
| 2 years...... | 6 | ${ }_{6}$ | 7 | 7 | 5 |
| 3 years.... | 1 | 2 | 1 | 1 | 1 |
| 5 years..... | 2 | 1 | 2 | 1 | 1 |
| Other periods. | 1 | . | 1 | . | . |
| Three weeks with pay... | 82 | 82 | 83 | 83 | 84 |
| After: Less than 10 years. | 5 | ${ }^{6}$ | 7 | 7 | 8 |
| 10 years..... | 16 | 17 | 22 | 28 | 33 |
| 11-14 years. | 4 | ${ }_{6}$ | 4 | 7 | 9 |
| 15 years.... | 52 |  |  | 38 | 31 |
| 20 years...... | 3 | 2 | 2 | 2 | 2 |
| Other periods | 2 | 2 | 2 | 1 | 1 |
| Four weeks with pay. | 20 | 32 | 37 | 41 | 47 |
| After: 25 years. | 14 | 25 | 28 | 31 | 31 |
| Other periods...................................... | 6 | 7 | 9 | 10 | 16 |
| Vacations that do not vary with length of service....... | 1 | 1 | $10^{1}$ | 71 | 71 |
| 1 week................................................. | $\cdots$ | . | 1 | 1 | 1 |
| 2 weeks.................. | .. | .. | 9 | 6 | 6 |
| Paid Statutory Holidays. | 98 | 99 | 99 | 99 | 99 |
| 1-6.................... | 4 | 5 | 4 | 5 | 4 |
| 7. | 9 | 8 | 7 | 6 | 7 |
| 8. | 58 28 | 58 28 | 620 | ${ }^{58}$ | 58 24 |
| More than 9. | 5 | 5 | 5 | 6 | 5 |

[^214]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 17 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.

## 17.-Average Daily and Monthly Wages of Male Farm Help as at Jan. 15, May 15 and Aug. 15, 1960-62

Note.-Figures from 1940 are given in the corresponding table of previous Year Books beginning with the 1943-44 edition.

| Province and Year | January 15 |  |  |  | May 15 |  |  |  | August 15 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Daily |  | Monthly |  | Daily |  | Monthly |  | Daily |  | Monthly |  |
|  | With Board | Without Board | With Board | Without Board | With Board | Without Board | With Board | Without Board | With Board | With- <br> out <br> Board | With Board | WithBoard |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1960. | 5.00 | 6.00 | 101.00 | 134.00 | 5.00 | 6.40 | 105.00 | 134.00 | 5.10 | 6.20 | 102.00 | 138.00 |
| 1961. | 4.90 | 6.20 | 106.00 | 134.00 | 5.10 | 6.50 | 107.00 | 144.00 | 5.20 | 6.30 | 107.00 | 138.00 |
| 1962. | 5.00 | 6.30 | 106.00 | 134.00 | 5.10 | 6.50 | 108.00 | 143.00 | 5.10 | 6.30 | 108.00 | 141.00 |
| Quebec- |  |  |  |  |  |  |  |  |  |  |  |  |
| 1960.... | 5.70 | 7.10 | 107.00 | 148.00 | 5.80 | 7.10 | 111.00 | 149.00 | 6.00 | 7.40 | 120.00 | 160.00 |
| 1961. | 5.80 | 7.00 | 110.00 | 154.00 | 6.00 | 7.30 | 110.00 | 149.00 | 6.30 | 7.60 | 123.00 | 161.00 |
| 1962. | 5.90 | 7.10 | 114.00 | 155.00 | 6.00 | 7.30 | 113.00 | 154.00 | 6.40 | 7.70 | 124.00 | 165.00 |
| Ontario- |  |  |  |  |  |  |  |  |  |  |  |  |
| 1960. | 5.90 | 7.60 | 110.00 | 155.00 | 6.30 | 8.10 | 117.00 | 156.00 | 6.20 | 8.40 | 116.00 | 162.00 |
| 1961. | 6.10 | 7.80 | 111.00 | 156.00 | 6.40 | 8.10 | 119.00 | 162.00 | 6.80 | 8.70 | 120.00 | 164.00 |
| 1962. | 6.40 | 8.10 | 117.00 | 161.00 | 6.70 | 8.30 | 120.00 | 165.00 | 6.70 | 8.50 | 122.00 | 162.00 |
| Manitoba- |  |  |  |  |  |  |  |  |  |  |  |  |
| 1960. | 5. 30 | 6.90 | 93.00 | 132.00 | 6.20 | 8.00 | 133.00 | 160.00 | 7.00 | 8.40 | 136.00 | 167.00 |
| 1961. | 5.70 | 7.30 | 103.00 | 141.00 | 6.40 | 8.10 | 135.00 | 165.00 | 6.90 | 8.50 | 137.00 | 167.00 |
| 1962. | 5.70 | 7.40 | 104.00 | 142.00 | 6.50 | 8.20 | 136.00 | 166.00 | 6.90 | 8.60 | 140.00 | 170.00 |
| Saskatchewan- |  |  |  |  |  |  |  |  |  |  |  |  |
| 1960............. | 5.70 | 7.40 | 98.00 | 138.00 | 6.70 | 8.60 | 143.00 | 181.00 | 7.30 | 9.20 | 147.00 | 184.00 |
| 1961. | 5.80 | 7.40 | 102.00 | 140.00 | 6.90 | 8.80 | 145.00 | 185.00 | 7.20 | 9.00 | 148.00 | 185.00 184.00 |
| 1962. | 6.00 | 7.50 | 107.00 | 141.00 | 7.00 | 9.10 | 147.00 | 184.00 | 7.30 | 9.50 | 152.00 | 184.00 |
| Alberta- |  |  |  |  |  |  |  |  |  |  |  |  |
| 1960.... | 6.30 | 8.00 | 119.00 | 167.00 | 6.90 | 8.80 | 142.00 |  |  | 8.80 | 144.00 | 180.00 |
| 1961. | 6.00 | 7.70 | 118.00 | 162.00 | 7.00 | 8.90 | 143.00 | 188.00 | 7.30 | 9.00 9.30 | 147.00 15.00 | 182.00 189.00 |
| 1962. | 6.10 | 8.10 | 123.00 | 169.00 | 7.10 | 8.80 | 145.00 | 186.00 | 7.40 | 9.30 | 152.00 | 189.00 |
| British Columbia- |  |  |  |  |  |  |  |  |  |  |  |  |
| 1961. | 7.30 | 9.10 | 139.00 | 200.00 | 7.80 | 9.50 9.90 | 144.00 | 201.00 | 7.90 | 9.70 | 147.00 | 209.00 |
| 1962. | 7.70 | 9.40 | 144.00 | 210.00 | 7.80 | 9.90 | 147.00 | 208.00 | 8.00 | 10.10 | 151.00 | 218.00 |
| Totals- |  |  |  |  |  |  |  |  |  |  |  |  |
| 1960. | 5.50 | 7.00 | 111.00 | 155.00 | 5.90 | 7.50 | 128.00 | 165.00 | 6.20 | 7.80 | 129.00 | 169.00 |
| 1961. | 5.70 | 7.20 | 112.00 | 155.00 | 6.10 | 7.70 | 131.00 | 172.00 | 6.40 | 7.90 | 131.00 | 171.00 |
| 1962. | 5.80 | 7.30 | 117.00 | 159.00 | 6.20 | 7.70 | 132.00 | 174.00 | 6.40 | 8.00 | 137.00 | 176.00 |

## Section 5.-Unemployment Insurance*

During the depression of the 1930's the need for a nation-wide scheme of unemployment insurance 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 legislate on unemployment insurance and in 1940 the Unemployment Insurance Act was passed, making provision for a compulsory contributory unemployment insurance scheme and also for the establishment of a national employment service to operate in conjunction with and ancillary to the unemployment insurance operations carried on under the Act. The Act, which came into effect on July 1, 1941, was later amended on several occasions and was replaced by a new Unemployment Insurance Act passed on July 1, 1955 and effective Oct. 2, 1955.

Legislation provides for compulsory coverage of some four fifths of all non-agricultural employees under an 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 benefits to unemployed insured 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, except the following: employment in specified industries or occupations such as agriculture, horticulture and forestry (effective Jan. 1, 1956, coverage was also extended to certain employments in these three industries); 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; private domestic service; privateduty nursing; teaching; certain director-officers of corporations; 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 milage rate) are insured regardless of amount of earnings, together with all employees who receive $\$ 5,460$ or less at weekly, monthly, yearly or commission rates.

Under the Canadian Unemployment Insurance Act, benefit payments are made out of a Fund derived from moneys provided by Parliament and from contributions by insured employed persons and their employers. The amount of the employee contribution is determined by his weekly earnings and, since 1950, an equal contribution is required from the employer. Federal Government participation amounts to one fifth of the aggregate employer-employee contribution. In addition, administrative costs are assumed by the Federal Government. Contributions became payable on July 1, 1941 and by Mar. 31, 1962 a total of $\$ 3,501,000,000$ had been provided from these three sources; accruals from investment over the period brought the net revenue to $\$ 3,772,000,000$. Investment transactions, as authorized by an Investment Committee, are carried out by the Bank of Canada.

Benefits became payable on Jan. 27, 1942 and by Mar. 31, 1962 a total of $\$ 3,706,000,000$ had been paid, the balance in the fund at that date being $\$ 66,600,000$.

[^215]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.

Persons 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 15 p.c. of the monthly volume in 1962, are not new cases of disemployment. The count of claimants at the month-end indicates the extent to which claimants maintain contact with local offices of the Commission.
18.-Claims Filed, Claimants and Amount Paid, by Month, 1961 and 1962

| Month | 1961 |  |  | 1962 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { Initial } \\ & \text { and } \\ & \text { Renewal } \\ & \text { Claims } \\ & \text { Filed } \end{aligned}$ | Claimants at End of Month | $\underset{\text { Paid }}{\text { Amount }}$ | $\begin{gathered} \text { Initial } \\ \text { and } \\ \text { Renewal } \\ \text { Claims } \\ \text { Filed } \end{gathered}$ | Claimants at End of Month | $\begin{aligned} & \text { Amount } \\ & \text { Paid } \end{aligned}$ |
|  | '000 | '000 | \$'000 | '000 | '000 | \$'000 |
| January....... | 344 | 847 | 67,660 | 320 | 699 | 57,799 |
| February.... | 235 | 873 | 70,989 | 206 | 719 | 57,988 |
| March. | 259 | 838 | 85,188 | 226 | 687 | 68,827 |
| April.. | 210 | 713 | 64,540 | 181 | 564 | 51,647 |
| May... | 162 | 341 | 58,704 | 138 | 264 | 45,409 |
| June... | 113 | 267 | 25,890 | 93 | 214 | 18,709 |
| July....... | 126 | 255 | 18,551 | 112 | 212 | 14,511 |
| August....... | 121 | 229 | 18,866 | 99 | 199 | 15,878 |
| September. | 122 | 229 | 16,082 | 98 | 198 | 12,664 |
| October.. | 158 | 269 | 17,115 | 150 | 244 | 15,754 |
| November. | 253 | 386 | 20,938 | 244 | 374 | 18,934 |
| December.. | 358 | 601 | 29,447 | 324 | 592 | 31,087 |
| Totals. | 2,460 | 487 ${ }^{1}$ | 493,971 | 2,192 | 414 | 409,208 |

${ }^{1}$ Average of month-end data.
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). The data on the insured population in Table 19 were obtained from returns from the renewal of insurance books and contribution cards at June 1, 1960 and June 1, 1961. Included are persons contributing in insurable employment on those dates and persons on claim.

## 19.-Persons Insured under the Unemployment Insurance Act, by Industrial Group and Sex, 1960 and 1961

Note.-Based on a 10-p.c. sample of contributors and claimants at June 1.


The following statement shows the current weekly rates of contribution and benefit that became effective Sept. 27, 1959. The weekly contribution is based on actual earnings in the week irrespective of the number of days in which the earnings are obtained; the employer pays a like amount. The benefit rates are calculated on the average weekly contributions for the last 30 weeks in the 104 weeks preceding claim. A claimant must have, to qualify for regular benefit, 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.

> WEEKLY RATES OF CONTRIBUTION AND BENEFIT UNDER THE UNEMPLOYMENT INSURANCE ACT, EFFECTIVE SEPT. 27,1959

Note.-Weekly rates in effect from Oct. 2, 1955 to Sept. 26, 1959 are given in the 1962 Year Book, p. 738.


## ${ }^{1} \mathrm{~A}$ half stamp, except for fishermen.

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. 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 unless otherwise prescribed. Disqualification of a claimant for a period not exceeding six weeks may be imposed if an employee is discharged by reason of his own misconduct or leaves the employment voluntarily without just cause or refuses suitable employment.

Table 20 distributes by province persons establishing regular benefit periods, regular benefit periods terminated, average weeks paid and average dollar benefit paid on these terminations. A claimant establishes a regular benefit period when he submits his claim in the prescribed manner and proves he has fulfilled the minimum contribution requirements. The duration of benefit authorized, the weekly rate authorized and 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.

## 20.-Persons Establishing Regular Benefit Periods, Benefit Periods Terminated, and Duration and Amount of Benefit Paid, by Province, 1960 and 1961

Nore.-Based on a 20 -p.c. sample.

| Province | 1960 |  |  |  | 1961 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Persons <br> Estab- <br> lishing <br> Benefit <br> Periods | Benefit <br> Periods Terminated | Average Weeks Paid on Termination | Average Amount Paid on Termination | Persons Establishing Benefit Periods | Benefit <br> Periods Terminated | Average Weeks Paid on Termination | Average <br> Amount <br> Paid on Termination |
|  | No. | No. | No. | \$ | No. | No. | No. | \$ |
| Newfoundland | 25,060 | 29,465 | 14.64 | 348.46 | 24,160 | 25,125 | 15.59 | 401.26 |
| Prince Edward Island. | 4,330 | 5,460 | 15.98 | 326.95 | 4,315 | 4,360 | 15.45 | 326.03 |
| Nova Scotia. | 44,655 | 50,275 | 14.13 | 305.81 | 45,005 | 45,380 | 15.08 | 358.58 |
| New Brunswick | 39,555 | 45,210 | 14.36 | 313.57 | 35,840 | 40,165 | 15.19 | 354.52 |
| Quebec... | 328,525 | 377,670 | 14.40 | 323.64 | 291, 765 | 328,900 | 14.49 | 352.13 |
| Ontario. | 379, 535 | 420,595 | 13.63 | 310.95 | 339, 190 | 376, 855 | 13.78 | 342.24 |
| Manitobs. | 43,365 | 43,525 | 13.86 | 302.02 | 42,725 | 46,385 | 14.73 | 359.13 |
| Saskatchewan. | 29,680 | 31,040 | 14.24 | 316.02 | 29,565 | 30,015 | 14.79 | 358.66 |
| Alberta........ | 58,805 | 58,800 | 12.65 | 288.31 | 51,390 | 58,630 | 13.53 | 339.49 |
| British Columbia | 112,240 | 128,280 | 13.69 | 320.26 | 103,725 | 110,540 | 14.56 | 381.33 |
| Totals | 1,065,750 | 1,190,320 | 13.94 | 315.55 | 967,680 | 1,066,355 | 14.29 | 352.87 |

Table 21 gives regular benefit periods terminated and average weeks paid, classified by the age of the claimant and by his occupation.

## 21.-Regular Benefit Periods Terminated and Duration of Benefit Paid, classified by Age of Claimant and Occupation, 1960 and 1961

Nore.-Based on a 20 -p.c. sample.

| Age Group and Occupation | 1960 |  | 1961 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Benefit Periods Terminated | Average Weeks Paid on Termination | Benefit Periods Terminated | Average Weeks Paid on Termination |
| Age Group | No. | No. | No. | No. |
| Under 20 years. | 46,935 | 13.00 | 42,230 | 12.82 |
| $20-24$ " | 205,130 | 13.40 | 184,575 | 13.83 |
| 25 - $34 \times$ | 342,995 | 12.99 | 308, 445 | 13.40 |
| 35 45 - 54 | 247,880 | 13.16 | 224,245 | 13.48 |
| $55-64$ " | 107,620 | 13.87 | 162,235 95,540 | 14.18 15.92 |
| 65 or over. | 51,015 | 24.04 | 42,900 | ${ }_{25.21}$ |
| Unspecified | 7,320 | 14.20 | 6,185 | 14.43 |
| Totals. | 1,190,320 | 13.94 | 1,066,355 | 14.29 |
| Occupation |  |  |  |  |
| Managerial. | 8,605 | 17.36 | 8,215 | 16.90 |
| Professional. | 11,510 | 13.04 | 9,240 | 14.23 |
| Clerical. | 112,805 | 17.20 | 102,270 | 17.60 |
| Transportation. | 112,040 | 13.23 | 100,475 | 14.23 |
| Commercial..... | 65,340 | 15.61 | 59,055 | 16.04 |
| Financial. | 1,215 | 12.98 | ,965 | 15.25 |
| Service. | 97,575 | 16.83 | 86,860 | 16.98 |
| Personal.. | 49,150 | 16.60 | 44,725 | 16.59 |
| Proteetic. | 38,460 12.675 | 15.80 20.90 | 29,495 10,890 | 15.99 |
| Other. | 2,290 | 14.38 | 1,750 | 14.54 |

21.-Regular Benefit Periods Terminated and Duration of Benefit Paid, classified by Age of Claimant and Occupation, 1960 and 1961 -concluded

| Occupation | 1960 |  | 1961 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Benefit Periods Terminated | Average Weeks Paid on Termination | Benefit Periods Terminated | Average Weeks Paid on Termination |
| Occupation-concluded | No. | No. | No. | No. |
| Agricultural.. | 8,675 | 14.42 | 8,565 | 14.77 |
| Fishing, trapping and logging. | 52,550 | 12.69 | 50,975 | 13.54 |
| Fishing and trapping. | 1,855 | 14.00 | 1,570 | 14.04 |
| Logging................ | 50,695 | 12.64 | 49,405 | 13.58 |
| Mining........................ | 24,170 | 11.35 | 21,395 | 13.48 |
| Manufacturing and mechanical | 239,460 | 12.32 | 217,650 | 12.17 |
| Electric light and power. | 16,485 | 13.85 | 15,210 | 14.16 |
| Construction. | 161,795 | 12.75 | 136,090 | 13.18 |
| Labourers... | 250, 165 | 13.75 | 224, 175 | 14.02 |
| Unspecified. | 18,085 | 14.22 | 16,960 | 13.80 |

Seasonal benefit is payable in the period Dec. 1 to mid-May to certain claimants whose benefits have been exhausted or who have insufficient contributions to qualify for regular benefit. Table 22 gives the provincial distribution of persons establishing seasonal benefit periods in 1960 and 1961, average weeks paid and average benefits paid.
22.-Persons Establishing Seasonal Benefit Periods, Duration of Benefit and Amount Paid, by Province, 1960 and 1961


## ${ }^{1}$ Dec 1, 1959 to May 21, 1960.

Employment Service.-The Unemployment Insurance Commission operates a free employment service under authority of the Unemployment Insurance Act. The public employment offices, which had functioned under a joint federal-provincial arrangement for more than two decades, were taken over by the Commission on Aug. 1, 1941, and additional offices were established in all provinces except Quebec. The Commission established its own offices in Quebec and the provincial government thereupon reduced the number of its offices.

## 23.-Applications for Employment, Positions Offered and Placements Effected by Employment Offices, by Province, 1960 and 1961

Nots.-Figures by province from 1920-57 are given in the corresponding table of previous Year Books beginning with the 1926 edition. Totals for 1920-37 are given in the 1938 edition, p. 766; for 1938 in the 1939 edition, p. 802; for 1939-48 in the 1951 edition, p. 686; for 1949 and 1950 in the 1960 edition, p. 790; and for 1951-59 in the 1962 edition, p. 741.

| Province and Year | Applications Registered |  | Vacancies <br> Notified |  | Placements Effected |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Males | Females | Males | Females | Males | Females |
|  | No. | No. | No. | No. | No. | No. |
| Newfoundland................. 1960 | 67,892 | 6,199 | 8,745 | 1,857 | 7,750 | 1,212 |
| 1961 | 70,753 | 6,014 | 10,722 | 1,766 | 9,455 | 1,127 |
| Prince Edward Island. . . . . . . . 1960 | 17,424 | 5,429 | 6,615 | 2,958 | 5,378 | 2,550 |
| 1961 | 18,938 | 6,325 | 8,830 | 3,225 | 6,918 | 2,837 |
| Nova Scotia................... 1960 | 107,594 | 30,500 | 24,354 | 11,838 | 22,821 | 9,261 |
| 1961 | 118,068 | 31,730 | 26,671 | 12,496 | 24,721 | 9,756 |
| New Brunswick................ 1960 | 117,564 | 29,670 | 31,656 | 8,794 | 30,641 | 7,235 |
| 1961 | 114,169 | 33,363 | 30,871 | 10,875 | 30,703 | 9,067 |
| Quebec. . . . . . . . . . . . . . . . . . . 1960 | 838,206 | 279,285 | 201,677 | 94,463 | 177, 195 | 74,824 |
| 1961 | 885,367 | 272,283 | 235,620 | 118,371 | 210,387 | 93,463 |
| Ontario........................ 1960 | 1,050,513 | 426,183 | 240, 127 | 142,087 | 212,943 | 108,530 |
| 1961 | 1,049,915 | 425,599 | 297, 109 | 170,083 | 262,370 | 132,046 |
| Manitoba...................... 1960 | -144, 674 | 56,922 | 45, 278 | 26, 833 | 38,441 | 20, 209 |
| 1961 | 136,547 | 58,267 | 43,418 | 28, 202 | 37,950 | 22,676 |
| Saskatchewan................. 1960 | 100,928 | 38,607 | 32,470 | 15,118 | 29,101 | 11,493 |
| Alberta 1961 | 104,719 | 40,329 | 31,735 | 15,950 | 28,917 | 12,623 |
| Alberta........................ 1960 | 191,993 | 75,408 | 60,980 | 34,586 | 52,833 | 24,774 |
| A 1961 | 196,059 | 76,226 | 71,326 | 38,079 | 64,082 | 26,959 |
| British Columbia.............. 1960 | 409,784 | 159,224 | 72,196 | 66,290 | 64,769 | 56,340 |
| 1961 | 430,660 | 156,654 | 80,232 | 70,072 | 73,287 | 60,518 |
| Totals................ 1960 | 3,046,572 | 1,107,427 | 724,098 | 404,824 | 641,872 | 316,428 |
| 1961 | 3,125,195 | 1,106,790 | 836,534 | 469,119 | 748,790 | 371,072 |

## Section 6.-Technical and Vocational Training

Because of the wide interest being shown in the development of technical and vocational education in Canada and the stimulation being advanced by governments through the provision of greatly expanded training facilities and programs, this subject is given detailed treatment in the following special article.

## RECENT DEVELOPMENTS IN PUBLIC TECHNICAL AND VOCATIONAL EDUCATION IN CANADA*

At probably no other time in Canadian history has there been more interest in education and training than there is today. An important expression of this interest is the greatly enlarged federal-provincial programs that are under way in all ten provinces which are designed to raise the level of technical knowledge and increase the occupational competency of the labour force. The reasons underlying this expansion in technical and vocational facilities and training programs are many. It had been evident for many years, and particularly in the postwar period, that the shortage of training facilities had been a serious drawback to the development of effective technical and vocational programs in Canada. Research studies conducted by the federal Department of Labour have pointed up the need for expanded and improved technical and vocational training facilities, both in the educational system and in industry, as a result of such factors as the rapid advances in technology and their effect on occupational needs and training requirements; the school drop-out problem; the shortage of skilled manpower; the insufficiency of training programs in industry; and the rapid increase in the population in the age group 15-19 years.

The acceleration in technology, which has been particularly apparent in the postwar years, has brought a growing demand for workers with higher levels of education and

[^216]training and with the ability to adapt to a continually changing work environment. A look at what has been happening to occupations points clearly to the growing need for more education and training. Estimates prepared by the federal Department of Labour show that in the period 1958-59 skilled, professional, and 'white-collar' jobs represented about 54 p.c. of employment in Canada, and that semi-skilled and unskilled occupations constituted some 30 p.c. Furthermore, the fastest growing occupations were those requiring higher levels of education and training. In the period 1949-59, professional occupations had increased by 71 p.c., skilled occupations by 38 p.c., and white-collar occupations by 34 p.c., while semi-skilled and unskilled occupations increased by only 24 p.c.

At the same time as the shift in occupations has been occurring, Canada has been faced with the serious problem of young people leaving school too early. The majority of youths who have been entering the labour force have not had sufficient education and training to meet the needs of industry. About one third of the young people who have entered elementary schools in recent years have left school at or before grade 8. Another third have left before completing high school.

In this regard, Canada faces an even greater problem in the next decade. The population in the age group 15-19 will increase by an estimated one quarter of a million persons over the period 1960-65 and in the last half of the decade the numbers will be even greater. It is essential, therefore, that these young people be provided with the kinds of education and training that will serve as effective paths to satisfying working careers in tomorrow's world.

The level of education and training of those already in the labour force is also cause for concern. About 43 p.c. of the work force in 1960 had an education of grade 8 or less, yet technological change has generated a need for workers with higher levels of education and training. Training programs in industry have not been increasing at a sufficient rate to meet either the growing demand for skilled people or the urgent demand for training facilities. Between 1946 and 1956, of the 280,000 skilled workers added to the labour force, 110,000 came from abroad. The heavy reliance on immigration as a major source for skilled and technical workers means that development of Canada's own manpower resources has been neglected to a considerable extent. Canada can no longer depend on immigration as a main source of trained manpower because the countries from which such manpower has traditionally been drawn also have a strong demand for skilled workers.

A recognition of all these factors culminated in the Technical and Vocational Training Assistance Act of December 1960, thus altering decisively the course of technical and vocational training. Essentially, the new legislation provided for greatly expanded assistance to the provinces to allow them more effectively to meet Canada's urgent need to train both the youth and adult populations.

The Pattern of Vocational Education and Training.-The pattern of vocational education and training in Canada varies from province to province and there are also variations within the provinces. There are basically three types of institutions offering vocational education-trade schools, secondary (or high) schools, and post-secondary technical institutes. 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 11 or even grade 12. On the other hand, enrolment in technical institutes presupposes high school graduation or at least high school standing in such relevant subjects as mathematics and the sciences. Training in schools is basically a provincial responsibility. Thus, most of the trade schools and institutes of technology across Canada are provincially operated, but many municipal school boards provide vocational courses as part of the regular high school program in technical or composite type schools.

Vocational education is also carried out under a system of apprenticeship training. A main feature of apprenticeship is that training is done mainly on the job with concurrent attendance in classes either during the evening or on a full-time basis during the day for periods ranging from three to ten weeks a year.

Federal Financial Assistance.-The Federal Government contributes substantially to the maintenance and development of vocational training facilities, recognizing vocational training as an important part of the economic development of the country. The financial involvement of the Federal Government in vocational training goes back half a century to the years immediately preceding the First World War. In 1913, the Agriculture Instruction Act provided $\$ 10,000,000$ to promote projects in agricultural training. The Technical Education Act of 1919 provided a similar amount for the development of industrial and technical education and introduced the principle of matching provincial capital expenditures. The Vocational Training Co-ordination Act of 1942, together with specific agreements signed by most of the provinces, established federal contributions toward vocational training, for both capital and operational expenditures. That Act was replaced in December 1960 by the Technical and Vocational Training Assistance Act (SC 1960-61, c. 6), which provides financial support to the provinces under two separate agreements: (1) the Technical and Vocational Training Agreement, which is the basic agreement and extends over the period Apr. 1, 1961 to Mar. 31, 1967; and (2) the Apprenticeship Training Agreement, a ten-year agreement which expires in 1964.

The new Act contains fundamental changes in the basic policy of federal financial assistance. Of perhaps greatest immediate effect is the provision that the Federal Government will contribute 75 p.c. of the total capital expenditures incurred by a province in the building and equipping of vocational training facilities up to Mar. 31, 1963, and 50 p.c. thereafter during the life of the Agreement.

The Minister of Labour has recently announced that an amendment will be introduced for the continuation beyond Mar. 31, 1963, of the 75-p.c. federal contribution up to a specified total for each province. This will allow provinces to share in the provision for capital facilities to an equal extent and will, at the same time, give them more time to put these training facilities into place.

The capital expenditure program under the new Act has given a tremendous impetus to the development of training facilities in Canada. As of Mar. 31, 1963, some 513 construction projects on new and existing schools, providing places for 138,000 additional students, were in various stages of completion across Canada. The total cost of these projects is $\$ 508,000,000$, of which the federal contribution is some $\$ 323,000,000$. The following table presents a summary of capital projects approved for Canada and the provinces.

Capital Projects Approved under the Technical and Vocational Training Agreement, April 1961 $^{1}$ to Mar. 31, 1963

| Province or Territory | Projects | Total Cost ${ }^{2}$ | Federal Share | New Student Places Provided |
| :---: | :---: | :---: | :---: | :---: |
|  | No. | \$ | \$ | No. |
| Newfoundland. | 15 | 28,258,258 | 21,055,075 | 3,670 |
| Prince Edward Island | 6 | 2,754,072 | 2,065,555 | 1,380 |
| Nova Scotia... | 14 | 9,589,506 | 7,191,629 | 2,704 |
| New Brunswick | 14 | 7,374,381 | 4,792,504 | 2,215 |
| Quebec. | 87 | 44, 598, 051 | 23,743, 419 | 7,603 |
| Ontario... | 259 56 | $319,915,532$ $7,037,562$ | $200,089,747$ $4,934,802$ | 98,556 2,180 |
| Saskatchewan. | 8 | 16,957, 584 | 8 8,224,611 | 3,654 |
| Alberta. | 33 | 49,924,849 | 36,994,715 | 11,575 |
| British Columbia | 19 | 19,771,312 | 13,585, 168 | 4,328 |
| Yukon Territory. | 1 | 909,062 | 682,796 | 144 30 |
| Northwest Territories | 1 | 480,000 | 64,800 | 30 |
| Canada. | 513 | 507,570,169 | 323,424,821 | 138,039 |

[^217]In addition to sharing in capital expenditures, the Federal Government also shares in the operating costs of the various programs conducted under the Agreement. The proportion of the federal share of such costs is indicated below.

Programs under the Technical and Vocational Training Agreement.-The ten different programs provided under this Agreement are closely correlated with the common objectives of training the country's labour force at all levels, below university, and in all fields.

Program 1, the Technical and Vocational High School Program, covers any courses or programs of regular secondary school, technical, vocational or composite high schools where the full-time courses have a minimum of 50 p.c. of the school time spent in instruction preparing for an occupation. Over the six-year period of the Agreement, the Federal Government will contribute up to a total of $\$ 15,000,000$ to the provinces on a sharing basis not to exceed 50 p.c. of provincial costs. Allotments are made on the basis of the number of persons in the 15-19 age group in each province.

Program 2, Technician Training, provides training at the post-secondary level. Training under this category covers engineering, science, business or other fields requiring advanced theoretical and practical training below the professional level. The Federal Government contributes 50 p.c. of provincial costs.

Program 3, Trade and Other Occupational Training, has a three-pronged objective: (1) to assist employed persons wishing to upgrade their skill; (2) to help those about to enter employment; and (3) to provide training for those individuals wishing to retrain for change of occupation. To qualify for training under this program, trainees must have left elementary or secondary schools and must be over the compulsory school attendance age. The Federal Government pays 50 p.c. of provincial costs.

Program 4, Training in Co-operation with Industry, may include the following: training to allow employees to upgrade their skills (including basic training in mathematics, science and languages), retraining for those required to learn new skills or occupations, and supervisory training. Projects undertaken under this program are developed jointly by the province and one or more employers or industries in the particular area. Training may be provided in public or approved private schools, in industrial establishments by means of full-time, part-day, day or evening, day release, sandwich, on-the-job type of programs, or by correspondence courses. The Federal Government contributes 50 p.c. of provincial expenditures on approved training programs.

Program 5, Training of the Unemployed, is designed to provide training for unemployed persons to improve their employment opportunities by increasing their basic education, trade, technical or occupational competence. Training under this program may be of the 'refresher' type or training for employment in an occupation previously followed by the trainee. The Federal Government may provide up to 75 p.c. of training costs when a minimum number of training days is given by a province in each fiscal year; otherwise, the federal share is 50 p.c.

Program 6, Training of the Disabled, provides for the technical or vocational or professional training, retraining, or vocational assessment of any disabled person who, because of a continuing disability, requires training to fit him for employment in a suitable occupation. One half of the provincial costs of approved programs is contributed by the Federal Government.

Program 7, Training of Technical and Vocational Teachers, includes training for technical and vocational teachers and for supervisors and administrators of technical and vocational programs. The federal share in such training is 50 p.c.

Program 8, Training for Federal Departments and Agencies, provides for training for members of the Armed Services or the Public Service as requested by any department or agency of the Federal Government. For such training or training services provided by a province under this program, the Federal Government will contribute up to 100 p.c. of training costs.

## TECHNICAL TRAINING FOR MODERN INDUSTRY

The nation's greatest asset is not in its reserve of natural resources but in the occupational and technical competency of its workers and in the potential productivity of its youth. Changing conditions of employment, technology and productive practices have created problems of displacement, unemployment and insecurity for unskilled workers and a dearth of persons trained in newly required skills. The growing need to overcome these and attendant social and economic problems has prompted on unprecedented expansion of technical and vocational education facilities and programs in Canada, the object of which is to prepare youth for entry into skilled and specialized employment and to provide for the adult the opportunity of increasing proficiency in his chosen field.


The co-ordinated manpower development ond edveotion progroms include training ar all levels below professional-the operator, the apprentice, the skilled worker, the craftsmon and the technician-in all occupational fields in primary, secondary, service and commercial industries.


## Photos:

Alberta Government
British Columbia Department of Education
Federal Department of Labour
John Inglis Co. Limited
Nova Scotia Information Service
Ontario Department of Travel and Publicity
Parkway Vocational School, Toronto
Philips Electronics Industries Ltd.
Vancouver School Board.

Program 9, Student Aid, is a means whereby financial assistance may be given to students at university and to nurses-in-training. At the discretion of the province, assistance may take the form of a grant or loan or combination of both. The federal contribution is limited by a fixed allotment.

In addition, the Federal Government contributes up to 50 p.c. of provincial costs of preparing, printing and servicing technical and vocational correspondence courses.

The Apprenticeship Training Agreement.-This Agreement has provided, since 1944, for a federal reimbursement of 50 p.c. of provincial expenditures for the training of apprentices in classes or their supervision on the job. Apprentices must be registered with the provincial Departments of Labour in designated trades. The purpose of this Agreement is to encourage and assist in the development of organized training for apprentices in all skilled trades.

Developments under the Various Programs.-A large part of the funds provided for new vocational school buildings is being used to expand facilities under Program 1. By mid-1963, 228 vocational secondary school projects (including 170 new schools) were under construction in Ontario to implement the new Ontario Secondary School Program. Alberta had 25 vocational high school projects (including 16 new schools) under construction. No vocational secondary school projects are under way in Quebec, Newfoundland or New Brunswick, but each of these provinces is expanding facilities at the trade school and technical institute level. Of the 513 projects now approved, 285 concern either major additions to existing vocational high schools or new buildings. The secondary vocational school programs are being re-examined in those provinces where expansion is under way. New programs and courses are being introduced and tested.

There are a number of problems to be solved, such as the co-ordination of Program 1 with all other programs and the needs of industry, full utilization of facilities that now represent a very large capital investment, and the development of recognized standards.

In 1961-62, estimated full-time enrolments in technical, vocational and composite high schools numbered 127,195 compared with 114,952 in 1960-61 and 104,676 in 1959-60.

One of the fastest growing occupational fields in Canada is that of technicians. In recent years, a number of institutes of technology at the post-secondary level have been established to help meet this growing need. Four new institutes of technology are in various stages of construction and additions are being made to 13 existing institutes. Additional facilities are being provided in 16 projects that have been or are being constructed as combined trade schools and institutes of technology. In 1961-62, 29 institutes and over 25 trade schools offered courses at the post-secondary level. Full-time enrolment for 1961-62 numbered 11,178 students and graduates numbered 1,961, contrasted with an estimated enrolment of 8,333 and 1,688 graduates in 1959-60.

Trade school projects approved under the Agreement as of Mar. 31, 1963 numbered 116 (including 46 new schools). Additional facilities are also being provided by the 16 combined trade and technical institutes mentioned previously. At the end of March 1963, there were 6,319 students enrolled in trade school courses under Program 3, exclusive of trainees who were unemployed or who were receiving training under other programs. Annual enrolments would be very much larger than the figure given because of continual enrolments throughout the school year in courses ranging in duration from five days to two years.

A considerable expansion of the training in co-operation with industry program is deemed to be essential for the development of manpower skills. In considering how training might best be encouraged in industry, a broad examination of the training needs in industry has been undertaken by the Department of Labour as a basis for producing practical proposals to encourage, strengthen and broaden existing training activities. Such an enquiry will be helpful in establishing guidelines for the development of new and vigorous training programs wherever needed in industry and in bringing about a fuller coordination of the various groups involved in such training.

The response to basic training for skill development-mathematics, science and communication skills-of those already in the labour force, both employed and unemployed, is noteworthy. There is a growing realization that such training is essential for the adaptation of workers to rapidly changing industrial conditions. There is considerable interest in the setting of standards for basic training which will be accepted as the equivalent of the usual entrance requirements in trade schools and institutes of technology. A significant development in this connection is an experimental co-operative scheme involving three employers in the Leaside area of Toronto, which began in January 1963. Working in co-operation with unions, provincial and federal governments, and local school board officials, these companies are providing a six-month course to upgrade their workers in mathematics, science and English to a level where they can take further training and retraining in specific skills. Trainees include men and women from a cross-section of workers, ranging in age up to 45 , who have completed grades 8 or 9 . The new courses are designed to raise the levels of attainment in the subjects given by two school grades, and the Ontario Department of Education has agreed to issue an Equivalency Certificate on a subject-grade basis when the trainee completes a course. This pilot project is being conducted under Program 4, Training in Co-operation with Industry. Basic training for skill development programs is also being provided in other provinces for the employed as well as the unemployed worker.

A strong effort is being made to train or retrain unemployed persons. Over the period Apr. 1, 1962 to Mar. 31, 1963, 38,439 persons were enrolled for training in some $9 \pm$ occupations under Program 5; in the previous year, 26,887 students were enrolled for training. The substantial increase in enrolment is a measure of the emphasis being placed on this form of training.

## Unemployed Persons Enrolled for Training, by Province, Years Ended Mar. 31, 1962 and 1963

| Province or Territory | 1961-62 | 1962-63 |
| :---: | :---: | :---: |
|  | No. | No. |
| Newfoundland. | 411 | 402 |
| Prince Edward Island. | 123 | 183 |
| Nova Scotia. | 694 | 873 |
| New Brunswick | 3,143 | 4,076 |
| Ontario. | 7,344 | 18,511 |
| Manitoba. | 2,083 | 2,325 |
| Saskatchewan. | 1,168 | 1,177 |
| Alberta. | 1,759 | 1,658 |
| British Columbia. | 1,854 | 2,416 |
| Yukon Territory | - |  |
| Northwest Territories. |  | 59 |
| Canada | 26,887 | 38,439 |

Disabled persons given training in the fiscal year 1962-63 numbered 2,966, compared with 2,765 in the previous fiscal year.

Teacher training programs have been expanded in most provinces to meet both immediate and long-term needs for technical and vocational training teachers. Although at present a number of short courses are being conducted to meet immediate needs, there is a definite trend toward acquiring at least one year of pre-service teacher education for individuals who wish to teach in secondary schools or adult vocational schools.

There were 20,576 apprentices registered in eight provinces (excluding Quebec and Prince Edward Island) as of June 30, 1962. Quebec is not a party to the Apprenticeship Agreement and Prince Edward Island signed the Agreement in 1962. In 1950, the number of registered apprentices was 9,482 , which means that over the period 1950-62 the number had more than doubled. Completions over this period rose from 1,807 to an estimated 4,400 .

Advisory Bodies.-The advisory body to the Minister of Labour under the Act is the National Technical and Vocational Training Advisory Council which provides a national forum for the discussion of matters pertaining to the development of training of Canada's manpower. The Council has a membership of 23, including representatives from employer organizations, organized labour, women's organizations, agriculture, Canadian veterans, the Canadian Association of Administrators of Labour Legislation, and provincial governments. The major continuing committees of the Council are the National Apprenticeship Committee and the National Advisory Committee on Technological Education, the latter being concerned with the development and co-ordination of interprovincial programs for educating technicians and technologists.

Provincial advisory and consultative committees on the technical and vocational training of manpower have also been established in most provinces under the Act. These committees include representation from employers, labour, provincial departments of education, youth and labour, and the National Employment Service.

Research Needs.-The full effects and accomplishments of the current program of technical and vocational training in Canada will not be known for some time, since it is still in the early stages of development and there are a number of problems to be overcome. A good deal of consideration is being given to the needs and problems that have arisen as a result of the large expansion of facilities and the objectives of the legislation, both at the federal and provincial levels.

It is recognized that the building of schools and the expansion of programs alone are not the complete answer to the training problem. There is a need to achieve a proper balance in the facilities being built, to improve the competency of teachers and teaching methods, to improve courses at all levels of technical education to better meet the needs of individuals and the changing requirements of industry, to bring about a better integration between the schools and industry and define the role that each can most effectively play in the training of manpower, and, most important, to determine present and future occupational requirements. The development of an educational-training system which takes into consideration the unfolding requirements of a changing economy for trained people should be based on continuing research activities to identify these needs, to throw light on their consequences for training policies and programs, and to assess the effectiveness of various kinds of training.

Recognition of the essential contribution of research to the development of technical and vocational training programs is contained in the Act, in that it provides for an expanded federal research program, which can be undertaken in co-operation with any province or provinces, in such areas as changing needs for training manpower, the relationship between technical and vocational training and the requirements of the economy, the development of course content through trade analyses, and the development of training standards.

## Section 7.-Industrial Accidents and Workmen's Compensation

## Subsection 1.-Fatal Industrial Accidents

Statistics of fatal industrial accidents have been compiled by the federal Department of Labour since 1903. The data are now obtained from provincial Workmen's Compensation Boards, the Board of Transport Commissioners and other government authorities, and from press reports.

Of the 1,086 fatal accidents to industrial workers that occurred during the year 1961, 275 were the result of the victims being struck by objects- 56 by falling trees or limbs, 31 by landslides or cave-ins, 27 by automobiles or trucks, 25 by materials falling from stockpiles and loads, 21 by trains or other railway vehicles, and 15 by objects being hoisted or conveyed. Falls and slips were responsible for 246 industrial deaths, of which 229 were falls to different levels, including 83 deaths caused by falls into rivers, lakes, seas or harbours, 35 by falls from scaffolds or stagings, 24 by falls from buildings, roofs and towers, and 18 by falls from ladders or stairs. Collisions, derailments,
wrecks, etc., were responsible for 193 fatalities-automobiles and trucks were involved in 110, aircraft in 38, and tractors and loadmobiles in 28. The classification "caught in, on, or between objects, vehicles, etc." included 122 fatalities, 43 of which were caused by tractors and loadmobiles, 22 by automobiles and trucks, and 21 by elevators, hoisting and conveying apparatus. Exposure to dust, poisonous gases and poisonous substances caused 90 fatalities and contact with electric current was responsible for 57 . Conflagrations, explosions and exposure to hot substances caused 57 deaths, 36 were the result of over-exertion, strain, etc., and 10 fatalities were caused by miscellaneous accident types.

## 24.-Fatal Industrial Accidents, by Industry, 1958-61

| Industry | Numbers |  |  |  | Percentages of Total |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1958 | 1959 | 1960 | 1961 | 1958 | 1959 | 1960 | 1961 |
| Agriculture.. | 97 | 101 | 69 | 68 | 7.6 | 7.6 | 6.1 | 6.3 |
| Logging. | 129 | 143 | 131 | 99 | 10.2 | 10.8 | 11.6 | 9.1 |
| Fishing and trapping..................... | 38 | 72 | 27 | 40 | 3.0 | 5.4 | 2.4 | 3.7 |
| Mining, non-ferrous smelting and quarrying. | 231 | 175 | 180 | 135 | 18.2 | 13.2 | 15.9 | 12.4 |
| Manufacturing. | 166 | 195 | 186 | 178 | 13.1 | 14.7 | 16.4 | 16.4 |
| Construction. | 281 | 297 | 199 | 238 | 22.1 | 22.4 | 17.4 | 21.9 |
| Electricity, gas and water production and supply. | 31 | 33 | 36 | 36 | 2.4 | 2.5 | 3.2 | 3.3 |
| Transportation, storage and communications. | 163 | 182 | 154 | 152 | 12.8 | 13.7 | 13.6 | 14.0 |
| Trade. | 40 | 50 | 51 | 52 | 3.2 | 3.8 | 4.5 | 4.8 |
| Finance. | 4 | 2 | 2 | 1 | 0.3 | 0.2 | 0.2 | 0.1 |
| Service. | 89 | 76 | 99 | 87 | 7.0 | 5.7 | 8.7 | 8.0 |
| Totals | 1,269 | 1,326 | 1,134 | 1,086 | 100.0 | 100.0 | 100.0 | 100.0 |

## Subsection 2.-Workmen's Compensation*

In all provinces legislation is in force providing for compensation for injury to a workman by accident arising out of and in the course of employment, or for disablement caused by a specified industrial disease, except where the workman is disabled for fewer than a stated number of days. The Acts of all provinces provide for a compulsory system of collective liability on the part of employers. To ensure payment of compensation, each Act provides for an accident fund, administered by the province, to which employers are required to contribute at a rate determined by the Workmen's Compensation Board in accordance with the hazards of the industry. A workman to whom these provisions apply has no right of action against his employer for injury from an accident during employment. The Acts vary in scope but in general they cover construction, mining, manufacturing, lumbering, transportation and communications and the operation of public utilities. The Acts also cover various types of commercial establishments. Undertakings in which not more than a stated number of workmen are usually employed are excluded in some provinces. In Ontario and Quebec, public authorities, railway and shipping companies, and telephone and telegraph companies are individually liable for compensation as determined by the Board and pay a proportion of the expenses of administration. 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 Merchant Seamen Compensation Act.

[^218]Benefits in case of disability include all necessary medical care and hospitalization, cash payments during the period of temporary disability to indemnify the injured workman for loss of wages, a life pension for any resulting permanent disability, and rehabilitation services. In the case of the death of the workman, a widow is granted a monthly pension, a special lump sum payment, an allowance for funeral expenses and a monthly payment for each child under the age limit provided by the law. When there is no dependent widow or children and there are other dependants such as a parent or parents, an award is made which; in the judgment of the Board concerned, is proportionate to the pecuniary loss sustained.

Table 25 gives the number of industrial accidents reported by each of the provinces and the amount of compensation paid by Workmen's Compensation Boards in the years 1960 and 1961.

## 25.-Industrial Accidents Reported and Compensation Paid by Workmen's Compensation Boards, 1960 and 1961



[^219]
## Section 8.-Organized Labour in Canada

At the beginning of 1963, 1,449,200 workers belonged to labour organizations active in Canada, an increase of almost 2 p.c. over the 1962 membership. Seventy-five per cent of the organized workers were members of unions affiliated with the Canadian Labour Congress (CLC). Of the unions within the CLC, a major group belonged also to the American Federation of Labor and Congress of Industrial Organizations (AFL-CIO) in the United States. Another 8 p.c. of union membership in Canada was in unions affiliated with the Confederation of National Trade Unions, and 16 p.c. was represented by unaffiliated international, national or local unions. About 2 p.c. of the total union membership in Canada belonged to unions having no affiliation with a central labour body in Canada but linked with the AFL-CIO.

The 1963 total union membership represented a net increase of 26,000 over the previous year. Sixteen unions operating in Canada reported increases of 1,000 members or more; the Steelworkers added 8,000, recording the largest increase for any single union, and the Auto Workers reported a gain of 4,300 . On the other hand, a number of unions experienced a falling-off in membership during the year; the membership of the Mine, Mill and Smelter Workers was down by 8,000 , the Teamsters' membership by 3,500 and the Seafarers by 2,400 . Six other unions reported decreases of 1,000 or more.

Of the $1,449,200$ union members reported in the 1963 survey, $1,031,700$ belonged to international unions having branches in both Canada and the United States and in most cases belonging to central labour bodies in both countries. Of the 110 international unions active in Canada in January 1963, 87 with 882,200 members were affiliated with the CLC and the AFL-CIO; three with 12,600 members were affiliated with the CLC only; and ten with 30,500 members were affiliated with the AFL-CIO only. Ten, accounting for some 106,300 members, were without any affiliation.

National unions active in Canada numbered 51 with 350,900 members in January 1963. Of these, 18 with 163,200 members were affiliated with the CLC, 13 with a membership of 104,500 were within the Confederation of National Trade Unions, and 20 with 83,200 members were without affiliation.

International and national unions had almost $1,382,600$ members in 161 unions at the beginning of 1963. Canadian membership in these unions ranged in size from fewer than 10 to the 90,000 reported by the United Steelworkers of America. The International Union, United Automobile, Aerospace and Agricultural Implement Workers of America, with an increase of 4,300 members to a total of 61,100 , replaced in second place the United Brotherhood of Carpenters and Joiners of America with 60,200 members. Among the national unions, the National Union of Public Employees with 52,900 members continued to rank first in size, followed by the 35,200 -member Canadian Brotherhood of Railway, Transport and General Workers.

The grand total of $1,449,200$ members reported by labour organizations in 1963 was equal to about 30 p.c. of the estimated total number of non-agricultural paid workers in Canada.
26.-Union Membership in Canada, 1935-63

| Year | Members | Year | Members | Year | Members | Year | Members |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | '000 |  | '000 |  | '000 |  | '000 |
| 1935. | 281 | 1942. | 578 | 19491 1, ${ }^{\text {. }}$ | 1,006 | 1957.... | 1,386 |
| 1936. | 323 | 1943.. | 665 | $1951{ }^{1}$ | 1,029 | 1958. | 1,454, |
| 1937. | 383 | 1944. | 724 | 1952. | 1,146 | 1959 | 1,4593 |
| 1938. | 382 | 1945. | 711 | 1953. | 1,220 |  |  |
| 1939. | 359 | 1946. |  | 1954. | 1,268 1,268 | 1961 | 1,423 |
| 1940..... | 362 462 | 1947. | 912 978 | 1955. | 1,268 1,352 | 1962. | 1,449 |
|  |  |  |  |  |  |  |  |

[^220]
## 27.-Union Membership, by Type of Union and Affiliation, as at January 1963

| Type and Affiliation | Unions | Locals | Membership |
| :---: | :---: | :---: | :---: |
| International Unions. | 110 | 4,424 | 1,031,658 |
| AFL-CIO/CLC. | 87 | 4,031 | 1,882,222 |
| CLC only.... | 3 | 42 | 12,614 |
| AFL-CIO only.. | 10 | 49 | 30,507 |
| Unaffiliated railway brotherhoods | 2 | 123 | 9,347 |
| Other unaffiliated unions. | 8 | 179 | 96,968 |
| National Unions. | 51 | 2,289 | 350,918 |
| CLC. | 18 | 1,442 | 163,227 |
| CNTU. | 13 | 490 | 104,497 |
| Unaffiliated unions. | 20 | 357 | 83,194 |
| Totals, International and National Unions................... | 161 | 6,713 | 1,382,576 |
| Directly Chartered Local Unions...................................... | 232 | 232 | 27,926 |
| CLC . .................................................................. | 181 | 181 | 21,846 |
| CNTU. | 51 | 51 | 6,080 |
| Independent Local Organizations. | 128 | 128 | 38,679 |
| Grand Totals. | 521 | 7,073 | 1,449,181 |

A list of the individual international and national unions, with number of locals and membership in Canada, is carried in the Department of Labour publication Labour Organizations in Canada, available from the Queen's Printer, Ottawa, price 35 cents.

## Section 9.-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 Unemployment Insurance Commission. Table 28 covers strikes and lockouts involving six or more workers and lasting at least one working day, and strikes and lockouts lasting less than one day or involving fewer than six workers but exceeding a total of nine man-days. 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. Where the number of workers involved varied in the course of a stoppage, the peak figure is used in tabulating annual totals. Workers indirectly affected, such as those laid off as a result of a work stoppage, are not included in the number of workers involved.

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. Where the number of workers involved varied during the period of a stoppage, an appropriate adjustment is made in the calculation as far as this is practicable. 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-days 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.

## 28.-Strikes and Lockouts by Industry, 1962 with Totals for 1958-62

Nore.-Comparable statistics, except for 1961, are given in the corresponding table of previous Year Books; the latter are available in the Department of Labour annual publication Strikes and Lockouts in Canada.


## Section 10.-Canada and the International Labour Organization

The Department of Labour is the officially designated liaison between the Government of Canada and the International Labour Organization. The ILO was established in 1919, in association with the League of Nations under the Treaties of Peace, with the object of improving labour and social conditions throughout the world by international agreement and legislative action. Under an agreement approved by the General Conference of the International Labour Organization and by the United Nations General Assembly in 1946, the Organization became a specialized agency of the United Nations although it retained its autonomy.

The ILO is an association of 107 Member States, financed by their governments and democratically controlled by representatives of those governments and of their organized employers and workers. It is comprised of three main organs: (1) the Governing Body; (2) the International Labour Office; and (3) the International Labour Conference. Ten tripartite industrial committees have been established to deal with problems of important world industries, by the holding of regional and special technical conferences, and by technical assistance to aid under-developed countries in such fields as co-operatives, social security, vocational training, productivity techniques and employment service organization. The ILO also administers numerous technical aid projects in developing countries on behalf of the United Nations Special Fund and the Expanded Program of Technical Assistance.

The Governing Body consists of 40 members- 20 government representatives, 10 employers' representatives and 10 workers' representatives. It is planned to increase the membership in June 1963 to 48-24 government representatives, 12 employers' representatives and 12 workers' representatives. Of the goverment seats, each of the 10 Member States of chief industrial importance (of which Canada is one) holds a permanent place and the other 10 government representatives are elected triennially by the Conference. The worker and employer members are elected by their groups every three years at the Conference. The Governing Body usually meets three times a year and has supervision over the work of the International Labour Office and the various Conferences and Committees, in addition to framing the budget and approving the agendas of the Conferences and meetings. Canada's representative on the Governing Body is the Deputy Minister of Labour for Canada.

The International Labour Office acts as the permanent secretariat of the ILO and as a world research and information centre and publishing house on subjects concerned with working and living conditions. In the operational field it assists Member States by furnishing experts on manpower training and other types of technical assistance. The ILO maintains branch offices in all parts of the world; the Canada Branch is located at 202 Queen Street, Ottawa.

The International Labour Conference is a world assembly for the consideration of labour and social problems. It meets annually and is attended by four delegates from each Member State (two representing the government, one representing the employers and one representing the workers) accompanied by technical advisers. The Conference formulates international standards concerning working and living conditions in the form of Conventions and Recommendations; the former are subject to ratification by the Member States concerned.

There have been 46 Sessions of the International Labour Conference, at which 118 Conventions and 117 Recommendations have been adopted. Canada has ratified 20 of these Conventions, of which 12 concern maritime and dock labour. In Canada the provincial legislatures are the competent legislative authorities with jurisdiction over the subjects covered by most of the ILO Conventions and Recommendations. The Department of Labour, as the official link with the International Labour Organization, is responsible for forwarding to the ILO reports on ratified Conventions as well as periodic reports on many other industrial and social matters. Canada is represented at most of the ILO annual and special meetings, and accounts of the discussions and decisions are regularly published in the Labour Gazette.

## CHAPTER XVII.-TRANSPORTATION

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing $p .1$ 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-Quebec 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. Unevenly distributed along a narrow southern strip of Canada's vast area is its relatively small population of $18,896,000$ (estimate of June 1, 1963). 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.

A special article giving some idea of the competitive problems that have faced the major agencies of transport during recent years of economic and technological change appears in the 1962 Year Book at pp. 753-758.

## PART I.-GOVERNMENT CONTROL OVER AGENCIES OF TRANSPORTATION

The Federal Government's control and regulation of transportation reflect to a considerable extent conditions that date back to the period when the railways possessed a virtual monopoly of transportation within the country. Although federal regulation was a direct outcome of such particular matters as the prevention of unjust discrimination in
rates and charges resulting from monopoly conditions in the industry and the safety of transportation facilities and operating practices, yet the railways have been so involved in the public interest that their regulation has been extended to become the most comprehensive of any industry in Canada.

In the meantime, conditions in the transportation industry have been drastically altered by the increasing competition arising from the advance of highway transportation and a large part of the present competition between common carriers has become a permanent feature of the transportation industry. In these circumstances, it is not surprising that regulations, which under monopoly conditions were not onerous to the railways or were purely nominal in their effect, are now alleged to have become increasingly restrictive and hampering under highly competitive conditions. Regulatory authorities are therefore faced with the problem of piecemeal 'revision of their regulations-retaining those where railway monopoly or near-monopoly conditions still make them necessary in the public interest, and relaxing those where competition can be relied on to protect the public in order to enable the railways to meet this competition more effectively. The emphasis has shifted from the regulation of monopoly to maintaining a balance between the several competing modes of transport.

In 1936, the amalgamation of the Department of Railways and Canals and the Department of Marine, together with the Civil Aviation Branch of the Department of National Defence, to form the Department of Transport brought under one control railways, canals, harbours, marine and shipping, civil aviation, radio and meteorology.

Road and highway development is mainly under provincial or municipal control or supervision. According to the judgment of the Judicial Committee of the Privy Council dated Feb. 22, 1954, jurisdiction over interprovincial and international highway transport rests with the Federal Government, but the Motor Vehicle Transport Act, 1954 gives to all provinces, at their option, the authority to apply to interprovincial and international highway transport the same regulations respecting certificates of public convenience and necessity and rates as they apply to undertakings operating entirely within the province. This Act has since been proclaimed in seven provinces.

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, a Deputy Chief Commissioner, an Assistant Chief Commissioner and three 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.

[^221]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, over tolls for express traffic and tolls 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. Since the end of World War II there has been a succession of applications for authority to make general freight rate increases and general telephone rate increases.

A review of transport regulation was undertaken by the Royal Commission on Transportation, under the chairmanship of the Hon. W. F. A. Turgeon, which held extensive hearings in 1949-50 and issued its Report in 1951 (see 1952-53 Year Book, p. 741). Certain of its recommendations were incorporated into the Railway Act by amendments made in 1951 (see 1962 Year Book, p. 760).

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.

A Royal Commission was appointed May 13, 1959 with the Hon. C. P. McTague named as chairman (later succeeded by M. A. MacPherson) to inquire into the railway rate structure and other matters affecting transportation. Its findings were published in three volumes, which appeared between March 1961 and July 1962.

On July 8, 1959, Parliament passed the Freight Rates Reduction Act designed as a relief measure for shippers. The Act provided a fund of $\$ 20,000,000$ to permit a reduction in class and commodity rates (other than competitive rates) on Canadian railways for a period of one year to Aug. 1, 1960. In compliance with the Act, the Board of Transport Commissioners ordered the substitution of an increase of 10 p.c. for the permissive increase of 17 p.c. authorized in November 1958 but suspended pending the findings of the Royal Commission. A further reduction, substituting an increase of 8 p.c. in lieu of 10 p.c. was ordered effective May 1960; these reduced rates have continued in effect. Later amendments extended the Freight Rates Reduction Act to Apr. 30, 1961 and then to Apr. 30, 1962 and the authorized expenditure was raised from $\$ 20,000,000$ to $\$ 35,000,000$ and then to $\$ 55,000,000$. In respect of the year 1961, interim payments related to recommendations of the Royal Commission pending its complete report were authorized by Parliament to the amount of $\$ 50,000,000$ to compensate the railway companies for maintenance of their rates on freight traffic at the reduced levels.

The Freight Rates Reduction Act was not extended beyond Apr. 30, 1962, but authority for payments in respect of reduced freight rates between that date and Mar. 31, 1963 was
provided under Governor General's Warrant. Provision for extended authority in respect of the period Apr. 1, 1963 to Mar. 31, 1964 for payments of $\$ 50,000,000$ in respect of the calendar year 1963 was made in Supplementary Estimates (A) for the year ending Mar. 31, 1964.

Total payments under the so-called $\$ 20,000,000$ and $\$ 50,000,000$ subsidies, respectively, have been $\$ 72,300,000$ for the period Aug. 1, 1959 to June 30, 1963 and $\$ 124,800,000$ for the period Jan. 1, 1961 to June 30, 1963.

The Air Transport Board.-The Air Transport Board was established in September 1944 by amendment to the Aeronautics Act. Subsequent amendments to the Act were made in 1945, 1950 and 1952. The Board has three members including the Chairman, and the staff is comprised of a Senior Adviser; a Legal Branch; an Operations Branch which includes the Traffic Division, Operations Analyst, Special Traffic Adviser, International Relations Division, and the Licensing and Inspection Division; an Economic and Accounting Branch which includes the Economics Division, Audit Division and Financial Analyst; and a Secretary's Branch which includes the Administrative Division. In addition, a small staff is located in Montreal to serve the Senior Canadian Representative on the Council of the International Civil Aviation Organization.

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. Financial and operating statistics are collected under authority of the Board's Regulations.

The Board has under study the potential for and requirements of increased and improved air services into the Canadian North as well as the consolidation of its over-all regulations. The procedures governing applications for licence are being examined for improved processing methods.

The Board continues to take an active part in the work of the International Civil Aviation Organization and to undertake bilateral negotiations for the exchange of traffic rights when appropriate. At present, Trans-Canada Air Lines, Canadian Pacific Air Lines Limited and TransAir 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".

In 1961 a national maritime policy was inaugurated to encourage the construction and operation of ships in Canada and, as well, provide assistance to Canadian fishermen. A federal capital subsidy was authorized, amounting to 35 p.c. of the cost of construction of self-propelled ships in Canadian shipyards, to be increased to 40 p.c. for work done after May 12, 1961 and under any contract entered into and filed with the Commission on or before Mar. 31, 1963. For steel fishing trawlers constructed to replace old vessels withdrawn from service, the assistance is 50 p.c. of the cost. Capital grants toward the construction of small wooden fishing vessels were also increased. Payments of capital subsidy are made under regulations of the Governor in Council; up to Mar. 31, 1963, about $\$ 24,500,000$ was expended under the regulations.

Subsidies have been paid by the Federal Government for the maintenance of essential steamship services since the latter part of the nineteenth century; the services subsidized and the amounts paid for the years ended Mar. 31, 1962 and 1963 are given on p. 804.

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 (see Index).

## PART II.-RAIL TRANSPORT*

## Section 1.-Railways

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. Although highway and air competition is increasing, the railways still retain their primary position in the freight transport field.

The two national railway companies control a wide variety of Canadian and international transport and communication services. The government-owned Canadian National Railway System is the country's largest public utility and operates the greatest length of trackage in Canada. In addition, it operates a highway service, a fleet of coastal and ocean-going steamships, a national telecommunications system connecting the principal points of Canada with other parts of the world, an extensive express service in Canada and abroad, 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. Its chief competitor, the Canadian Pacific Railway Company, is a joint-stock corporation

[^222]operating a transcontinental railway supported by a national telecommunications system with connections throughout the world, a large 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 limited (one flight daily each way) transcontinental air service between Vancouver and Montreal. Also included in the company's operations are a world-wide express service and a domestic truck and bus network.

The Pacific Great Eastern Railway, owned by the British Columbia Government, operates over a 789.5 -mile route from North Vancouver to Fort St. John in the Peace River area of northeastern British Columbia, with a branch line from Chetwynd to Dawson Creek. The completion in 1958 of the northern section of this line opened up to development the vast interior of the province and brought to an end the largest railway construction job undertaken in North America for two decades. With the completion in May 1959 of the last link in the microwave system, the PGE became the first railway on the Continent to be operated entirely by means of radio communication.

The statistics in Subsections 1 to 3 of this Section cover the combined railway facilities of all companies operating in Canada, including intercity freight and passenger services of electric railway companies. Details relating to the Canadian National Railway System are dealt with separately in Subsection 4. A special article covering the consolidation and organization of the CNR appears in the 1955 Year Book at pp. 840-847.

## Subsection 1.-Milage and Equipment

Construction was begun in 1835 on the first railway in Canada-the 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 little change in total track milage since the late 1920's, although in recent years the development of a number of large projects in districts far removed from transport facilities and the opening up of the Northwest Territories has 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 1961 are mentioned in subsequent editions. During 1962, the first section of the 430 -mile Great Slave Railway, being built by the CNR for the Federal Government, went into operation. By the end of October, track had reached Manning, Alta., a distance of 56 miles, and rail grain shipments began moving out of this northerly agricultural area. At year-end, 73.5 miles of track had been completed and clearing, grading, bridge and trestle work progressed on the remainder of the right-of-way. Also in Alberta, a 23 -mile rail extension was constructed from Whitecourt to Windfall to carry sulphur shipments from the Windfall gas fields. Track-laying was two thirds completed on the 61 -mile branch line to the Matagami Lake region in northern Quebec and construction was started on an eight-mile extension from Chisel Lake to a new mining development at Stall Lake in northern Manitoba. Preparatory work was undertaken for the construction of a 15 -mile branch line from Nepisiguit Junction, near

Bathurst, N.B., to a zinc, lead and copper mining development, and a survey report was made on the possible construction of a 57 -mile line between Matane and Ste. Anne des Monts in the Gaspe region of Quebec. The CPR completed a 16 -mile branch line south from Bredenbury, Sask., to serve a new mineral development and the PGE began construction of a 100 -mile extension in northern British Columbia, which will leave the existing main line about 35 miles north of Prince George; it is scheduled for completion in 1965.

While new construction has added considerably to first main track milage placed in operation in the past few years, other lines have been abandoned because they have become unprofitable. Thus, new milage is not reflected in the totals shown in Table 1.

## 1.-Railway Track Milage Operated, 1900-61

Note.-Figures of total milage of first main track operated for 1835-1909 are given in the 1941 Year Book, p. 546; for 1911-14 in the 1954 edition, p. 786; for 1916-24 in the 1955 edition, p. 830; and for 1926-49 in the 1956 edition, p. 792.

| First Main Track Milage |  | Track Milage by Area and Type |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Year | $\left\lvert\, \begin{gathered} \text { Miles } \\ \text { in } \\ \text { Operation } \end{gathered}\right.$ | Area and Type of Track | 1958 | 1959 | 1960 | 1961 |
|  | No. |  | No. | No. | No. | No. |
|  |  | First Main- |  |  |  |  |
| 1900... | 17,657 | Newfoundland...... | 934 | 934 | 934 | 933 |
| 1905. | 20,487 | Prince Edward Island. | 285 | 285 | 284 | 279 |
| 1910. | 24,731 | Nova Scotia....... | 1,336 | 1,333 | 1,316 | 1,298 |
| 1915. | 34,882 | New Brunswick | 1,818 | 1,818 | 1,783 | 1,783 |
| 1920. | 38,805 | Quebec... | 5,096 | 5,228 | 5,228 | 5,224 |
| 1925. | 40,350 | Ontario. | 10,467 | 10,421 | 10,245 | 10,188 |
| 1930 | 42,047 | Manitoba. | 5,004 | 5,004 | 5,056 | 4,954 |
| 1935. | 42,916 | Saskatchewan | 8,721 | 8,721 | 8,721 | 8,606 |
| 1940. | 42,565 | Alberta. | 5,679 | 5,680 | 5,679 | 5,689 |
| 1945 | 42,352 | British Columbia. | 4,388 | 4,388 | 4,386 | 4,338 |
| $1950{ }^{1}$ | 42,979 | Yukon Territory. | 58 339 | 58 339 | 58 339 | 58 339 |
| 1951. | 42,956 | United States... | 339 | 339 | 339 | 339 |
| 1953. | 42,953 43,163 | Totals, First Main. | 44,125 | 44,209 | 44,029 | 43,689 |
| 1954. | 43,132 |  |  |  |  |  |
| 1955. | 43,444 | Second main. | 2,444 | 2,350 | 2,243 | 2,150 |
| 1956. | 43,652 43,890 | Other main.. |  |  | 45 | 48 |
| 1958. | 43,890 44,125 | Industrial. | 1,216 | 1,219 | 1,248 | 11,262 |
| 1959. | 44,209 | Yard and sidings. | 11,534 | 11,616 | 11,628 | 11,633 |
| 1960. | 44,029 43,689 | Grand Totals. | 59,319 ${ }^{2}$ | 59,394 ${ }^{3}$ | 59,193 ${ }^{3}$ | 58,7824 |

[^223]Rolling-Stock.-Although the figures of Table 2 show the number of the different types of rolling-stock in operation at Dec. 31 of the years 1955 to 1961, they do not by any means give a complete picture of rolling-stock capacity for service. Each year hundreds of units, particularly freight cars, are retired and replaced by more efficient equipment, much of it specially designed and engineered for specific hauling jobs. Improvement in the efficiency of car use is also a factor that may reduce the amount of equipment required. Between 1955 and 1961 the average capacity of box cars increased from 45.8 tons to 47.2 tons, of gondola cars from 64.4 tons to 65.5 tons, flat cars from 45.6 tons to 48.1 tons, hopper cars from 64.6 tons to 67.0 tons, ore cars from 63.3 tons to 79.4 tons and of all freight cars from 48.6 tons to 51.6 tons. The average tractive power of locomotives advanced during the same period from $42,701 \mathrm{lb}$. to $56,597 \mathrm{lb}$. Table 2 shows the increasing number of diesel locomotives in service. The Canadian National Railways
completed its dieselization program during 1960，retiring all remaining steam units from service，while the Canadian Pacific Railway Company at the close of 1961 had replaced all but 188 steam locomotives．

2．－Railway Rolling－Stock in Operation as at Dec．31，1955－61

| Type | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No． | No． | No． | No． | No． | No． | No． |
| Locomotives． | 4，714 ${ }^{1}$ | 4，790 | 4，821 | 4，823 | 4，720 | 3，752 | 3，547 |
| Steam－ | 2,521 | 2， 228 | 1857 | 1，483 | 1，143 | 335 | 144 |
| Oil burning．． | 2，704 | 2，621 | 1，537 | 1，477 | 1，371 | ${ }_{68}$ | 53 |
| Diesel electric | 1，455 | 1，895 ${ }^{1}$ | 2，372 | 2，799 | 3，155 | 3，308 | 3，309 |
| Electric．．．．． | 33 | 46 | 55 | 64 | 51 | 41 | 41 |
| Passenger Cars． | 6，574 | 6，220 ${ }^{2}$ | 5，942 | 5，733 | 5，456 | 5，119 | 4，737 |
| Coach． | 2，058 | 1，799 | 1，597 | 1，486 | 1，409 | 1，342 | 1，237 |
| Combination． | 325 | 340 | 343 | 328 | 182 | 172 | 152 |
| Colonist． | 226 | 178 | 136 | 124 | 96 | 88 | 81 |
| Dining． | 201 | 186 | 183 | 174 | 159 | 149 | 134 |
| Parlour． | 172 | 173 | 167 | 162 | 143 | 137 | 127 |
| Sleeping． | 969 | 925 | 879 | 900 | 919 | 861 | 804 |
| Baggage，express an | 2，433 | 2，404 | 2，398 | 2，336 | 2，353 | 2，218 | 2，061 |
| Self－propelled． | 75 | 90 | 129 | 139 | 128 | 111 | 103 |
| Other． | 115 | 112 | 110 | 84 | 67 | 41 | 38 |
| Frelght Cars． | 185，956 | 191，974 ${ }^{3}$ | 197，907 | 196，893 | 194，512 | 191，553 | 186，387 |
| Automobile． | 7，406 | 6，370 | 6，733 | 6，722 | 7，270 | 7，249 | 7，225 |
| Ballast． | 2，378 | 2，156 | 2，646 | 2，708 | 3，140 | 3，128 | 3，113 |
| Box． | 114，814 | 118，353 | 121，346 | 117，604 | 114， 181 | 111，217 | 108，239 |
| Flat | 12，037 | 11，876 | 11，975 | 12，058 | 12，270 | 12，645 | 12，164 |
| Gondola | 18，592 | 19，052 | 19，904 | 20，522 | 20，428 | 20，310 | 20，168 |
| Hopper | 12，247 | 12，870 | 13，788 | 15，493 | 15，601 | 15，578 | 15，571 |
| Ore． | 2，559 | 5，465 | 5，967 | 6，004 | 5，964 | 5，930 | 5，892 |
| Refrigerator | 9，735 | 9，906 | 10，022 | 10，184 | 10，155 | 10，076 | 8，635 |
| Stock． | 5，776 | 5，501 | 5，141 | 5，195 | 5，025 | 4，917 | 4，589 |
| Tank． | 378 | 389 | 384 | 382 | 455 | 472 | 479 |
| Other． | 34 | 16 | 1 | 21 | 23 | 31 | 312 |
| Privately Owned Car | － | － | － | － | 4，853 | 5，031 | 5，072 |
| Flat． | － | － | － | － |  | 7 | 7 |
| Gondola | － | － | － | － | － | 2 | 2 |
| Tanper |  | － | 二 | 二 | 37 4809 | $\stackrel{23}{ }$ | 23 |
| Refrigerator． | － | 二 | 二 | 二 | － | 4，999 | 5,035 5 |

${ }^{1}$ Includes one gasoline locomotive．


## Subsection 2．－Finances

The tables in this Subsection give information on capital liability and capital invest－ ment，earnings，operating expenses，employees and their earnings and government aid to all railways．＊Financial statistics of government－owned railways are given separately and in detail in Subsection 4．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 this Subsection，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，includ－ ing maintenance and depreciation of the plant used in such service．

[^224]Capital Liability and Investment.-The capital liability of railways operating in Canada for the years 1942 to 1961 is shown in Table 3. The increase of $\$ 12,455,158$ in 1961 over 1960 compares with an increase in investment in road and equipment property of $\$ 85,684,597$ as shown in Table 4.

## 3.-Capital Liability of Railways, 1942-61

Note.-Figures for 1876-1925 are given in the 1927-28 Year Book, p. 649, and those for 1926-41 in the 1947 edition, p. 662.
(Exclusive of Canadian railway capital owned by Canadian railways)

| Year | Stocks | Funded Debt | Total | Year | Stocks | Funded Debt | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ |  | \$ | \$ | \$ |
| 1942. | 1,578,254,765 | 1,793,579,270 | 3,371,834,035 | 1952 ${ }^{2}$. | 2,406,309,060 | 1,308,899,612 | 3,715,208,672 ${ }^{1}$ |
| 1943. | 1,614,936,131 | 1,741,664,036 | 3,356,600,167 | 1953. | 2,422,692,856 | 1,439,063,402 | $3,861,756,2581$ |
| 1944. | 1,636,064,822 | 1,707,801,676 | 3,343,866,498 | 1954. | 2,499,778,848 | 1,475, 815,267 | 3,975,594,1151 |
| 1945. | 1,631,973,055 | 1,701,786,899 | 3,333,759,954 | 1955. | 2,543,465,586 | 1,565,109,030 | 4,108,574,6161 |
| 1946. | 1,624,753,709 | 1,665,844,138 | 3,290,597,347 | 1956. | 2,572,487,313 | 1,612,706,551 | $4,185,193,8641$ |
| 1947. | 1,623,607,219 | 1,685,010,672 | 3,308,617,891 | 1957. | 2,565,559,683 | 1,764,660,210 | 4,330,219,8931 |
| 1948. | 1,578,057,474 | 1,672,282,030 | 3,250,339,504 | 1958. | 2,646,659,697 | 1,953,114,826 | 4,599,774,5231 |
| 1949. | 1,576,734,292 | 1,692,898,968 | 3,269,633,2601 | 1959 | 2,669,062,269 | 2,122,675,213 | 4,791,737,482 ${ }^{1}$ |
| 1950. | 1,649,462,088 | 1,826,346,222 | 3,475,808,3101 | 1960 | 2,725,827,684 | 2,244,571,812 | 4,970,399,4961 |
| 1951. | 1,646,205,772 | 1,925,488,160 | 3,571,693,932 | 1961 | 2,748,537,919 | 2,234,316,735 | 4,982,854,6541 |

${ }^{1}$ Exclusive of approximately $\$ 40,000,000$ railway debt in Newfoundland assumed in $1949 . \quad{ }^{2}$ Affected by readjustment in the capital structure of the CNR (see p. 763).

## 4.-Capital Invested in Railway Road and Equipment Property, 1957-61

| Investment | 1957 | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | \$ | \$ |
| Road...................... | 226,971,459 | 174,390,869 | 134,823,880 | 113,587,736 | 72,244,687 |
| Equipment................. | 189,383,255 | 133,068, 199 | 78,487,442 | Cr. 12,920,826 | Cr. 30,683,878 |
| General. | Cr. 77,635,769 | Cr. 1,673,544 | Cr. 816,428 | Cr. 35,546 | 3,152,244 |
| Undistributed. | 16,761,171 | 2,253,817 | 42,668,998 | 6,742,707 | 40,971,544 |
| CNR non-rail property.... | 6,579,570 | 6,017,011 | 1,861,080 | 6,538,741 | 15,506,157 |
| CPR " " | 9,948,881 | Cr. 8,825,080 | 36,878,761 | 122,850 | 25,492,758 |
| Other " " | 243,720 | 61,886 | 3, 929,207 | 81,136 | Cr. 27,965 |
| Totals. | 355,480,116 | 308,039,341 | 255,163,892 | 107,374,071 | 85,684,597 |
| Cumulative Investment to Dec. 31. | 6,074,129,038 ${ }^{1}$ | 6,382,168,379 | 6,637,332,271 | 6,744,706,342 | 6,830,390,939 |

[^225]
## 5.-Operating Revenues and Expenses of Railways, 1952-61

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 Expenses | RatioofOperatingExpensestoOperatingRevenues | Per Mile of Line |  |  | Freight- <br> Train <br> Revenue per <br> Freight- <br> Train <br> Mile | PassengerTrain Revenue per PassengerTrain Mile |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Operating Revenues | Operating Expenses | Net Operating Revenues |  |  |
|  | \$ | \$ | p.c. | \$ | \$ | \$ | \$ | S |
| 1952.... | 1,172,158,665 | 1,057,186,304 ${ }^{1}$ | 90.19 | 27,272 | 24,597 | 2,675 | 10.56 | 3.50 |
| 1953....... | 1,205, 935,414 | 1,100,393,836 ${ }^{1}$ | 91.25 | 28,020 | 25,567 | 2,453 | 11.43 | 3.53 |
| 1954. | 1,095,440,918 | 1,019,534,989 ${ }^{1}$ | 93.07 | 25,402 | 23,642 | 1,760 | 11.58 | 3.44 |
| 1955....... | 1,198,351,601 | 1,048,564,681 ${ }^{1}$ | 87.50 | 26,876 | 23,517 | 3,359 | 12.21 | 3.60 |
| 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 | 1,203,530,146 | 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 | 696 | 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 | 25,544 | 24,608 | 936 | 15.54 | 3.46 |
| 1961....... | 1,156,480,700 | 1,114,432,525 | 96.36 | 25,736 | 24,800 | 936 | 16.72 | 3.32 |

${ }^{1}$ Excludes equipment rents, joint facility rents and tax accrusls.
6.-Distribution of Operating Expenses of Railways, 1959-61

| Item | 1959 |  | 1960 |  | 1961 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | p.c. | \$ | p.c. | \$ | p.c. |
| Road maintenance. | 259,958,839 | 22.3 | 243,990,846 | 22.0 | 243,445,087 | 21.9 |
| Equipment maintenance. . . . . . . . . . | 256,778,520 | 22.0 | 249,473,225 | 22.5 | 249,354,157 | 22.4 |
| Traffic.. | 29,140,473 | 2.5 | 28,866,434 | 2.6 | 29,027,607 | 2.6 |
| Transportation. | 443,292,012 | 38.0 | 424,924,203 | 38.3 | 423,367,291 | 38.0 |
| General and miscellaneous.. | 113,955,685 | 9.8 | 103,370,511 | 9.3 | 108,555,373 | 9.7 |
| Rents and taxes. | $63,181,195$ | 5.4 | 58,845,207 | 5.3 | 60,683,010 | 5.4 |
| Totals. | 1,166,306,724 | 100.0 | 1,109,470,426 | 100.0 | 1,114,432,525 | 100.0 |

Employment and Salaries and Wages.-Railway employment in 1961 declined 5 p.c. from employment in the previous year, 23 p.c. from that in 1956 and was 16 p.c. lower than the average for the ten-year period 1952-61. Compared with 1952, employees on hourly rates in 1961 worked 0.4 p.c. fewer average hours but their average wages per hour were 7 p.c. higher. Since 1956, statistics have been reported in accordance with the revised Canadian Classification of Railway Employees and Their Compensation, which became effective Jan. 1, 1956.

## 7.-Railway Employees and Their Earnings, 1952-61

Nore.-Figures include employees and wages for 'outside' operations 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 $1912-39$ are given in the 1941 Year Book, p. 551 ; for 1940-49 in the 1951 edition, p. 723 ; and for 1950 and 1951 in the 1961 edition, p. 785 .

| Year | Employees | Total Salaries and Wages | Average Salaries and Wages | Ratio of Total Payroll (charged to operating expenses) |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Operating <br> Revenues | Operating Expenses |
|  | No. | \$ | \$ | p.c. | p.c. |
| 1952.. | 214,143 | 669,457,962 | 3,126 | 52.1 | 57.7 |
| 1953. | 211,951 | 724,077,594 | 3,416 | 53.4 | 58.6 |
| 1954. | 196,307 | 661,829,774 | 3,371 | 54.3 | 58.3 |
| 1955. | 195,459 | 674,875,767 | 3,453 | 50.2 | 57.4 |
| 1956..... | 215,324 ${ }^{1}$ | 780, 135, 918 | 3,623 | 50.6 | 55.9 |
| 1957. | 212,426 ${ }^{1}$ | 791,529,117 | 3,726 | 51.4 | 53.9 |
| 1958. | 192,8091 | 757,907,896 | 3,931 | 52.7 | 54.3 |
| 1959. | 187,981 ${ }^{1}$ | 780,031,534 | 4,150 | 51.5 | 54.2 |
| 1960. | 175,5371 | 740,475,804 | 4,218 | 52.0 | 54.2 |
| 1961.. | 166,081 | 748, 097, 831 | 4,504 | 52.7 | 54.9 |

${ }^{1}$ Includes employees engaged in cartage and highway transport (rail) operations.
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 were given in a later period 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. Bonds guaranteed by the Governments of New Brunswick, Ontario, Manitoba, Saskatchewan, Alberta and British Columbia have been eliminated in this manner in recent years. Railway bonds guaranteed by the Government of Canada at Dec. 31, 1961 amounted to $\$ 1,670,653,176$; this amount includes $\$ 88,972$ perpetual debenture stock and guaranteed stock of the former Grand Trunk Railway, now part of the Canadian National Railway System, on which interest and dividends are guaranteed by the Federal Government.

## Subsection 3.-Passenger and Freight Traffic

Tables 8 and 9 show passenger and freight statistics for all railways for the years 1957-61. A separate analysis of the operations and traffic of the Canadian National Railways is given at pp. 763-766.

## 8.-Statistics of Passenger Service and Revenue, 1957-61

Nors.-Figures for earlier years are given in the corresponding table of previous Year Books.

| Item | 1957 | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Revenue passenger-train miles ${ }^{1} . . . . . . . . . .$. ' 000 | 41,630 | 40,546 | 38,212 | 34,493 | 31,131 |
| Passenger-train car miles ${ }^{\text {², }}$. $\ldots \ldots . . . . . . .$. | 409,175 | 382,341 | 367,551 | 344,996 | 311,912 |
|  | 22,966 | 21,376 | 20,940 | 19,497 | 18,784 |
| Passenger-miles. .......................... | 2,925,133 | 2,485,861 | 2,445,654 | 2,263,795 | 1,960,591 |
| Passenger-miles per mile of line........... No. | 65,236 | 55,040 | 54,109 | 50,212 | 43,631 |
| Average receipts per passenger-mile....... cts. | 2.97 | 3.11 | 3.01 | 3.05 | 3.12 |
| Average receipts per passenger............ \$ | 3.78 | 3.62 | 3.51 | 3.55 | 3.26 |
| Average passenger journey................miles | 127 | 116 | 117 | 116 | 104 |
| Average passengers per train............. No. | 70 | 61 | 64 | 66 | 63 |
| Passenger-train revenue per passenger-train mile. | 3.30 | 3.11 | 3.29 | 3.46 | 3.32 |

${ }^{1}$ Includes express, baggage, mail and other cars. $\quad{ }^{2}$ Duplications included.

## 9.-Statistics of Freight Service and Revenue, 1957-61

Nork.-Figures for earlier years are given in the corresponding table of previous Year Books.

| Item | 1957 | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Revenue freight-train miles................ ' 000 | 77,992 | 68,656 | 68,351 | 63,887 | 60,593 |
| Revenue freight-train car miles ${ }^{1} . . . . . . . .$. . | 3,540,096 | 3,324,508 | 3,322,167 | 3,249,824 | 3,234,586 |
|  | 174,163 | 153,525 | 166,186 | 158,466 | 153,202 |
| Freight ton-miles........................ ' 000 | 71,047,229 | 66, 356,829 | 67,956,540 | 65,444,784 | 65, 828,403 |
| Freight ton-miles per mile of line.......... " | 1,584 | 1,469 | 1,503 | 1,451 | 1,464 |
| Freight receipts per ton per mile.......... cts. | 1.52 | 1.50 | 1.56 | 1.52 | 1.54 |
| Receipts per ton hauled.................. \& | 6.21 | 6.49 | 6.37 | 6.26 | 6.62 |
| Average length of freight haul. . . . . . . . . . miles | 408 | 432 | 409 | 413 | 430 |
| Average train load, revenue tons........... No. | 911 | 967 | 994 | 1,024 | 1,086 |
| Average load per loaded car mile......... tons | 32.86 | 32.35 | 33.31 | 33.11 | 33.79 |
| Revenue per freight-train mile............ \$ | 13.85 | 14.51 | 15.48 | 15.54 | 16.72 |

${ }^{1}$ Includes caboose miles but excludes miles made in passenger and non-revenue trains.
${ }^{2}$ Excludes traffic handled by more than one railway; see Table 10 for details of freight carried.

The total tonnage of revenue freight carried (including national loadings and receipts from United States rail connections) was 3.4 p.c. lower in 1961 than in 1960. Among the main commodity groups, only agricultural products increased over the previous year. Of the $153,080,317$ tons carried in 1961 (excluding freight handled by more than one railway and in intermediate switching), mine products accounted for 40.1 p.c., manufactures and miscellaneous products for 30.3 p.c., agricultural products 18.3 p.c., forest products 9.5 p.c., animal products 1.1 p.c., and less-than-carload freight for 0.8 p.c.

## 10.-Commodities Hauled as Freight by Railways, 1958-61

Note.-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 Railway line across Maine, U.S.A., is included, as are the Canadian sections of United States railways.

| Commodity | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: |
|  | tons | tons | tons | tons |
| Agricultural Products. | 29,309,235 | 27,988,690 | 26,666,459 | 28,012,441 |
| Wheat. | 14,553,875 | 13,794,365 | 13,293,302 | 15,155,289 |
| Oats. | 1,490,516 | 1,372,154 | 1,186,626 | 982,668 |
| Other grain | 5,181,033 | 4,906,172 | 4,292,962 | 4,308,532 |
| Flour, wheat. | 1,629,846 | 1,689,048 | 1,639,965 | 1,480,964 |
| Other mill products. | 1,887,424 | 1,708,274 | 1,659,275 | 1,697,726 |
| Other agricultural products.. | 4,566,541 | 4,518,677 | 4,594,329 | 4,387,262 |
| Animal Products. | 1,634,878 | 1,571,388 | 1,695,451 | 1,619,212 |
| Livestock. | 605,105 | 507,389 | 430,234 | 442,932 |
| Meats and other edible packing-house products. | 506,288 | 550,999 | 781,520 | 643,429 |
| Other animal products. | 523,485 | 513,000 | 483,697 | 532,851 |
| Mine Products. | 59,895,924 | 71,178,434 | 65,541,195 | 61,388,614 |
| Coal, anthracite. | 1,615,401 | 1,555,774 | 1,378,104 | 1,148,868 |
| Coal, bituminous, subbituminous, lignite. | 12,854,100 | 11,949,461 | 11,259,474 | 10,461,389 |
| Coke. | 1,585,402 | 1,581,553 | 1,582,395 | 1,571,791 |
| Ores and concentrates | 21,287,157 | 30,840,791 | 28,386,836 | 26,287,337 |
| Sand and gravel. | 6,997,118 | 6,442,813 | 6,308,623 | 5,793,376 |
| Stone (crushed, ground, broken). | 7,017,430 | 6,694,809 | 5,952,700 | 5,237,255 |
| Other mine products. | 8,539,316 | 12,113, 233 | 10,673,063 | 10,888,628 |
| Forest Products. | 14,556,917 | 14,736,118 | 14,960,197 | 14,491,704 |
| Logs, posts, poles, piling and ties. | 1,946,490 | 2,105,792 | 2,592,553 | 2,127,041 |
| Cordwood and other firewood. | 31,007 | 27,651 | 16,077 | 11,595 |
| Pulpwood....... | 4,731,075 | 4,121,483 | 4,794,373 | 4,574,296 |
| Lumber, timber, box, crate and cooperage material. | 6,802,421 | 7,282,234 | 6,411,739 | 6,443,645 |
| Other forest products............................. | 1,045,924 | 1,198,958 | 1,145,455 | 1,335,127 |
| Manufactures and Miscellaneous. | 46,534,971 | 49,162,943 | 48,285,917 | 46,378,066 |
| Gasoline and petroleum products. | 8,402,525 | 8,325,030 | 7,851,365 | 6,887,884 |
| Iron and steel (bar, sheet, structural, pipe). | 3,672,395 | 4,234,303 | 3,986,862 | 3,637,000 |
| Automobiles, trucks and parts. | 1,518,229 | 1,809,106 | 1,998,474 | 1,673,124 |
| Newsprint. | 4,115,818 | 4,256,951 | 4,236,852 | 4,397,864 |
| Wood pulp. | 2,312,458 | 2,547,531 | 2,518,188 | 2,688,225 |
| Other manufactures and miscellaneous. | 26,513,546 | 27,990,022 | 27,694,176 | 27,093,969 |
| Less-than-Carload Lots . | 1,509,831 | 1,457,576 | 1,312,915 | 1,190,250 |
| Grand Totals. | 153,441,756 | 166,095,149 | 158,462,134 | 153,080,317 |

Railway Accidents.-Accidents shown in Table 11 include all those in which railway trains were involved and accidents on railway property. The classification of accidents used for DBS vital statistics treats collisions between motor vehicles and trains as motor vehicle accidents; provincial statistics also class them as motor vehicle accidents and consequently adjustments should be made when compiling total accidental deaths of all kinds or comparing results of accidents of different kinds, such as train and motor vehicle. Also, all passengers injured are included in the figures but, for employees, only those who were kept from work for at least three days during the 10 days following the accident are recorded.
11.-Persons Killed or Injured on Railways, by Specified Cause, 1959-61

| Class of Person and Description of Accident | 1959 |  | 1960 |  | 1961 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Killed | Injured | Killed | Injured | Killed | Injured |
|  | Accidents Resuliting from Movement of Trains, Locomotives or Cars |  |  |  |  |  |
| Class of Person- | No. | No. | No. | No. | No. | No. |
| Passengers... | 9 | 151 | 2 | 151 | 1 | 73 |
| Employees.. | 30 | 1,092 | 24 | 895 | 22 | 881 |
| Trespassers.. | 65 | 56 | 52 | 63 | 46 | 67 |
| Non-trespassers............................. | 196 | 505 | 183 | 463 | 159 | 419 |
| Postal clerks, expressmen, etc.................. | 3 | 14 | 1 | 14 | - | 11 |
| Totals. | 303 | 1,818 | 262 | 1,586 | 228 | 1,451 |
| Description of Accidents (Employees and Passengers only)- |  |  |  |  |  |  |
| Coupling and uncoupling. $\ldots$............................................... | 15 | 50 188 | 6 | -47 | 2 4 | 55 87 |
| Derailments........ | 4 | 44 | 4 | 34 | - | 19 |
| Locomotives or cars breaking down | - | 18 | - | 8 | - | 2 |
| Falling from trains or cars. | 2 | 80 | 4 | 52 | 1 | 46 |
| Getting on or off trains...................... | 11 | 247 | ${ }_{3}$ | 207 | 2 | 245 |
| Struck by trains, etc............................ | 11 | ${ }_{26}$ | $-{ }^{3}$ | ${ }_{19}^{9}$ | $-6$ | ${ }_{14}^{9}$ |
| Other causes..................... | 3 | 573 | 7 | 488 | 8 | 477 |
| Totals............................. | 39 | 1,243 | 26 | 1,046 | 23 | 954 |
|  | All Other Accidents |  |  |  |  |  |
| Class of Person- |  |  |  |  |  |  |
| Stationmen. . | - | 239 | 1 | 215 | 3 | 320 |
| Shopmen.. | 3 | 739 | 1 | 545 | 7 | 590 |
| Trackmen....... | 8 | 760 | 5 | 668 | 7 | 693 |
| Other employees............................... | $-1$ | 426 | 2 | 360 | 1 | 336 |
| Passengers. <br> Others. | $-_{1}$ | 42 <br> 52 | $-_{1}$ | 64 53 | $-_{3}$ | 55 59 |
| Totals. | 13 | 2,258 | 10 | 1,905 | 21 | 2,053 |

## Subsection 4.-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. Its history is presented in a special article published in the 1955 Year Book at pp. 840-847. More detailed information than can be given here is obtainable from DBS annual report Canadian National Railways (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 special article mentioned above. Briefly, the Capital Revision Act of 1937 wrote off all loans that had been made to cover deficits and also unpaid 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 Dec. 31, 1961, the Railway was not obliged to pay interest on

[^226]$\$ 100,000,000$ 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.
12.-Capital Structure of the Canadian National Railway System as at Dec. 31, 1953-62

| At Dec. 31- | Shareholders' Capital |  | Funded Debt Held by Public |  | Government Loans and Appro-priationsActive Assets in Public Accounts | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Government of Canada Shareholders' Account | Capital Stock Held by Public | Guaranteed by <br> Federal and Provincial Governments | Other |  |  |
|  | \$ | \$ | \$ | \$ | \$ | $\delta$ |
| 1953. | 1,552,050,067 | 4,514,490 | 513,977,391 | 75,834,299 | 342,140,048 | 2,488,516,295 |
| 1954. | 1,571,393,181 | 4,514,490 | $910,422,885$ | 62,546,711 | 126,771,981 | 2,675,649,248 |
| 1955. | 1,591,902,624 | 4,511,150 | 861,870,899 | 34,493,192 | 199,444,622 | 2,692,222,487 |
| 1956. | 1,616,270,966 | 4,508,670 | 794,482,906 | 25,086,606 | 353,664,828 | 2,794,013,976 |
| 1957. | 1,639,451,306 | 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 | 4,503,549 | 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 | 164,593,150 | 3,586,842,630 |
| 1962. | 1,767,976,925 | 4,499,261 | 1,630,895, 308 | 2,423,765 | 209,026,793 | 3,614, 822,052 |

In Table 13 the assets of the Canadian National Railway System as at Dec. 31, 1961 and 1962 are compared with those at the time of consolidation of the system.
13.-Assets of the Canadian National Railway System as at Dec. 31, 1922, 1961 and 1962

| Account | Dec. 31, 1922 | Dec. 31, 1961 | Dec. 31, 1962 | Increase or Decrease 1922 to 1962 |
| :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | \$ |
| Current Assets | 87,580,218 | 202,821,146 | 225,004,113 | 137,423,895 |
| Cash | 14,651,422 | 25,025,136 | 50,063,093 | 35, 411,671 |
| Special deposits | 6,139,435 | 48,209 | 44,294 | -6,095,141 |
| Traffic accounts receivabl | 2,528,622 | 5,256,580 | 4,215,344 | 1,686,722 |
| Agent and conductor balances | 5,386,673 | 32,292,563 | $34,568,900$ $37,636,727$ | $29,182,227$ $20,655,438$ |
| Other accounts receivable.................. | 16,981,289 ${ }^{1}$ | 29,804,560 | 37,636,727 | 20,655,438 |
| Government of Canada due on deficit account |  | 18,607,772 | 9,335,454 | 9,335,454 |
| Material and supplies..................... | 41,408,999 | 74,609,162 | 70,424,977 | 29,015,978 |
| Interest and dividends receivable Other current assets. | 377,003 106,775 | $3,226,234$ $13,950,930$ | $3,741,449$ $14,973,875$ | $3,364,446$ $14,867,100$ |
| Investments | 1,842,428,131 | 4,138,654,068 | 4,212,610,502 | 2,370,182,371 |
| Road and equipment property | 1,765,323,644 | 3,735,663,809 | 3,784,796,314 | 2,019,472,670 |
| Improvements on leased property | 1,492,123 | 1,325,971 | 1,369,336 | -122,787 |
| Acquisition adjustment-U.S. lines. |  | Cr. 3,776,424 |  |  |
| Non-rail property. | 34,767,914 | 121,164, 443 | 131,678,351 |  |
| Capital and other reserve funds..... | $6,171,808$ $24,253,323$ | 281, $269,{ }_{266}^{534}$ | 291,162,893 | -666,909,570 |
| Investments in affiliated companies. | $24,253,323$ $10,419,319$ | $281,269,266$ $3,006,469$ | $291,162,893$ $3,603,608$ | -6,815,711 |
| Deferred Assets. | 12,325,297 | 43,841,771 | 43,611,559 | 31,286,262 |
| Working fund advances | 166,847 | 792,187 | 743,812 |  |
| Insurance and other funds | 352,488 | 15,000, 000 | $\begin{aligned} & 15,000,000 \\ & { }_{27} 867,747 \end{aligned}$ | 14,647,512 |
| Other deferred assets. | 11,805,962 | 28,049,584 | $27,867,747$ | 16,061,785 |
| Unadjusted Debits. | 15,697,557 | 39,422,256 | 38,174,686 | $22,477,129$ $2,186,461$ |
| Prepayments. | 132, 3 , 59 | 2,551,208 | ${ }_{21}^{2,508,520}$ | 19,745,702 |
| Discount on funded de | $1,919,635$ $13,455,863$ | $\begin{aligned} & 24,236,133 \\ & 12,634,915 \end{aligned}$ | $21,665,337$ $14,000,829$ | 19,544,966 |
| Grand Totals. | 1,958,031,203 | 4,424,739,241 | 4,519,400,860 | 2,561,369,657 |

[^227]The financial details presented in Table 14 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 throughout, and highway transport (rail) operations from 1956. In conformity with the requirements of the Uniform Classification of Accounts, tax accruals and rents have been charged to operating expenses since Jan. 1, 1956.

## 14.-Total Revenue, Operating Expenses, Net Revenue, Fixed Charges and Deficits of the Canadian National Railway System (Canadian and United States Operations), 1953-62

Nors.-Figures for 1911-52 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 Fixed Charges | Net Income or Deficit ${ }^{1}$ | Cash Deficit or Surplus ${ }^{2}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | \$ | \$ | \$ |
| 1953. | 696,622,451 | 659,049,086 | 29,238,623 | 29,376,160 | Dr. 137,537 | Cr. 244,017 ${ }^{3}$ |
| 1954. | 640,637,280 | 626,465, 374 | 7,574,821 | 32,527, 264 | " 24,952,443 | Dr. 28,758,098 |
| 1955. | 683,088,794 | 629,013,125 | 43,478, 955 | 33,004,300 | Cr. 10,474,655 | Cr. 10,717,689 ${ }^{3}$ |
| 1956. | 774,800,647 | 728,008,837 | 57,623,710 | 31,782,991 | " $25,840,719$ | " $26,076,951^{3}$ |
| 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 | " 51,301, 131 | " 51,591,424 |
| 1959. | 740,165, 041 | 741,852,260 | $8,416,237 \mathrm{r}$ | 52, 918, $886{ }^{\text {r }}$ | " 44,502,649r | " $43,588,290$ |
| 1960. | 693,141,106 | 705, 818, 310 | 1,504,828 ${ }^{\text {r }}$ | 69,469, 961 r | " 67,965,133r | " 67,496,777 |
| 1961. | 710,305,173 | 722,147,583 | 5,539, $970^{\text {r }}$ | 73,404, 523 r | " 67,864,553r | " 67,307,772 |
| 1962. | 738,324,754 | 738, 882,680 | 23,308,683 | 74,443, 482 | " 51,134,799 | " 48,919,454 |

${ }^{1}$ 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. preferred stock.
Milage and Traffic.-At Dec. 31, 1962, first main track milage 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 24,409 miles.

## 15.-Train Traffic Statistics of the Canadian National Railways (Canadian and United States Lines), 1959-62

Nore.-Includes electric lines.

| Milage | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: |
| Traln Milage . . . . . . . . . . . . . . . . . . . miles |  |  |  |  |
| Passenger service....................... | 22,394,255 | 21,292,408 | 19,576,875 | 18,096,980 |
| Freight service........................ | 37,754,181 | 34, 379 , 411 | 34,041,907 | 34, 283,043 |
| Work service........................ " | 2,407,865 | 1,854,116 | 1,561,665 | 1,634,258 |
| Passenger-Train Car Milage . . . . . . . . . miles Coaches and combination (exci. work | 217,727,131 | 211,939,049 | 199,177,610 | 188,256,798 |
|  | $\begin{array}{r}51,682,574 \\ 4 \\ 4 \\ 153 \\ \hline 12\end{array}$ | 49,618,353 | 45,084, 676 | $42,510,131$ |
| Parlour, sleeping and dining cars....... | 59, $\mathbf{5 9 5}, 26517$ | $3,913,225$ $57,198,952$ | $3,782,495$ $51,081,594$ | 3, 806,184 |
| Baggage, mail, express, etc............ | 102,665,711 | 101,208,519 | 99, 228,845 | ${ }_{93}^{49} 390,413$ |

15.-Train Traffic Statistics of the Canadian National Railways (Canadian and United States Lines), 1959-62-concluded

| Milage and Traffic | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: |
| Freight-Train Car Milage............. miles | 1,851,192,256 | 1,774,972,100 | 1,795,163,443 | 1,827,405,682 |
| Loaded freight......................... " | 1,171,769,671 | 1,099,465,199 | 1,095,441,528 | 1,111,533,850 |
| Empty freight.......................... | 641,624,285 | $640,812,172$ | 665,300,974 | 680,796,324 |
| Caboose............................. | 37,798,300 | 34,694,729 | 34,420,941 | 35,075,508 |
| Work-Train Car Milage............... miles | 5,042,176 | 4,391,784 | 3,302,287 | 2,804,515 |
| Passenger Traffic- |  |  |  |  |
| Passengers carried (earning revenue) No. | 12,693,777 | 13,307,901 | 12,104,791 | 12,342,782 |
| Passengers carried (earning revenue) one mile | 1,272,152,625 | 1,208,382,297 | 1,075,770,694 | 1,129,315,233 |
| Passenger-miles per mile of road...... " | 51,115 | 48,443 | 43,283 | 45,623 |
| Average passenger journey............miles | 100.2 | 100.0 | 88.97 | 91.5 |
| Average amount received per passenger \$ | 3.17 | 3.19 | 2.87 | 2.78 |
| Average amount received per passen-ger-mile. | 0.03159 | 0.03171 | 0.03234 | 0.03040 |
| Freight Traffic- |  |  |  |  |
| Revenue freight carried............. tons | $82,202,096$ $35,542,136,785$ | 34, 77,688,926 | 34, $723,222,886$ | 35, $795,3884,3479$ |
| Revenue freight carried one mile..... | 35,542, 136,785 | 34,011,491,932 | 34,723,214,717 | 35,595,425,349 |
| Revenue freight carried one mile per mile of road. | 1,423,304 | 1,358,680 | 1,397,069 | 1,438,003 |
| Total (all classes) freight carried one mile per mile of road. | 1,473,014 | 1,400,758 | 1,419,496 | 1,458,828 |
| Average hauls, revenue freight..........miles | 433.2 |  | ${ }^{456.7}{ }_{50,172}$ | $454.1$ |
| Gross ton miles per freight train hour. No. Freight revenue per ton | $6.99{ }^{42,937}$ | ${ }_{6.77}^{46,628}$ | 50,172 6.76 | ${ }_{6.75}{ }^{5,085}$ |
| Freight revenue per ton-mile........... \$ | 0.01613 | 0.01547 | 0.01480 | 0.01487 |

## Section 2.-Express Companies

Express, which is actually expedited freight carried on passenger trains, is a service provided by rail carriers either through a separate express company or as a department of the railway organization. Many express and package freight shipments are handled on a contract basis-contracts which provide for payment to the railways of a fixed percentage of the gross express revenue.

Express companies are organized under authority of federal legislation and their business concerns the rapid transit of valuable or perishable commodities and animals, the delivery of parcels and the issuing of financial papers, money orders, travellers cheques and letters of credit. Express rates are usually much higher than freight rates and the two services are not normally competitive. Both tariffs are subject to the approval of the Board of Transport Commissioners.

Five express organizations operate in Canada-four Canadian and one American. The Canadian Pacific Express Company is a subsidiary of the Canadian Pacific Railway Company and handles the express business on the railways and the inland and ocean steamship lines of the parent company. The express business of the Algoma Central and Hudson Bay Railway, the Canadian National Railway System, and the Northern Alberta Railways is handled by departments of the respective railways. The Railway Express Agency Incorporated, of the United States, operates mainly over the Canadian sections of United States railways and over the route from Skagway in Alaska to points in Yukon Territory. Operations of the Algoma Central and Hudson Bay Railway express department were reported for the first time in 1957. No statistics are available on the volume of express traffic because much of it consists of parcels and small lots that cannot be classified.

## 16.-Summary Statistics of Express Companies, 1953-62

Norz.-Figures for 1911-52 are given in the corresponding table of previous Year Books beginning with the 1927-28 edition.

| Year or Company | Milages Operated in Canada ${ }^{1}$ | Gross Earnings | Operating Expenses ${ }^{2}$ | Express Privileges ${ }^{3}$ | Net <br> Operating Revenue |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | \$ | \$ | \$ | \$ |
| 1953. | 55,805 | 74,296,948 | 49,569,842 | 23,584,806 | 1,142,300 |
| 1954. | 68,373 | 70,039,054 | 48,167,243 | 20,753,503 | 1,118,308 |
| 1955. | 65,916 | 73,434,962 | 48,726, 272 | 23,533,770 | 1,174,920 |
| 1955. | 67,984 | 88,012,718 | 60,180,066 | 27,114,672 | 717,980 |
| 1957. | 65,516 | 85,630, 963 | 61,385,390 | 23,870,836 | 374,737 |
| 1958. | 65,982 | 86,558,161 | 62,120,291 | 23,797,450 | 640,420 |
| 1959. | 67,523 | 88,834,704 | 63,194,957 | 25,061,221 | 578, 526 |
| 1960. | 62,154 | 84,986,847 | 61,123,030 | 23,242,445 | 621,372 |
| 1961. | 65,523 | 81,098,805 | 62,674,794 | 17,875,713 | 548,298 |
| 1962. | 70,985 | 83,877,337 | 64,086,906 | 19,041,953 | 748,478 |
| 1962 |  |  |  |  |  |
| Algoma Central and Hudson Bay Rly.. |  |  |  |  | Dr. 2,881 |
| Canadian National Express........... | 51,049 | 46,899, 233 | 36,154,552 | 10,184,626 | 560,055 |
| Canadian Pacific Express..... | 17,312 | 31,268,570 | 23,680, 952 | 7,440,918 | 146,700 |
| Northern Alberta Railways. . . . . . . . . | . 928 | 5353,694 | 189,159 | 164,535 |  |
| Railway Express Agency, Inc. (U.S.A.) | 1,373 | 5,284,128 | 4,010,450 | 1,229,074 | 44,604 |

${ }^{1}$ Over railways, boat lines, motor carrier and aircraft routes. ance with the Uniform Classification of Accounts adopted Jan. 1, 1956.
${ }^{2}$ Includes tax accruals from 1956 in accord-
${ }^{3}$ Amounts paid by express companies matter.
17.-Business Transacted by Express Companies in Financial Paper, 1958-62

| Item | 1958 | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | \$ | \$ |
| Money orders, domestic and foreign.... | 133,303,403 | 126,470,170 | 118,271,143 | 111,935,109 | 108,785, 993 |
| foreign........................... | 9,096,103 | 9,288,616 | 9,707,598 | 10,207,331 | 10,256,125 |
| C.O.D. cheques........................ | 20,117,337 | 19,134,412 | 17,971,578 | 18,368,010 | 18,373,532 |
| Telegraphic transfers................. | 129,420 | 142,728 | 79,631 | 9,396 | 18,684 |
| Totals. | 162,646,263 | 155,035,926 | 146,029,950 | 140,519,846 | 137,434,334 |

18.-Employees, Salaries and Wages and Commissions of Express Companies, 1953-62

| Year | Employees ${ }^{1}$ | Salaries and Wages ${ }^{1}$ | $\underset{\text { missions }}{\text { Com- }}$ Paid | Year | Employees ${ }^{1}$ | Salaries and Wages ${ }^{1}$ | Commissions Paid |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | \$ | \$ |  | No. | \$ | \$ |
| 1953. | 12,119 | 37,413,060 | 2,795,766 |  | 11,507 |  |  |
| 1954. | 11, 450 | 35, 882,288 | 2,691,440 | 1959..... | 11,411 | 42,673,976 | 2,985,627 |
| 1955. | 11,593 | 36,200,739 | 2,745, 259 | 1960. | 10,733 | 40,206, 239 | 2,736,817 |
| ${ }_{1957} 1956$ | 12,448 | 40,981,769 | 3,044,285 | 1961. | 10,454 | 42,408,663 | 2,733,174 |
| 1957.. | 12,133 | 42,172,398 | 2,930,514 | 1962. | 9,431 | 40,046,861 | 2,558,148 |

[^228]
## PART III.-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


#### Abstract

Note.-It is obviously impossible to include here the great mass of detailed regulations in force in each province and territory; only the more important general information is given. The source of information for detailed regulations for each province and territory is given at p. 770.


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 vehicle 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 and renewable annually, except in Alberta and British Columbia where it is renewable every five years, and in New Brunswick and Manitoba where it is renewable every two years. 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.-In general, 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), with the exception that Alberta does not require the licensing of trailers used for personal purposes. 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, exception from registration is granted for a specified period (usually at least 90 days, except in Quebec where the maximum is 90 days and in British Columbia and Ontario where it is six months) 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 muffler, 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, etc., placed at strategic points on highways and roads. The speed limit in Prince Edward Island, Quebec and New Brunswick 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 highways in Alberta where maximum speeds are 65 in daytime and 55 at night. 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. 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

[^229]of $\$ 100$ or more must be reported 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 impose penalties for infractions of driving regulations, ranging from fines for minor infractions to suspension of the operator's driving permit, impounding of the car, or imprisonment for more serious infractions. In most provinces penalties have been linked to a driver-improvement program, the aim 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. The suspension remains effective until any penalty or judgment has been satisfied and proof of financial responsibility for the future is filed. In Quebec, Manitoba, Saskatchewan, Alberta, British Columbia 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 and $\$ 250$ in British Columbia).

Although safety responsibility legislation has not been enacted in the Northwest Territories, the Motor Vehicle Ordinance requires the owner of a motor vehicle to 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 Saskatchewan and in the 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, 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 law. 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 collects $\$ 20$ from each uninsured owner of a motor vehicle at the time of registration or transfer. 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 identified, action may be taken against the Registrar of Motor Vehicles (the Minister of Finance in Newfoundland); 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 Alberta and British Columbia, the limit is based on the single amount of $\$ 25,000$ and $\$ 35,000$, respectively, 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 $\$ 20,000$ and $\$ 30,000$, respectively, have been satisfied; the $\$ 30,000$ limit exists in British Columbia for hit-and-run accidents but does not apply to payments for property damage. In Ontario, the limits are $\$ 35,000$ for death or personal injury to two or more persons and $\$ 5,000$ for damage to property, subject to a limit of $\$ 35,000$ in any one accident. In Manitoba, effective July 1, 1963, the limit based on one accident is $\$ 35,000$ for claims for injury or
property damage with the stipulation that not more than $\$ 5,000$ may be allocated to property damage until injury claims up to $\$ 30,000$ have been satisfied; the increased amount will apply in hit-and-run accidents occurring after July 1, 1963 but will be limited to personal injury only. 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.

## Prince Edward Island

Administration.-The Provincial Secretary, Charlottetown.
Legislation.-The Highway Traffic Act (RSPEI 1951, c. 73).

## 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 Division, Provincial Tax Branch, Department of Provincial Secretary-Treasurer, Fredericton.
Legislation.-The Motor Vehicle Act (RSNB 1955, as amended).

## Quebec

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), the Public Vehicles Act (RSO 1960, c. 337), the Public Commercial Vehicles Act (RSO 1960, c. 319) and the Motor Vehicle Accident Claims Act (1961-62, c. 84).

## Manitoba

Administration.-Minister of Public Utilities, Winnipeg.
Legislation.-The Highway Traffic Act (RSM 1954, c. 112, as amended).

## Saskatchewan

Administration.-Treasury Department, Highway Traffic Board, Revenue Building, Regina. Legislation.-The Vehicles Act, 1957.

## Alberta

Administration and Legislation.-The Vehicles and Highway Traffic Act (RSA 1955, c. 356) and the Motor Vehicles Accident Indemnity Act (RSA 1955, c. 209) 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 Vehicles and the Commercial Transport Act by the Minister of Commercial Transport, Victoria, B.C.

## Yukon Territory

Administration.-Commissioner of the Yukon Territory, Whitehorse, I.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, c. 77, as amended).

## Northwest Territories

Administration.-Commissioner of the Northwest Territories. Address communications to the Director, Northern Administration Branch, Department of Northern Affairs and National Resources, Ottawa.
Legislation.-The Revised Ordinances of the Northwest Territories (SC 1956, c. 3, 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 1961, the milage of highways and rural roads in Canada was 430,004, an increase of 8,556 miles over the 421,448 reported in 1960 . The 430,004 miles include all roads under provincial jurisdiction, federal roads, and local roads under municipal jurisdiction other than the milages 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. 174.

## 1.-Highway and Rural Road Milage classified by Type and by Province, 1961 with Totals for 1957-61

Note.-Excludes urban streets but includes milages under jurisdiction of rural and small urban municipalities; excludes milages of all roads on Indian reservations except those of flexible pavement.

| Classification | Nfld. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | $\begin{gathered} \text { Yukon } \\ \text { and } \\ \text { N.W.T. } \end{gathered}$ | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | miles | miles | miles | miles | miles | miles | miles | miles | miles | miles | miles | miles |
| Surfaced.... | 4,125 | 2,464 | 10,483 | 13,670 | 13,016 | 72,341 | 22,480 | 41,164 | 32,516 | 18,964 | 2,004 | 233,236 |
| Rigid pavement | - |  |  |  | 469 | 1,461 | 227 | - | 17 | 49 | - | 2,251 |
| pavement. | 405 | 851 | 3,347 | 3,595 | 12,650 | 18,470 | 2,606 | 2.768 | 4,044 | 5,505 | 8 | 54,279 |
| (iravel. | 3,720 | 1,570 | 7,124 | 10,071 | 29,897 | 52, 410 | 19,647 | 38,396 | 48,455 | 13, 110 | 1,996 | 226,696 |
| Earth | 3,012 | 814 | 4,865 | - | 10,556 | 3,720 | 14,390 | 32,744 | 18,097 | 8,333 | 247 | 146,778 |
| Totals, 1961 | 7,137 | 3,278 | 15,347 | 13,670 | 33.572 | 76,061 | 36,870 | 123,908 | 70,613 | 27,297 | 2,251 | 430,004 |
| 1960 | 6,988 | 3,238 | 15,648 | 13,424 | 33,804 | 74,586 | 35,613 | 120,060 | 69,060 | 26,729 | 2,298 | 121,448 |
| 19.59 | 6,873 | 3,250 | 15,374 | 13,198 | i?, 3 s S | 22,821 | 39,410 | 118,934 | 67,647 | 30,325 | 2,115 | 43,035 |
| 1958 | 6,609 | 3,199 | :5,338 | 13,168 | 30,518 | 「2,016 ${ }^{1}$ | ?1,038 | 120,99S ${ }^{\text {a }}$ | 84,0771 | 23,425 ${ }^{3}$ | 1,995 ${ }^{3}$ | 397,381 ${ }^{1}$ |
| 1957. | 6,319 | 3,198 | 15,327 | 13,128 | 50,196 | 76,2\% | 21,008 | 124,494 | 88,842 | 22,892 | 2,313 | 123,939 |

[^230]
## 2.-Construction, Maintenance and General Expenditure on Highways, Rural Roads, Bridges and Ferries, by Province, Years Ended Mar. 31, 1961 and 1962

Note.-Figures for earlier years are given in the corresponding table of previous Year Books.

| Item and Province or Territory | 1961 | 1962 | Item and Province or Territory | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 8'000 | \$'000 |  | 8'000 | 8'000 |
| Construction | 558,955 | 505,303 | Administration and Generalı.... | 32,005 | 32,733 |
| Newfoundland | 15,220 | 85,633 | Newfoundland. | ${ }^{572}$ | ${ }^{480}$ |
| Prince Edward Island | $\begin{array}{r}4,905 \\ 22,308 \\ \hline\end{array}$ | 5,633 18,010 | Prince Edward Island........... Nova Scotia. | 172 1,936 | 79 905 |
| New Bronswick | ${ }_{24,003}^{22,08}$ | 180,037 | Now Brunswick. | ${ }_{1}^{1,267}$ | 1, 322 |
| Quebec. | 90,256 | 80,869 | Quebec. | ${ }_{4}^{1,771}$ | 7,008 |
| Ontario | 180,983 | 167,907 | Ontario. | ${ }^{13,833}$ | 12,646 |
| Manitoba | -32,182 <br> 35 <br> 5098 | 24, ${ }_{3}^{24,788}$ | Saskatchewan | - | ${ }_{1}^{2,353}$ |
| Saskatchew | 退 | - | Alberta...... | 1,893 | ${ }_{1}^{1,016}$ |
| British Columbia | 93,066 | 89,788 | British Columbia | 3,805 | 3,831 |
| Yukon and N.W.' | 8,245 | 7,793 | Yukon and N.W.T | 503 | 392 |
| Maintenance. | 203,913 | 215,480 | Totals | 794,873 | 753,516 |
| $\xrightarrow{\text { Newfoundland }}$ Prince Edward Island | 8,051 1,994 | 8,422 2,316 |  |  |  |
| Nova Scotia....... | 12,055 | 12,217 | Distribution of All Expenditure- |  |  |
| New Brunswick | ${ }^{13,349}$ | 14,425 |  |  |  |
| Quebec. | 54, <br> 47,028 | 61,583 57,367 | Fede |  |  |
| Manitoba. | 7,245 | 7,633 | Provincial | 609,100 | 596,414 |
| Saskatchewa | 12,378 <br> 27,163 <br> 1 | - | Municipal | 69,764 | 62,433 |
| British Columbia.. Yukon and N.W.T. | 17,583 2,716 | 18,840 1,914 | Ot | 5,302 | 3,374 |

[^231]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, except Quebec. 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 May 1964. In 1960, Quebec became a participant.

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 milages 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 totalled 140 miles.

Up to Mar. 31, 1963, contractual commitments for new construction on the Highway amounted to $\$ 727,720,108$, of which the federal share approximated $\$ 400,000,000$. Federal payments to the provinces for prior, interim and new construction totalled $\$ 374,500,938$. On-site labour expended on the Highway up to Mar. 31, 1963 was 12,004,244 eight-hour man-days of employment; off-site employment required for the provision of necessary
material and services was estimated at $20,407,215$ man-days. Paving to specified standards had been completed over a distance of 3,325 miles and 658 bridges, overpasses and other structures of more than 20 -foot span had been or were being constructed.

Roads to Resources and Roads in the North.-The Roads to Resources Program is a national undertaking started in 1958 to provide access to areas potentially rich in natural resources. Agreements have been signed with all ten provinces that will eventually result in the construction or reconstruction of more than 4,700 miles of road. Progress of the program to May 1, 1963 was as follows:-

| Province | Estimated <br> Total Cost | Value of Approved Contracts | Provincial Expenditure ${ }^{1}$ | Federal Contribution | Total Milage | Milage Completed |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | \$ | No. | No. |
| Newfoundland. | 16,058,800 | 11,257,707 | 5,864,900 | 2,932,450 | 319 | 219 |
| Prince Edward Island | 15,000,000 | 13,784,723 | 8,901,870 | 4,450,935 | 447 | 277 |
| Nova Scotia. | 16,880,437 | 13,600,746 | 12,105,502 | 6,052,751 | 489 | 318 |
| New Brunswick. | 20,562,000 | 11,676,066 | 9,119,982 | 4,499,999 | 426 | 91 |
| Quebec.. | 13,435,000 ${ }^{2}$ | 5,596,287 | 6,254,465 | 3,028,134 | 248 | 123 |
| Ontario.. | 21,668,765 | 11,458,876 | 10,481,026 | 4,663,764 | 562 | 213 |
| Manitoba. | 19,370,000 | 11,196,553 | 9,932,368 | 4,966,184 | 693 | 248 |
| Saskatchewan. | 22,950,000 | 11,649,089 | 10,078,751 | 5,039,377 | 811 | 348 |
| Alberta... | 20,380,000 | 13,360,750 | 11,687,138 | 5,843,569 | 416 | 158 |
| British Columbia. | 20,500,000 | 14,145,000 | 10,097, 550 | 5,048,775 | 321 | 111 |
| Totals. | 186,805,002 | 117,725,797 | 94,523,552 | 46,525,938 | 4,732 | 2,106 |

${ }^{1}$ Includes only expenditures reported by the provinces to the Federal Government. ${ }^{2}$ Additional projects to be included later will bring the total to $\$ 15,000,000$.

In several provinces the total estimated cost exceeds the $\$ 15,000,000$ shareable under the agreement but the total federal contribution to each province will remain at $\$ 7,500,000$. Private companies share in the cost of some roads that will be of direct benefit to them.

A road and causeway to link New World Island to the provincial road system in Newfoundland is the most easterly road in the program and is intended to assist the fishing industry in that portion of the province. The most westerly road is one of 321 miles extending from Stewart northeasterly to Cassiar, which will open up a new mining area in British Columbia. The most northerly project is the reconstruction of the 300 mile section of the Mackenzie Highway in Alberta, which will connect with the Northwest Territories road system being built by the Federal Government. The most southerly project is the improvement of an existing 5.4-mile road between Yarmouth Light and the town limits of Yarmouth in Nova Scotia, which is intended to increase the tourist potential in that section. The roads in the program vary in length from the less-than-one-mile French River Spur in Prince Edward Island to the 505-mile Uranium City road in northern Saskatchewan. In any province the construction program may consist of as many projects as can qualify for inclusion and for which funds are available; the current program consists of about 100 projects. In contrast to one project program in British Columbia, there are 30 in Prince Edward Island.

The Development Road Program in the Yukon Territory and the Mackenzie District of the Northwest Territories is distinct from the Roads to Resources Program in that the Federal Government is responsible for construction; maintenance costs are shared by the Federal Government and the Territorial Government concerned on an 85-15-p.c. basis.

Approximately 900 miles of road will be built in the Yukon Territory at an estimated cost of $\$ 36,000,000$ and 1,300 miles of road in the Northwest Territories at an estimated cost of $\$ 64,000,000$. At the end of 1962 , more than 500 miles of road had been completed in the Yukon Territory and 427 miles were in use in the Northwest Territories. The largest single project carried out in the Northwest Territories was the reconstruction of the Mackenzie Highway. The first 20 miles of an extension leading from Yellowknife to MacKay Lake was completed in 1962.

Revisions in the territorial roads policy came into effect in April 1962, permitting greater federal financial assistance to mining companies for exploration and development work, including road construction. Where two or more companies are developing a mineralized region, a mine development road may be built and paid for by the Federal Government. Assistance may also be given in the building of more elementary roads to give access to a mine or to enable the supplies for development to be transported to a property. Two thirds of the cost of a mine-access road may be paid by the Federal Government, and one half the cost of a basic tote-trail may be contributed by the Territorial Government concerned. Tote-trail assistance will be financed from a $\$ 50,000$ fund provided to each territorial government by the Federal Government.

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, 1957-61

| Item | 1957 | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 147,470 | 164,310 | 191,950 | 272,388 | 235,533 |
| New construction............................... \$'000 | 68,428 | 72,085 | 93,884 | 166,324 | 123,350 |
| Reconstruction, repair, cleaning, sanding, snow removal, administration, etc.................. \$'000 | 79,042 | 92,225 | 98,066 | 106,064 | 112,183 |
| Total Urban Milage . . . . . . . . . . . . . . . . . . . . . . . . No. | 24,841 | 25,652 | 37,614 | 37,769 | 37,102 |
| Rigid pavement. | 5,239 | 5,659 | 6,072 | 6,448 | 6,281 |
| Flexible pavement. | 8,121 | 8,504 | 13,173 | 13,395 | 15,214 |
| Gravel and other surfaces | 9,581 | 9,741 | 15,165 | 15,012 | 13,735 |
| Earth... | 1,900 | 1,748 | 3,204 | 2,914 | 1,872 |

${ }^{1}$ Includes expenditures on sidewalks, footpaths, bridges and ferries.

## Section 3.-Motor Vehicles

Motor Vehicle Registrations.-Registrations continue to increase year by year, a record of $5,774,810$ being reached in 1962. Of that total, $4,531,384$ were passenger carsone for every 4.1 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, 1953-62

Note.-Registrations given here include passenger cars, trucks, buses, motorcycles, service cars, etc., but not trailers or dealer licences. Figures for 1904-52 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. |
| 1953 | 29,576 | 20,286 | 129,564 | 93, 914 | 617,855 | 1,406,119 | 203,652 | 257,504 | 318,812 | 348,830 | 3,430,672 |
| 1954 | 34,423 | 20,848 | 133,087 | 99,058 | 674,114 | 1,489,980 | 210,471 | 267,373 | 338,541 | 371,711 | 3,644,583 |
| 1955 | 39,766 | 22,145 | 149,841 | 106,648 | 743,682 | 1,617,853 | 222,474 | 274,950 | 356,839 |  |  |
| 1956 | 45,997 | 23,373 | 157,544 | 111,315 | 844,827 | 1,710,240 | 240,008 | 291,265 | 381,153 | 454,217 | $4,265,437$ $4,497,091$ |
| 1957 | 47,982 | 23,725 | 164,286 | 116,712 | 901,065 | 1,793,499 | 246,188 | 300, 326 | 405,229 | 491,884 | 4,497,091 |
| 1958. | 51,575 | 25,504 | 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 | 129,629 | 1,040, 366 | 1,973,737 | 269,974 | 326, 690 | 456, 458 | 545,491 | 5,017,686 |
| 1960 | 61,952 | 30,147 | 187,065 | 138,469 | 1,096,053 | 2,062,484 | 285,689 | 335,148 | 486,370 | 564, 351 | 5,256,341 |
| 1961 | 65,270 | 32,166 | 206,601 | 145,951 | 1,183,978 | 2,126,270 | 299,998 | 349,817 | 509,298 | 588,280 |  |
| 1962. | 74,119 | 33, 888 | 206, 370 | 151,360 | 1,281,180 | 2,177,148 | 312,272 | 372,219 | 535,459 | 620,426 | 5,774,810 |

[^232]
## 5.-Types of Motor Vehicles Registered, by Province, 1961 and 1962

| Year and Province or Territory | Passenger Cars | Commercial Cars, Trucks, etc. ${ }^{2}$ | Buses | Motorcycles | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. |
| 1961 |  |  |  |  |  |
| Newfoundland. | 48,200 | 16,600 | 190 | 280 | 65,270 |
| Prince Edward Island............ | 20,440 | 11,605 | 10 | 111 | 32,166 |
| Nova Scotia. | 156,663 | 48,063 | 1,074 | 891 | 206,691 |
| New Brunswick | 112,764 | 31,734 | 617 | 836 | 145,951 |
| Quebec....... | 909,322 | 254,334 | 7,388 | 12,934 | 1,183,978 |
| Ontario. . | 1,794,444 | 316,669 | 6,213 | 8,944 | 2,126,270 |
| Manitoba. | 226,376 | 72,103 | 185 | 1,334 | 299,998 |
| Saskatchewan. | 228,269 | 120,558 | 230 | 760 | 349,817 |
| Alberta. | 356,721 | 144,976 | 3,596 | 4,005 | 509,298 |
| British Columbia. | 467,370 | 116,671 |  | 4,239 | 588,280 |
| Yukon and Northwest Territories. | 5,113 | 4,117 | 46 | 28 | 9,304 |
| Canada, 1961. | 4,325,682 | 1,137,430 | 19,549 | 34,362 | 5,517,023 |
| 1962 |  |  |  |  |  |
| Newfoundland. | 54,373 | 19,174 | 270 | 302 | 74,119 |
| Prince Edward Island. | 22,092 | 11,651 | 8 | 137 | 33,888 |
| Nova Scotia. | 153,595 | 50,810 | 1,152 | 813 | 206,370 |
| New Brunswick. | 118,483 | 31,399 | 666 | 812 | 151,360 |
| Quebec. | 986,457 | 274,334 | 8,161 | 12,228 | 1,281,180 |
| Ontario. | 1,840,119 | 322,888 | 6,818 | 7,323 | 2,177,148 |
| Manitoba. | 236,737 | 73,978 | 189 | 1,368 | 312,272 |
| Saskatchewan. | 242,271 | 128,894 | 234 | 820 | 372,219 |
| Alberta | 376,095 | 150,727 | 3,758 | 4,879 | 535,459 |
| British Columbia. | 495,308 | 120,729 | 3 | 4,389 | 620,426 |
| Yukon and Northwest Territories. | 5,854 | 4,440 | 45 | 30 | 10,369 |
| Canada, 1962. | 4,531,384 | 1,189,024 | 21,301 | 33,101 | 5,774,810 |

${ }^{1}$ Includes taxis.
${ }^{2}$ Includes service cars, road tractors, etc.
${ }^{3}$ Included with trucks.
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 XIX on Domestic Trade and Prices.
6.-Apparent Supply of New Automobiles, 1952-61

| Year | Cars Made for <br> Sale in Canada |  | Car Imports |  | Re-exports of Imported Cars |  | Apparent Supply |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { Pas- } \\ & \text { senger } \end{aligned}$ | Commercial ${ }^{1}$ | $\begin{aligned} & \text { Pas- } \\ & \text { senger } \end{aligned}$ | Commercial | Passenger | Commercial | Pas- senger | Commercial |
|  | No. | No. | No. | No. | No. | No. | No. | No. |
| 1952. | 245,443 | 112,485 | 35,665 | 4,328 | 999 | 11 | 280,109 | 116,802 |
| 1953. | 319,937 | 100,772 | 53,179 | 5,296 | 44 | 3 | 373,072 | 106,065 |
| 1954. | 267, 452 | 59,666 | 38,509 | 4,973 | 84 | 25 | 305,877 | 64,614 |
| 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 |  | 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 | $439,22 \pm$ | 75,055 |
| 1960. | 307,499 | 66,293 | 170,653 | 9,376 | 179 | 56 | 477,973 | 75,613 |
| 1961. | 312,599 | 60,270 | 106,865 | 9,487 | 700 | 35 | 418,764 | 69,722 |

[^233]Provincial Government Revenue from Motor Vehicles.-The taxation of motive fuels, motor vehicles, garages, drivers, chauffeurs, etc., is an important source of provincial government income. 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 1961 the average cost per motor vehicle for operating taxes and licences was about $\$ 113$.

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 import duties, 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, 1961 and 1962

| Year and Province or Territory | Passenger Automobile Licences | Truck, Bus, Trailer and Other Vehicle Licences | Motorcycle Licences | Chauffeur, Driver and Dealer Licences | Public Service Vehicle Tax | Motive Fuel Taxes | Total ${ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | \$ | \$ | \$ | \$ |
| 1961 ${ }^{\text {r }}$ |  |  |  |  |  |  |  |
| Newfoundland | 787,054 | 928,786 | 2,107 | 220,871 | 582 | 5,857,5382 | 8,036,124 |
| Prince Edward Island.. | 330,788 | 375,793 | 478 | 73,184 | 2,927 | 2,421,992 | 3,215,191 |
| Nova Scotia........... | 2,693,148 | 2,388,834 |  | 403,218 | 141,638 | 15,984,295 | 21,978,105 |
| New Brunswick | 2,140,808 | 2,040,710 | 4,414 | 360,901 |  | 12,685,992 | 17,480,898 |
| Quebec. | 19,602,459 | 16,295,984 | 52,612 | 3,304,166 | 1,200,335 | 100,230,894 | 141,872,093 |
| Ontario | 28,891,414 | 30,614,958 | 94,990 | 3,043,869 | 3,392,092 | 164,454,632 | 233,360,354 |
| Manitoba | 3,502,285 | 3,102,563 | 6,129 | 121,956 | 60,878 | 16,107,024 | 23,434,947 |
| Saskatchewa | 3,236,301 | 3,435,876 |  | 438,947 |  | 21,687,019 | 29,630,077 |
| Alberta | 4,950,929 | 7,092,207 | 5 | 237,006 | 171,988 | 26,370,035 | 39,887,262 |
| British Columbia | 8,978,681 | 7,728,477 | 18,316 | 1,118,683 | 291,732 | 30,149, 973 | 49,033,262 |
| Yukon and N.W.T | 55,277 | 79,960 | 59 | 26,340 | 26,503 | 290,091 | 496,628 |
| Canada, 1961 | 75,169,144 | 74,084,148 | 179,105 ${ }^{6}$ | 9,349,141 | 5,288,675 ${ }^{6}$ | 396,239,485 | 568,424,941 |
| 1962 |  |  |  |  |  |  |  |
| Newfoundland. | 836,344 | 985,211 | 2,156 | 226,961 | 534 | 6,613,227 | 8,908,756 |
| Prince Edward Island.. | 348,712 | 364,664 | 399 | 79,327 | 2,842 | 2,684,280 | 3,491,816 |
| Nova Scotia. | 2,872,704 | 2,456,783 |  | 410,366 | 95,157 | 18,939,502 | 25,148,466 |
| New Brunswick | 2,263,686 | 2,142,904 | 4,359 | 347,955 |  | 15,140,569 | 20, 169,363 |
| Quebec. | 21,169,505 | 17,878,660 | 51,736 | 3,544,585 | 1,415,075 | 106,837,884 | 152,440, 117 |
| Ontario. | 29,373,640 | 32,096,639 | 73,947 | 3,103,838 | 3,640,175 | 172,737,672 | 244,267,841 |
| Manitoba | 3,688,947 | 3,255,738 | 5,656 | -880, 853 | -54,847 | 21,514,604 | 29,944,905 |
| Saskatchewan | 3,316,380 | 3,633,450 |  | 450,324 |  | 25,446,189 | 33, 828,540 |
| Alberta. | 5,182,063 | 7,389,950 |  | 766,892 | 198,977 | 32,951,433 | 47,522,329 |
| British Columbia | 9, 326,744 | $7,970,487$ 79,495 | 18,965 61 | $1,234,305$ 23,909 | 260,117 33,731 | $38,496,022$ 272,231 | $58,080,048$ 488,918 |
| Canada, 1962 | 78,437,454 | 78,253,981 | 157,279 ${ }^{6}$ | 11,069,315 | 5,701,455 | 441,633,613 | 624,291,099 |

[^234]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 been 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 be approximately equivalent to the actual amount of motive fuel purchased in Canada for use on public streets and highways. However, net sales include an indeterminate amount of motive fuel which is taxable but not used on public streets and highways, such as, in some provinces, aviation gasoline and turbo fuel used by aircraft and motive fuels consumed by power boats, but the total effect of this is considered to be relatively insignificant.

As shown in Table 8, consumption of taxable gasoline, which is used almost entirely for automotive purposes, rose 4.1 p.c. in 1961 and net sales of diesel oil increased by 10.9 p.c.
8.-Sales of Motive Fuels, by Province, 1957-61

| Province or Territory | 1957 | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Gasoline and Liquefied Petroleum Gabes |  |  |  |  |
|  | gal. | gal. | gal. | gal. | gal. |
| Newfoundland. | 25,526,674 | 28,026,795 | 30,443,029 | 35,550,628 | 38,929,496 |
| Prince Edward Island. . | 14,293,703 | 16,152,969 | 17,854,271 | 17,872,406 | 18,098,741 |
| Nova Scotia. | 94,852,532 | 99,662,302 | 104,250,854 | 108,488,604 | 111,462,514 |
| New Brunswick. | 83,717, 829 | 95,159,403 | 101,261,096 | 105,835, 219 | 96,715,991 |
| Quebec. | 660,810,503 | 721,348,397 | 755, 247,641 | 819,390,839 | 869,222,682 |
| Ontario.. | 1,237,723,059 | 1,295,797,122 | 1,340,853,693 | 1,402,538,126 | 1,446,057,743 |
| Manitoba. | 219,559, 349 | 225,700,542 | 225,912,673 | 239, 228,353 | 237,235,972 |
| Saskatchewan.. | 280,457,734 | 286, 607,918 | 283, 963, 876 | 298, 209,628 | 278, 414,495 |
| Alberta. | 402,560,725 | 442,191,585 | 474,001,753 | 515,417, 285 | 552,879,855 |
| British Columbia. | 324,972,114 | 325,269,939 | 345,370,730 | 368,535,669 | 378,376,267 |
| Yukon and Northwest Territories. | 4,734,949 ${ }^{\text {2 }}$ | 8,939,770 | 11,518,629 | 9,756,248 | 10,591,858 |
| Totals, Gross Sales. | 3,349,209,171 | 3,544,856,742 | 3,690,678,245 | 3,921,523,005 | 4,037,985,614 |
| Refunds and exemptions | 723,118,141 | 812,898,257 | 826,000,245 | 904,702,945 | 897,788, 029 |
| Totals, Net Sales. | 2,626,091,030 | 2,731,958,485 | 2,864,678,000 | 3,016,820,060 | 3,140,197,585 |
|  |  |  | Diesel Oil |  |  |
| Totals, Net Sales......... | $\begin{aligned} & \mathrm{gal} . \\ & 92,832,457 \end{aligned}$ | $\begin{aligned} & \text { gal: } \\ & 95,479,919 \end{aligned}$ | $\begin{aligned} & \text { gal. } \\ & \mathbf{1 2 0 , 1 2 9 , 5 0 8} \end{aligned}$ | $\begin{aligned} & \text { gal. } \\ & \mathbf{1 2 8 , 9 5 4 , 9 0 0} \end{aligned}$ | $\begin{aligned} & \text { gal. } \\ & \text { 143,042,427 } \end{aligned}$ |

${ }^{1}$ Yukon Territory only.
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.

[^235]
## 9.-Summary Statistics of Motor Carriers-Freight, 1960 and 1961

| Item | Common |  | Contract |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 1960 | 1961 | 1960 | 1961 |
| Carriers Reporting........................ No. | 3,410 | 3,396 | 1,582 | 1,643 |
| Property Account-Fixed Assets (motor carrier business) $\qquad$ | 257,748,902 | 283,544,999 | 54,590,486 | 62,774,541 |
| Operating Revenues $\qquad$ Freight- | 351,204,428 | 369,956,818 | 64,723,319 | 73,589,340 |
|  | $338,895,506$ $5,155,549$ | $358,905,926$ $4,637,476$ | $62,501,315$ $1,045,555$ | $70,149,694$ 1 $1,329,950$ |
| Other....................................... | 7,153,373 | $4,637,476$ $6,413,416$ | $1,045,555$ $1,176,449$ | $1,329,950$ $2,109,696$ |
| Operating Expenses | 332,685, 794 | 349,397,130 | 57,771,713 | 66,248,095 |
| Maintenance............................... \& | 46,443,474 | 48,949,584 | 9,885,015 | 11,168,507 |
| Wages of drivers and helpers.................. \% | 69,980,465 | 74,022,863 | 12,512,268 | 15,017,785 |
| Other (fuel, fuel taxes, rents and depreciation). \$ | 132,754,005 | 139,089, 164 | 25,700,097 | 28,177,188 |
| Licence expense......................... \$ | 11,465,969 | 12,608,094 | 2,194,374 | 2,541,370 |
| Administration and general.................... § | 72,041,881 | 74,727,425 | 7,479,959 | 9,343,245 |
| Net Operating Revenues.................... \$ | 18,518,634 | 20,559,688 | 6,951,606 | 7,341,245 |
| Fuel Consumed- |  |  |  |  |
|  | 81,268 | 84,358 | 20,349 | 22,303 |
| Diesel oil.............................. "\% | 25,593 | 29,474 | 4,016 | 4,417 |
| Liquefied petroleum gases................... | 31 | 1 | 164 | 69 |
| Employees- |  |  |  |  |
| Average employed during year............. No. | 29,000 | 29,135 | 4,178 | 4,895 |
| Total salaries and wages.................... \& | 121,373, 312 | 128,473,330 | 16,838,920 | 20,967,925 |
| Working proprietors........................ . No. | 2,537 | 2,819 | 1,313 | 1,341 |
| Withdrawals of working proprietors............ \$ | 7,691,936 | 8,136,704 | 4,551,451 | 4,652,327 |
| Equipment- |  |  |  |  |
| Trucks with gasoline engines............... No. | 11,118 | 11,162 | 3,317 | 3,852 |
| Trucks with diesel engines.................. " | 205 | 191 | 162 | 153 |
| Road tractors with gasoline engines | 7,323 | 7,601 | 1,253 | 1,431 |
| Road tractors with diesel engines. | 2,605 | 2,709 | 344 | 445 |
| Semi-trailers.. | 15,453 | 16,488 | 1,968 | 2,275 |
| Trailers.. | 527 | 565 | 151 | 284 |

Household Goods Movers and Storage Operators.*-Statistics of household goods movers and storage operators, summarized in Table 10, were first presented separately in 1950; before that date, they were included with either motor carriers-freight or warehousing, depending upon the predominant source of operating revenues of the companies concerned.

[^236]10.-Summary Statistics of Household Goods Movers and Storage Operators, 1960 and 1961

| Item |  | 1960 | 1961 |
| :---: | :---: | :---: | :---: |
| Companies Reporting. | No. | 163 | 192 |
| Investment in Land, Warehouses, Vehicles, etc. | \$ | 18,016,538 | 24,506,043 |
| Revenues. | \$ | 30,962,777 | 34,315,516 |
| Cartage. | \$ | 21,882,082 | 24,329,327 |
| Storage. | \$ | 4,374,983 | 4,758,767 |
| Packing. | \$ | 3,116,592 | 3,605,636 |
| Other.. | \$ | 1,589,120 | 1,621,786 |
| Operating Expenses. | \$ | 30,324, 049 | 33,547,487 |
| Maintenance........ | \$ | 2,226,563 | 2,426,787 |
| Salaries and wages (charged to operations) | \$ | 9,925,366 | 10,692,026 |
| Cartage expenses......... | \$ | 1,884,625 | 2,269,976 |
| Storage expenses.. | \$ | 2,384,414 | 2,505,279 |
| Other operating expenses.. | \$ | 13,903,081 | 15,653,419 |
| Net Operating Revenues... | $\delta$ | 638,728 | 768,029 |

10.-Summary Statistics of Household Goods Movers and Storage Operators, 1960 and 1961 -concluded

| Item |  | 1960 | 1961 |
| :---: | :---: | :---: | :---: |
|  |  |  |  |
| Average employed during year... | No. | - ${ }^{3,658}$ | $3,906$ |
| Salaries and wages. . . . . . . . . . . |  | 13,701,905 | $14,937,657$ |
| Storage Capacity- 0201 |  |  |  |
| Household goods. | cu. ft. | 27,372,708 | 30,235,601 |
| Vehicles- |  |  |  |
| Trucks... | No. | 1,302 | 1,437 |
| Tractors. |  | 650 | 672 |
| Semi-trailers | " | 647 40 | $\begin{array}{r}711 \\ \hline\end{array}$ |
| Trailers... | " | 40 | 39 |

Passenger Buses.*-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 $\$ 3,000$ or over are covered. Operators predominantly involved in the provision of school bus service are not included.

* Statistics are given in more detail in DBS annual report Passenger Bus Statistics (Catalogue No. 53-215).
11.-Summary Statistics of Intercity and Rural Passenger Bus Companies, 1958-62

Note.-Only carriers with an annual gross revenue of $\$ 6,000$ or over are included.

| Item | 1958 | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Carriers Reporting. . . . . . . . . . . . . . . . . . No. | 154 | 162 | 162 | 161 | 159 |
| Property Account-Fired Assets......... \$ | 59,213,624 | 66,083,872 | 65,351,765 | 66,489,620 | 70,436,779 |
| Revenues.............................. \% | 46,787,640 | 49,131,642 | 51,076,097 | 53,122,514 | 57,057,805 |
| Regular Passenger | 37,930,050 | 40,275,902 | 41,773,022 | 42,969,210 | 45,051,213 |
| Urban and suburban..................... \$ | 1,771,348 | , 983,739 | 895,396 | 743,846 | 686,019 |
| Chartered service...................... \% | 3,641,525 | 3,966,249 | 4,202,019 | 4,722,831 | 6,125,050 |
| Other transportation revenue.............. § | 3,444,717 | 3,905,752 | 4,205,660 | 4,686,627 | 5,195, 523 |
| Operating Expenses.................... \$ | 43,005,593 | 44,945,424 | 46,624,230 | 49,060,235 | 51,845,161 |
| Maintenance............................ \$ | 9,172,354 | 8,979,538 | 9,300, 151 | 9,208,151 | 10,927, 855 |
| Wages and bonuses of drivers and helpers. \$ | 10,470, 104 | 11,246,010 | 11,791, 201 | 12,321,120 | 13,388,754 |
| Other transportation expenses............ \$ | 10,213,088 | 10,634, 177 | 10,510,437 | 10,318,002 | 10,677,733 |
| Operating taxes and licences.............. \$ | 3,569,911 | 3,934,147 | 4,175,011 | 4,322,054 | 4,237,632 |
| Other operating expenses................. \$ | 9,580,136 | 10,151,552 | 10,847,430 | 12,890,908 | 12,613,187 |
| Net Operating Revenues................ s | 3,782,047 | 4,186,218 | 4,451,867 | 4,062,279 | 5,212,644 |
| Traffic and Employees-Passengers- <br> Regular Routen- |  |  |  |  |  |
| Regular Routes- <br> Intercity and rural |  |  |  |  |  |
| Urban and suburban.................... ${ }^{\text {a }}$. | 12,581,592 | -5, $6,910,905$ | 7, 7 7, 201,426 | 54,401,687 | 50,756,342 |
| Special and chartered service | 4,696,157 | 4,788,193 | 5,786,121 | 4,834,020 | 5, 447,173 |
| Regular Routes- |  |  |  |  |  |
| Intercity and rural................. No. | 83,319,763 | 86,694,483 | 87, 880, 424 | 88,424,751 | 90,753,096 |
| Urban and suburban................. " | 4,219,187 | 2,405,350 | 2,401,113 | 1,642,072 | 1,664, 367 |
| Gpecial and chartered se | 6,066,251 | 6,297,288 | 7,024,473 | $8,128,367$ | 10,049, 231 |
| Diesel oil consumed.................... gal. | $6,903,530$ $7,012,014$ | 6,028,607 | 5,740,358 | $5,090,177$ | 4,501,251 |
| Employees- | 7,012,014 | 7,892,289 | 8,579,945 | 9,118,152 | 9,908, 848 |
| Average employed during year........ No. | 5,156 | 5,062 | 5,110 | 5,049 | 4,662 |
|  | 20,333,995 | 21,329,084 | 22,043,886 | 22,891,346 | 22,197, 171 |
| Withdrawals of working proprietors....... \$ | 187,795 | 215,256 | 209,737 | 57 173,681 | 150,308 |
| Equipment- |  |  |  |  |  |
| Buses................................. . No. | 2,300 | 2,367 | 2,388 | 2,340 | 2,393 |
|  | 1,432 | 1,389 | 1,347 | 1,495 | 1,191 |
| Di | 868 | 978 | 1,041 | 845 | 1,202 |

Motor Transport Traffic.*-Surveys of motor transport traffic in all provinces were placed on a continuing basis in 1957. Approximately 3 p.c. of total registrations were sampled for surveys of truck operations during each quarter of 1960. 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.

Excluding vehicles that do not perform normal transportation services, such as cranes, tow trucks, road building equipment, etc., the average number of trucks licensed in Canada during the year 1961 was 942,900 . Of these, 6.2 p.c. were for-hire carriers, 21.1 p.c. were private intercity trucks, 39.3 p.c. were private trucks operated predominantly within urban areas, and 33.4 p.c. were farm trucks. Almost one third of the total number were registered in Ontario and one half were registered in the two provinces of Ontario and Quebec.

For-hire trucks averaged 200,900 net ton-miles per vehicle and, although amounting to only 6.2 p.c. of total registrations, they accounted for 65 p.c. of the total net ton-miles performed by all commercial trucks in Canada, a result of the comparatively high average yearly milage of for-hire trucks and also of the heavier average load carried ( 10.8 tons as compared with an average of 5.2 tons for all trucks). The predominance of heavier vehicles in the for-hire group also explains the low milage per gallon of gasoline of 6.0 as compared with an average of 9.3 for all vehicles.

[^237]
## 12.-Summary Statistics of Truck Population and Traffic, by Type of Operation, 1960 and 1961



## 12.-Summary Statistics of Truck Population and Traffic, by Type of Operation, 1960 and 1961 -concluded

| Year and Item | For-Hire | Private |  |  | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Intercity | Urban | Farm |  |
| 1961-concluded |  |  |  |  |  |
| Miles Travelled-concluded |  |  |  |  |  |
| Manitobs............................... . 000 ,000 | 84.4 | 46.0 | 179.8 | 78.4 | 382.6 |
| Saskatchewan............................ ${ }^{\text {a }}$ | 79.2 | 111.4 | 64.4 | 200.1 | 455.1 |
| Alberta............................. " | 273.5 | 207.8 | 140.3 | 251.6 | 873.2 |
| British Columbia. | 129.9 | 218.6 | 269.1 | 38.5 | 651.1 |
| Miles per gallon of gasoline.............. . No. | 6.0 | 9.6 | 10.7 | 12.7 | 9.3 |
| Average weight of goods carried........ ton | 10.8 | 4.2 | 1.8 | 1.3 | 5.2 |
| Average net ton-miles per truck.......... No. | 200,900 | 19,800 | 5,100 | 1,400 | 19,100 |
| Capacity utilized....................... p.c. | 57.0 | 40.2 | 34.4 | 26.6 | 48.0 |
| Average gross ton-miles per truck........ No. | 449,900 | 59,200 | 20,600 | 7,900 | 51,000 |

Urban Transit Systems.-The collection of statistical information on urban transit systems has been extensively reorganized in the past few years. Because of major changes made in the types of vehicles used for mass passenger movement in urban centres, the statistical series that began with the financial and operating statistics of electric railways and later included their motor bus and trolley coach lines, became quite inadequate. 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 System, 1958-62


[^238]Motor Vehicle Accidents.-Motorists are required by law to report accidents but complete statistics of these accidents are not available for all provinces. The numbers of deaths from motor vehicle traffic accidents in each province are shown in Table 14 for the years 1952-61. It should be noted, however, that direct comparison of these figures between provinces is of little value because of differences in size, population, motor vehicle density, climate, road conditions, tourist cars, etc., all of which are factors in accidents. Also, the data presented in Table 15 relate to traffic accidents only and consequently may not be compared with figures of Table 14 which include fatalities occurring elsewhere than on public streets or roads.
14.-Deaths Resulting from Motor Vehicle Traffic and Non-traffic Accidents, by Province of Occurence, 1952-61

| Year | Nfld. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | $\begin{gathered} \text { Yukon } \\ \text { and } \\ \text { N.W.T } \end{gathered}$ | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| 1952.. | 23 | 28 | 120 | 117 | 859 | 1,010 | 107 | 106 | 139 | 209 | 4 | 2,722 |
| 1953.. | 29 | 13 | 124 | 111 | 901 | 1,082 | 102 | 124 | 220 | 208 | 7 | 2,921 |
| 1954. | 23 | 12 | 157 | 123 | 755 | 1,045 | 121 | 74 | 189 | 211 | 5 | 2,715 |
| 1955. | 46 | 16 | 123 | 137 | 888 | 1,111 | 100 | 125 | 197 | 225 | 4 | 2,972 |
| 1956.... | 43 | 16 | 152 | 151 | 803 | 1,180 | 145 | 134 | 236 | 316 | 8 | 3,184 |
| 1957... | 38 | 13 | 141 | 155 | 879 | 1,279 | 130 | 143 | 224 | 252 | 4 | 3,258 |
| 1958.... | 44 | 20 | 161 | 155 | 821 | 1,112 | 125 | 134 | 263 | 282 | 1 | 3,118 |
| 1959.... | 36 | 30 | 121 | 106 | 871 | 1,187 | 147 | 168 | 248 | 309 | 8 | 3,231 |
| 1960.... | 45 | 13 | 162 | 166 | 853 | 1,166 | 122 | 164 | 290 | 294 | 8 | 3,283 |
| 1961.... | 50 | 16 | 149 | 154 | 889 | 1,268 | 134 | 171 | 270 | 320 | 5 | 3,426 |

15.-Motor Vehicle Traffic Accidents, by Province, 1961

| Item | Nfld. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | $\begin{gathered} \text { Yukon } \\ \text { and } \\ \text { an.W.T. } \end{gathered}$ | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| Accidents Reported | 4,879 | 1,161 | 9,942 | 7,356 | 79,917 | 85, 577 | 13,402 | 13,583 | 23,331 | 27,203 | 336 | 266,687 |
| Fatal- |  |  |  |  |  |  |  |  |  |  |  |  |
| Resulting in death of one or more persons....... | 40 | 13 | 134 | 136 | 773 | 1,098 | 116 | 145 | 214 | 272 | 3 | 2,944 |
| Non-fatal- |  |  |  |  |  |  |  |  |  |  |  |  |
| Resulting in injury to one or more persons. | 1,058 | 251 | 1,982 | 1,963 | 17,220 | 25,643 | 3,660 | 3,281 | 4,381 | 8,076 | 84 | 67,599 |
| Resulting in property damage only | 3,781 | 897 | 7,826 | 5,257 | 61,924 | 58,836 | 9,626 | 10,157 | 18,736 | 18,855 | 249 | 196,144 |
| Persons Killed... | 50 | 16 | 149 | 154 | 889 | 1,268 | 134 | 171 | 270 | 320 |  | 3,426 |
| Drivers | 7 | 5 | 42 | 43 | 2 | 502 | 50 | 79 | 118 | 108 |  |  |
| Passengers. | 21 | 5 | 46 | 52 | 572 | 393 | 49 | 70 | 97 | 125 |  |  |
| Pedestrians | 19 | ${ }^{6}$ | 58 | 56 | 317 | 312 | 30 | 15 | 39 | 78 | - 1 | ${ }_{50} 931$ |
| Bicyclists: .............. | 2 | - | 2 |  |  | 32 | 1 | 2 | 2 | 6 | - | $50^{3}$ |
| Motorcyclists and passengers. |  | - | 1 | 4 | 2 | 16 | - |  |  | 3 |  | $213^{3}$ |
| Others........ | 1 | - | 1 | - | 2 | 13 | 4 | 4 |  | - | - | $36^{3}$ |
| Persons Injured | 1,394 | 366 | 2,796 | 2,871 | 25,142 | 37,146 | 5,238 | 5,227 | 6,851 | 12,101 | 131 | 99,263 |
| Drivers. | 276 | 142 | 947 | 1,034 | 2 | 14, 242 | 2,075 | 2,188 | 2,687 | 4,479 | 59 | $28,129{ }^{3}$ |
| Passengers. | 485 | 167 | 1,132 | 1,218 | 19,843 | 15,400 | 2,343 | 2,607 | 3,281 | 5,968 | 58 | ${ }_{15}^{52,502}$ |
| Pedestrians | 577 | 51 |  | 519 | 5,299 | 5,683 | ${ }^{612}$ | 338 | 613 | 1,157 | 13 | $\underset{\substack{15,484 \\ \hline 187}}{ }$ |
| Bicyclists........ | 35 | 5 | 75 | 82 | 2 | 1,281 | 176 | 75 | 133 | 325 | - | 2,187 |
| Motorcyclists and passengers. |  | 1 | 15 | 4 | 2 | 473 | 32 | 12 | 117 | 161 | 1 | $816{ }^{3}$ 1453 |
| Others.... | 17 | - | 5 | 18 | 2 | 67 | - |  | 0 | 11 |  | $145{ }^{3}$ |
| Total Property <br> Damage. .$\$ ’ 000$ | 2,066 | 427 | 3,989 | 3,366 | .. | 39,625 | 5,995 | 5,927 | 10,158 | 12,924 | 219 | 84,696 ${ }^{5}$ |

[^239]
## 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 the commerce of Canada is not dependent entirely upon Canadian shipping. However, a large part of the inland and coastal traffic is carried in ships of Canadian registry.

Up to June 1961, under the provisions of the British Commonwealth Merchant Shipping Agreement, all Commonwealth ships enjoyed equal privileges with Canadian ships in the carriage of goods and passengers from one port in Canada to another port in Canada, commonly known as the coasting trade. Before the completion of the St. Lawrence Seaway, most of the domestic Great Lakes traffic was moved in Canadianregistered ships and the rights of other Commonwealth ships in this trade were largely theoretical. However, after the Seaway was finished, the intrusion of other Commonwealth ships, particularly from Britain, became a reality and, in order to restore the status quo as it existed before the advent of the Seaway, the Canada Shipping Act was amended to exclude the Great Lakes and the St. Lawrence River system from some of the reciprocal provisions of the Agreement. This amendment (SC 1960-61, c. 32) gives to Canadian-registered ships the exclusive right to carry goods and passengers between Canadian ports in the Great Lakes and the St. Lawrence River system from Havre St. Pierre westward.

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 73 Ports of Registry in Canada.

[^240]
## 1.-Vessels on the Canadian Shipping Registry, by Province, as at Dec. 31, 1960-62

Nore.-Figures for $1935-59$ are given in the corresponding table of previous Year Books beginning with the 1941 edition.

| Province or Territory | 1960 |  | 1961 |  | 1962 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Ships | Gross Tonnage | Ships | Gross <br> Tonnage | Ships | Gross <br> Tonnage |
|  | No. | No. | No. | No. | No. | No. |
| Newfoundland. | 797 | 70,452 | 808 | 73,034 | 809 | 77,194 |
| Prince Edward Island. | 581 | 16,643 | 668 | 17,376 | 752 | 20,250 |
| Nova Scotia. | 5,858 | 124,288 | 6,055 | 123,386 | 6,326 | 148,198 |
| New Brunswick. | 1,853 | 65,467 | 1,983 | 74,188 | 2,126 | 78,856 |
| Quebec.. | 2,511 | 823,177 | 2,546 | 816,325 | 2,678 | 814,444 |
| Ontario.. | 2,336 | 859,955 | 2,376 | 890,574 | 2,425 | 888,440 |
| Manitoba. | 107 | 14,491 | 107 | 16,761 | 105 | 16,808 |
| Saskatchewan.. | - | - | - | - | - | - |
| Alberta. | 11 | 531 | 11 | 531 | 12 | 681 |
| British Columbia. | 6,319 | 601,811 | 6,499 | 617,330 | 6,755 | 653,433 |
| Yukon Territory. | 8 | 3,411 | 6 | 1,435 | 6 | 1,435 |
| Northwest Territories.. | - | - | - | - | - | - |
| Canada. | 20,381 | 2,580,226 | 21,059 | 2,630,940 | 21, \%94 | 2,699,739 |

Shipping Traffic.-Before 1952 the only information available on shipping activity in Canada was the number and registered net tonnage of vessels operating in and out of Canadian customs ports and the tonnage of cargoes loaded and unloaded at these ports destined for or arriving from foreign countries. In 1952 the coastwise movement of cargo in and out of customs ports was reported for the first time and in January 1957 the coverage was extended to include tonnage of vessels and tons of cargo in and out of non-customs ports. Reports are not required for vessels of less than 15 registered net tons.

## 2.-Vessels Entered at Canadian Ports, 1952-61

Note.-Figures for 1929-51 are given in the corresponding table of previous Year Books beginning with the 1941 edition.

| Year | In Foreign Service ${ }^{1}$ |  | In Coasting Service |  | Totals |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Vessels | Net Tons Registered | Vessels | Net Tons Registered | Vessels | Net Tons Registered |
|  | No. | No. | No. | No. | No. | No. |
| 1952. | 33,782 | 52,156,098 | 79,722 | 56,776,504 | 113,504 | 108,932,602 |
| 1953. | 34,400 | 56,589,078 | 88,675 | 67,417,391 | 123,075 | 124,006,469 |
| 1954. | 34,079 | 54,767,687 | 84,890 | 64,291,085 | 118,969 | 119,058,772 |
| 1955. | 34,432 | 58,018,365 | 86,010 | 67, 228,840 | 120,442 | 125,247, 205 |
| 1956. | 35,315 | 63,105,100 | 88,640 | 75,220,366 | 123,955 | 138,325,466 |
| 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 |

[^241]
## 3.-Vessels Entered at each of the Principal Canadian Ports, 1961

| Province or Territory and Port | In Foreign Service (Sea-going and Inland International) |  | In Coasting Service |  | Totals |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Vessels | Net Tons Registered | Vessels | Net Tons Registered | Vessels | Net Tons Registered |
|  | No. | No. | No. | No. | No. | No. |
| Newfoundland ${ }^{1}$ | 2,131 | 2,408,297 | 19,710 | 10,168,030 | 21,841 | 12,576,327 |
| Bell Island. | 123 | 820,014 | 73 | 196,450 | 196 | 1,016,464 |
| Corner Brool | 153 | 368,283 | 819 | 303,341 | 972 | 671,624 |
| St. John's. | 775 | 688,260 | 607 | 434,824 | 1,382 | 1,123,084 |
| Botwood. | 58 | 202,637 | 196 | 57,005 | 254 | 259,642 |
| Port aux Basques | 59 | 40,717 | 953 | 1,738,334 | 1,012 | 1,779,051 |
| Prince Edward Island ${ }^{1}$ | 51 | 61,912 | 359 | 417,854 | 410 | 479,766 |
| Charlottetown. | 14 | 30,450 | 264 | 307,351 | 278 | 337,801 |
| Nova Scotia ${ }^{1}$ | 4,144 | 7,484,257 | 5,526 | 5,455,156 | 9,670 | 12,939,413 |
| Halifax. | 1,460 | 5,115,734 | 878 | 1,190,518 | 2,338 | 6,306,252 |
| Sydney. | 152 | 343,082 | 807 | 1,220,078 | 959 | 1,563,160 |
| Hantsport | 201 | 678,298 | 4 | 1,870 | 205 | 680,168 |
| Baddeck. | 32 | 91,271 | 213 | 56,804 | 245 | 148,075 |
| North Sydney | 262 | 46,969 | 971 | 1,649,413 | 1,233 | 1,696,382 |
| New Brunswick ${ }^{1}$ | 2,840 | 2,818,457 | 3,253 | 1,913,336 | 6,093 | 4,731,793 |
| Saint John | 561 | 2,328,611 | 832 | 1,304,130 | 1,393 | 3,632,741 |
| Bathurst. | 16 | 23,881 | 112 | 58,753 | 128 | 82,634 |
| Dalhousie | 67 | 203,938 | 13 | 35,608 | 80 | 239,546 |
| Quebec ${ }^{1}$ | 5,592 | 22,748,243 | 21,628 | 19,387,265 | 27,220 | 42,135,508 |
| Montreal | 2,870 | 10,646,561 | 3,278 | 5,488,133 | 6,148 | 16,134,694 |
| Sept Iles | 254 | 1,893,366 | 1,244 | 1,863,298 | 1,498 | 3,756,664 |
| Quebec. | 812 | 3,580,274 | 1,839 | 2,834,659 | 2,651 | 6,414,933 |
| Sorel. | 179 | 998,715 | 625 | 1,107,697 | 804 | 2,106,412 |
| Trois Rivières | 529 | 2,153,439 | 2,373 | 1,729,738 | 2,902 | 3,883,177 |
| Baie Comeau | 252 | 1,285,464 | 1,316 | 804,896 | 1,568 | 2,090,360 |
| Port Alfred. | 359 | 1,273,543 | 785 | 535,714 | 1,144 | 1,809,257 |
| Port Cartier | 27 | 270,976 | 40 | 95,632 | 67 | 366,608 |
| Ontario ${ }^{\text {1 }}$ | 6,364 | 16,875,642 | 12,037 | 21,189,872 | 18,401 | 38,065,514 |
| Port Arthu | 307 | 1,713,417 | 813 | 3,683,613 | 1,120 | 5,397,030 |
| Hamilton. | 810 | 3,789,475 | 543 | 1,166,240 | 1,353 | 4,955,715 |
| Sault Ste. Marie | 563 | 2,288,108 | 731 | 1,049,148 | 1,294 | 3,337, 256 |
| Toronto | 1,099 | 2,735,686 | 1,106 | 1,879,410 | 2,205 | 4,615,096 |
| Fort Willia | 267 | 811,201 | 609 | 1,987,137 | 876 | 2,798,338 |
| Sarnia. | 323 | 923,176 | 832 | 1,609,788 | 1,155 | 2,532,964 |
| Port Colb | 228 | 615,798 | 385 | 1,073,777 | 613 | 1,689,575 |
| Prescott. | 78 | 155,575 | 318 | 883,734 | 396 | 1,039,309 |
| Clarkson | 12 | 54,404 | 299 | 720,233 | 311 | 774,637 |
| Kingston | 73 | 142,015 | 434 | 658,577 | 507 | 800,592 |
| Picton. | 73 | 107,512 | 137 | 508,507 | 210 | 616,019 |
| Windsor | 940 | 668,392 | 308 | 612,058 | 1,248 | 1,280,450 |
| Midland. | 37 | 100,386 | 82 | 384,534 | 119 | 484,920 |
| Goderich. | 50 | 141,363 | 108 | 304,775 | 158 | 446,138 |
| Michipicoten Harbour | 33 | 136,815 | 61 | 238,840 | 94 | 375,655 |
| Thorold.. | 96 | 242,866 | 283 | 638,689 | 379 | 881,555 |
| Little Current | 96 | 275,365 | 166 | 130,331 | 262 | 405,696 |
| Manitoba-Churchill | 54 | 236,327 | 18 | 26,652 | 72 | 262,979 |
| British Columbla ${ }^{1}$ | 10,653 | 24,496,822 | 52,783 | 32,568,195 | 63,436 | 57,065,017 |
| Vancouver. | 3,520 | 9,249,651 | 19,785 | 13,152,128 | 23,305 | 22,401,779 |
| New Westminster | 750 | 2,173,188 | 4,434 | 1,785,058 | 5,184 | 3,958,246 |
| Victoria..... | 2,527 | 5,830,898 | 2,899 | 1,411,265 | 5,426 | 7,242,163 |
| Powell River Nanaimo... | 221 | 284,463 | 2,251 | 582,382 | 2,472 | 866,845 |
| Nanaimo.... | 422 289 | 1,373,551 | 5,139 | 9,240, 991 | 5,561 | 10,614,542 |
| Prince Rupert | 707 | $1,175,005$ 619,119 | + 519 | 219,543 551,732 | $\begin{array}{r}808 \\ 1,738 \\ \hline\end{array}$ | 1,394,548 |
| Ocean Falls. | 41 | 144,030 | 1,602 | 551,732 561,215 | 1,738 | 1,170,851 |
| Chemainus | 230 | 594,888 | 861 | 537,022 | 1,091 | 1,131,910 |
| Duncan Bay | 63 | 121,632 | 656 | 279,635 | 719 | 401, 267 |
| Britannia Beach | 129 | 111,347 | 1,120 | 424,513 | 1,249 | 535, 860 |
| Quatsino. Crofton | 84 | 319,621 | 152 | 86,222 | 236 | 405,843 |
| Kitimat. | 1.9 74 | ${ }_{353}^{650,921}$ | 751 | 335,491 | 930 | 986,412 |
| Northwest Territories. | 3 | 10,567 | 25 | 31,348 | 28 | 41,915 |
| Totals | 31,832 | 77,140,524 | 115,339 | 91,157,708 | 147,171 | 168,298,232 |

${ }^{1}$ Includes smaller ports not shown separately.

## 4.-Cargoes Loaded and Unloaded at Principal Canadian Ports from Vessels in International Seaborne and Coastwise Shipping, by Province, 1960 and 1961

| Province or Territory and Port | 1960 |  |  | 1961 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Loaded | Unloaded | Total | Loaded | Unloaded | Total |
|  | tons | tons | tons | tons | tons | tons |
| Newfoundlan | 5,661,840 | 2,649,071 | 8,310,911 | 4,905,463 | 2,709,526 | 7,614,989 |
| Bell Island | 3,147,675 | 54,003 | 3,201,678 | 2,592,900 | 21,074 | 2,613,974 |
| Corner Broo | 435,352 | 1,032,291 | 1,467,643 | 451,390 | 910,906 | 1,362,296 |
| St. John's | 114,097 | 587,933 | 702,030 | 127,990 | 619,369 | 747,359 |
| Botwood | 377,027 | 140,491 | 517,518 | 340,527 | 175,378 | 515,905 |
| Port aux Basques | 32,723 | 293,744 | 326,467 | 34,029 | 305,569 | 339,598 |
| Prince Edward Island ${ }^{1}$ Charlottetown. $\qquad$ | $\begin{array}{r} \mathbf{1 7 6 , 8 9 6} \\ 95,037 \end{array}$ | $\begin{aligned} & \mathbf{4 3 2 , 2 7 8} \\ & 350,763 \end{aligned}$ | $\begin{aligned} & \mathbf{6 0 9 , 1 7 4} \\ & 445,800 \end{aligned}$ | $\begin{aligned} & \mathbf{2 0 1 , 2 9 3} \\ & 142,034 \end{aligned}$ | $\begin{aligned} & \mathbf{5 4 4 , 7 7 3} \\ & 381,665 \end{aligned}$ | $\begin{aligned} & \mathbf{7} \\ & 523,0666 \end{aligned}$ |
| Nova Scotia ${ }^{1}$ | 9,400,453 | 5,696,659 | 15,097,112 | 9,779,861 | 5,347,052 | 15,126,913 |
| Halifax | 3,962,480 | 3,641,482 | 7,603,962 | 3,842,247 | 3,663,062 | 7,505,309 |
| Sydney | 1,599,715 | 1,721,968 | 3,321,683 | 2,007,876 | 1,321,364 | 3,329,240 |
| Hantspo | 2,189,015 | 969 | 2,189,984 | 2,153,845 |  | 2,154,348 |
| Baddeck | - 329,399 | 172 | 329,571 | 410,814 | 115 | 410,929 |
| North Sydn | 393,898 | 28,113 | 422,011 | 267,433 | 22,011 | 289,444 |
| New Brunsw | 2,342,627 | 3,307,582 | 5,650,209 | 2,870,964 | 3,614,072 | 6,485,036 |
| Saint John | 1,785,931 | 2,667,977 | 4,453,908 | 2,253,386 | 2,964,526 | 5,217,912 |
| Bathurst | 16,099 | 283,017 | 299,116 | 22,973 | 259,114 | 282,087 |
| Dalhous | 208,348 | 5,013 | 213,361 | 214,037 | 13,059 | 227,096 |
| Quebec ${ }^{1}$ | 27,259,149 | 23,671,731 | $\mathbf{5 0 , 9 3 0 , 8 8 0}$ | 29,396,837 | 27,870,915 | 57,267,752 |
| Montrea | 7,345,786 | 10,542,122 | 17,887,908 | 8,461,781 | 12,511,582 | 20,973,363 |
| Sept Îles | 11,091,132 | 414,960 | 11,506,092 | 8,463,919 | 357,439 | 8,821,358 |
| Quebe | 1,045,081 | 3,185,090 | 4,230,171 | 1,169,007 | 3,571,751 | 4,740,758 |
| Sorel | 976,071 | 1,743,965 | 2,720,036 | 1,651,261 | 2,694,209 | 4,345,470 |
| Trois Rivi | 714,083 | 2,038,332 | 2,752,415 | 1,344,998 | 2,666,219 | 4,011,217 |
| Baie Comea | 726,856 | 947,604 | 1,674,460 | 1,580,217 | 1,844,574 | 3,424,791 |
| Port Alfred | 563,266 | 3,068,796 | 3,632,062 | 464,007 | 2,477,456 | 2,941,463 |
| Port Cartie | 7,407 | 145,476 | 152,883 | 1,334,202 | 22,221 | 1,356,423 |
| Ontario ${ }^{1}$ | 23,295,384 | 31,320,528 | 54,615,912 | 26,407,891 | 31,628,314 | 58,036,205 |
| Port Arth | 8,070,168 | 256,969 | 8,327,137 | 9,286,460 | 267,755 | 9,554,215 |
| Hamilton | 563,462 | 7,586,561 | 8,150,023 | 495,505 | 7,292,390 | 7,787,895 |
| Sault Ste. | 526,419 | 4,176,918 | 4,703,337 | 874,357 | 4,877,612 | 5,751,969 |
| Toronto | 815,111 | 3,743,963 | 4,559,074 | 924,807 | 4,154,626 | 5,079, 433 |
| Fort Will | 2,935,424 | 843,851 | 3,779,275 | 2,955,680 | , 923,936 | 3,879, 616 |
| Sarnia | 1,768,413 | 1,526,888 | 3,295,301 | 1,958,876 | 1,203,640 | 3,162,516 |
| Port Colb | 1,492,026 | 1,111,856 | 2,603,882 | 1,652,811 | 1,311,818 | 2,964,629 |
| Prescott. | 318,617 | 782,265 | 1,100,882 | 700,008 | 1,133,947 | 1,833, 955 |
| Clarkso | 333,026 | 907,061 | 1,240,087 | 601,328 | 1,016,355 | 1,617,683 |
| Kingsto | 447, 816 | 837,531 | 1,285,347 | 466,316 | 898,766 | 1,365,082 |
| Picton. | 972, 668 | 57,104 | 1,029,772 | 1,290, 131 | 78,689 | 1,364,820 |
| Windsor | 430,891 | 932,315 | 1,363,206 | 330,618 | 783,526 | 1,114,144 |
| Midland |  | 986,567 | 987,056 | 16,250 | 927,448 | 943,698 |
| Goderich...... | 249, 708 | 539, 062 | 788,770 | 331,468 | 510,203 | 841,671 739830 |
| Michipicoten Harb | 750,588 205,982 | 111,135 679,539 | 861,723 885,521 | 682,486 220,738 | 57,344 490,372 | 739,830 711,110 |
| Thorold... | 205,982 167,215 | $\begin{aligned} & 679,539 \\ & 641,488 \end{aligned}$ | 885,521 808,703 | 220,738 233,669 | 490,372 469,645 | 711,,314 |
| Manitoba ${ }^{2}$ | 605,154 | 72,091 | 677,245 | 612,081 | 53,747 | 665, 828 |
| Churchi | 605,154 | 72,091 | 677,245 | 612,081 | 52,924 | 665,005 |
| British Columb | 22,659,437 | 12,672,615 | 35,332,082 | 25,710,072 | 13,790,103 | 39,500,175 |
| Vancouver | 8,784,290 | 4,271,076 | 13,055,366 | 10,614,223 | 4,419,347 | 15,033,570 |
| New Westmins | 2,302,069 | 1,439, 897 | 3,741,966 | 2,449,818 | 1,503,188 |  |
| Victoria | 1,088,588 | 745,515 | 1,834,103 | 1,206, 604 | 903,638 | $2,110,242$ $1,466,048$ |
| Powell Rive | 530,029 548,000 | 995, 256 | 1,525,285 | 504,368 <br> 597 <br> 978 | 961,680 | $1,466,048$ $1,348,472$ |
| Nanaimo... | 548,000 573,206 | 448,810 | ${ }_{945,618}^{996}$ | 597,978 593,145 | 750,494 414,278 | 1,007,423 |
| Prince Ruper | 171,274 | 502,249 | 673,523 | 459,240 | 505,943 | 965,183 |
| Ocean Falls | 345, 767 | 576,006 | 921,773 | 351,809 | 574,387 | 926,196 |
| Chemainus | 493,582 | 47,956 | 541,538 | 685,938 | 38,704 | 724,642 |
| Duncan Bay | 150,107 | 373,458 | 523,565 | 226,064 | 452,566 | ${ }_{664} 614$ |
| Britannia Be | 600, 844 | 16,480 | 617,324 | 507,462 |  |  |
| Quatsino. Crofton | 298,499 198,867 | 106,361 394,192 | 404,860 593,059 | 505,751 206,994 | 129,911 403,870 | 635,662 |
| Kitimat | 131,310 | 483,479 | 614,789 | 111,239 | 405, 203 | 516,442 |
| Northwest Territories | 2,950 | 48,865 | 51,815 | 19,885 | 45,371 | 65,256 |
| Totals | 91,403,890 | 79,871,450 | 171,275,340 | 99,904,347 | 85,603,873 | 185,508,220 |

[^242]${ }^{2}$ Churchill only for 1960.

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 covering traffic in and out of both customs and non-customs ports are available from 1957. These do not include freight in transit or freight moved from one point to another within the harbour. Table 5 shows the principal commodities loaded and unloaded in foreign and coastwise shipping at the ten ports handling the largest cargo volumes in 1961. These ports handled 59 p.c. of all Canada's international shipping and 42 p.c. of the coastwise trade. The list of commodities used for these statistics was expanded and changed in 1961 to conform with the revised Standard Industrial Classification. The specific commodities shown are those transported in volume and often in bulk form. As the description of such commodities remains unchanged in the revised classification, the effect of the changeover on continuity and comparability is considered to be relatively unimportant.

## 5.-Principal Commodities in Water-Borne Cargo Loaded and Unloaded at Ports Handling the Largest Tonnages in 1961

Nore.-Only commodities totalling over 50,000 tons are listed.

| Port and Commodity | International Seaborne Shipping |  | Coastwise Shipping |  | Total Seaborne and <br> Coastwise |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Loaded | Unloaded | Loaded | Unloaded |  |
|  | tons | tons | tons | tons | tons |
|  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Crude petroleum | 6,500 | 2,931,635 | 13,229 | 42,416 | 2,993,780 |
| Fuel oil. | 44,034 | 805,112 | 1,949,022 | 159,194 | 2,957,362 |
| Coal, bituminous |  | 441,908 | 543,567 | 1,437,110 | 2,422,585 |
| Gasoline.. |  | 85,222 | 999,516 | 60,338 | 1,145,076 |
| Soybeans | 142,485 | 109,316 |  | 73,033 | 324,834 |
| Sugar... | 332 | 315,743 | - |  | 316,075 |
| Gypsum |  | 5 | - | 249,385 | 249,390 |
| Corn... | 36,708 | 194,887 | - | 16,277 | 247, 872 |
| Flaxseed. | 66,581 | 16,607 |  | 142,684 | 225, 872 |
| Sand and gravel |  | , 75 | - | 194,400 | 194,475 |
| Iron ore. | 63,458 | 98,718 | - | 27,195 | 189,371 |
| Iron and steel scrap | 180,788 |  | - | 2,411 | 183,199 |
| Barley... | 6,971 | - | - | 167,715 | 174,686 |
| Wheat flour. | 135,298 |  | - |  | 135,298 |
| Lubricating oils and greases |  | 25,938 | 106,648 | 1,900 | 134,486 |
| Cement. |  | 2,462 | 103,763 |  | 106,225 |
| Chemicals and related products | 16,459 | 36,773 | 10,561 | 26,222 | 90,015 |
| Salt. | 658 | 20,686 |  | 66,264 | 87,608 |
| Oats | 840 | 359 | - | 75,306 | 76,505 |
| Copper, alloyed and | 73,109 | 127 | - |  | 73,236 |
| Molasses, crude | -9,175 | 5,040 |  | 51,473 | 65,688 |
| Iron and steel--castings, bar, sheet, structural, etc. <br> Malt. |  | 61,197 |  | 4,223 | 65,420 |
|  | 8,212 | 32,988 | 14,473 | 4,468 | 60,141 |
|  | 1,172 |  |  | 50,669 | 51,841 |
| Totals, Commodities Listed <br> Totals, All Commodities | 2,935,320 | 5,458,996 | 3,740,779 | 5,264,001 | 17,399,096 |
|  | 4,202,463 | 6,721,523 | 4,259,318 | 5,790,059 | 20,973,363 |
| Vancouver- |  |  |  |  |  |
| Wheat.. | 3,732,240 | 672 | 11 | - | 3,732,923 |
| Pulpwood.. | 520,241 | 560 | 1,123,309 | 232,849 | 1,876,959 |
| Sand and gravel... |  | 185,542 | 1,12888 | 1,260,047 | 1,450, 877 |
| Lumber and timber | 794,283 175,036 | 8,764 4 4850 | 21,240 18 | $\begin{array}{r}72,842 \\ 584 \\ \hline 85\end{array}$ | -897, 129 |
| Fuel oil. . . . . . . . | 175,036 26,109 | 4,250 78,116 | 18,790 667,490 | 584,853 1,326 | 782, 7294 |
| Hogged fuel. | 241,270 |  | 412,094 | 1,326 700 | 654,064 |
| Coal, bituminous | 456,928 | - | 10,958 | 3,285 | 471,171 |
| Barley.... | 413,098 | - | - | - | 413,098 |

## 5.-Principal Commodities in Water-Borne Cargo Loaded and Unloaded at Ports Handling the Largest Tonnages in 1961-continued



## 5.-Principal Commodities in Water-Borne Cargo Loaded and Unloaded at Ports Handling the Largest Tonnages in 1961-concluded

| Port and Commodity | International Seaborne Shipping |  | Coastwise Shipping |  | Total Seaborne and Coastwise |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Loaded | Cnloaded | Loaded | Unloaded |  |
|  | tons | tons | tons | tons | tons |
|  |  |  |  |  |  |
|  | 12,330 | 1,408,250 | 3,800 | 235,863 | 1,656,443 |
| Limestone. |  | 449,955 | - |  | 449,955 |
| Pulpwood. | 1,600 | - | 130,865 | 203,625 | 336,090 |
| Iron and steel-ingot, billet, etc. | 237,955 | - | 14,836 | - | 252,791 |
| Pig iron........... | 196,495 |  | 42,542 | $\overline{55}$ | 239,040 |
| Sand and gravel | 6,950 | 120,035 | - | 55,993 | 182,978 |
| Fuel oil. | 10 | 7,874 | - | 161,312 | 169,196 |
| Iron and steel-castings, bar, sheet, etc. | 37,852 | 128 | 87,120 | 490 79,346 | 125,590 79,346 |
| Gasoline. |  |  |  | 79,346 | 79,346 |
| Totals, Commodities Listed | 493,195 | 4,093,394 | 279,163 | 751,083 | 5,616,835 |
| Totals, All Commodities. | 532,388 | 4,106,517 | 341,969 | 771,095 | 5,751,969 |
|  |  |  |  |  |  |
| Crude petroleum | - | 2,109,995 |  |  | 2,109,995 |
| Fuel oil. |  | 14,153 | 671,691 | 227,561 | 913,405 |
| Wheat. ............................ | 528,103 |  | - |  | 528,103 |
| Gasoline. |  | - 223,796 | 285,239 | 113,845 | 399,084 225069 |
| Sugar................................. | 1,090 | 223,796 |  |  | 225,069 |
| Totals, Commodities Listed | 529,193 | 2,347,944 | 957,113 | 341,406 | 4,175,656 |
| Totals, All Commodities | 1,241,388 | 2,585,502 | 1,011,998 | 379,024 | 5,217,912 |
| Toronto- |  |  |  |  |  |
| Coal, bituminous. | - | 1,099,203 | 7,057 | 217,723 | 1,323,983 |
| Fuel oil | - | 62,357 | 67,810 | 443,430 | 573,597 |
| Wheat. | - | - | 128,647 | 256,340 | 384,987 |
| Limestone | - | - | 240 | 381,865 | 382,105 |
| Cement. | 600 | - | - | 291,365 | 291,965 |
| Soybeans | 6,424 | 250,186 | 2,935 | 14,024 | 273,619 |
| Gasoline. |  |  | 236,188 | 16,182 | 252,370 |
| Iron and steel scrap | 169,515 | 13,348 | 400 | 3,600 | 186,863 146,585 |
| Sand and gravel Barley......... |  | 10,621 |  | 135,964 142,340 | 146,585 142,340 |
| Sugar. | - | 104,607 | - |  | 104,607 |
| Salt. | - | 12,000 | - | 60,385 | 72,385 |
| Lubricating oils and greases |  | 38,561 | 1,400 | 22,550 | 62,511 |
| soybean oil cake and meal. | 57,117 |  | - |  | 57,117 |
| Totals, Commodities Liste | 233,656 | 1,590,883 | 444,727 | 1,985,768 | 4,255,034 |
| Totals, All Commodities | 346,396 | 1,918,887 | 578,411 | 2,235,739 | 5,079,433 |
| Quebec- |  |  |  |  |  |
| Fuel oil. | 3,300 | 299,455 | 101,179 | 668,025 | 1,071,959 |
| Pulpwood. | 10,581 |  |  | 1,008,882 | 1,019,463 |
| Wheat... | 336,551 | 14,318 |  | 303,416 | 654,285 |
| Aspestos, unmanuiactured | - |  | 28,053 | 511,371 | 539,424 |
| Asbestos, unrnanufactured | 255,652 215,241 |  |  |  | 255,652 215,244 |
| Coal, bituminous |  | 43,552 | 515 | 155,319 | 199,386 |
| Barley.. | - |  | 515 | 140,438 | 140,438 |
| Pig iron | 41,000 |  | 25 | 42,498 | 83,498 |
| Corn. | - | 2,632 59,110 | 25 | 78,411 12,913 | 81,068 72,023 |
| Totals, Commodities Listed. | 862,325 | 419,070 | 129,772 | 2,921,273 | 4,332,440 |
| Totals, All Commodities | 983,608 | 593,539 | 185,399 | 2,978,212 | 4,740,758 |

## 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 the handling of general cargo, and special equipment for such bulk freight as lumber, coal, oil and grain. Facilities may include cold storage warehouses, harbour railway and switching connections, grain elevators, coal bunkers, oil storage tanks and, in the chief harbours, dry dock accommodation.

Eight of the principal harbours of Canada are administered by the National Harbours Board. Eleven other harbours come under the supervision of the Department of Transport and are administered by commissions that include municipal as well as Federal Government appointees. In addition, there are about 300 public harbours that are under the direct supervision of the Department of Transport. These harbours are administered under rules and regulations approved by the Governor General in Council. Harbour masters have been appointed by the Minister of Transport for 110 of these harbours, their remuneration being paid from fees levied on vessels under the terms of the Canada Shipping Act.

At most ports, in addition to the harbour facilities operated by the operating authorities, there are dock and handling facilities owned by private companies such as railway, pulp and paper, oil and sugar industries. At several of the ports there are also dry dock facilities.

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, etc., at the harbours of Halifax, Saint John, Chicoutimi, Quebec, Trois Rivières, Montreal, Vancouver and Churchill; grain elevators at Prescott and Port Colborne; and the Jacques Cartier Bridge at Montreal. Current operating revenues and expenditures are given in Table 23, p. 803.

## 6.-Facilities of the Larger Harbours Administered by the National Harbours Board, as at Dec. 31, 1982

| Note.-The facilities at these ports include those under the control of other agencies as well as those of the |
| :--- |
| National Harbours Board. |

## 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.

The canals 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 1961, 57,222,696 tons of freight and 25,980 vessels passed through the canals as compared with $52,946,883$ tons of freight and 29,629 vessels during 1960. In addition to freight and passenger vessels, thousands of pleasure craft are locked through the canals. Vessels locking at Sault Ste. Marie during 1961 carried 153,154 passengers as compared with 173,715 in 1960.

## 7.-Lengths of Channels and Dimensions of Locks under the Control of the St. Lawrence Seaway Authority or the Department of Transport

| Name | Location | $\begin{gathered} \text { Length } \\ \text { of } \\ \text { Channel } \end{gathered}$ | Locks |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | No. | Minimum Dimensions |  |  |
|  |  |  |  | Length | Width | Depth |
|  |  | miles |  | ft. | ft. | ft. |
| Seaway Canals ${ }^{1}$ |  |  |  |  |  |  |
| Main Route- |  |  |  |  |  |  |
| South Shore. | Montreal to Caughnawaga | 20 |  | 766 | 80 | 30 |
| Beauharnois... | Melocheville to Lake St. Francis......... | 15 | 2 | 766 | 80 | 30 |
| Iroquois...... | Iroquois Point. ......................... | 1 | 1 | 766 | 80 | 30 |
| Welland.............. | Port Weller, Lake Ontario, to Port Colborne, Lake Erie. | 27.60 | 8 | 859 | 80 | 30 |
| Non-tollLachine. Cornwall (not through canal) <br> Sault Ste. Marie....... |  |  |  |  |  |  |
|  | Montreal to Lachine. | 8.74 | 5 | 270 | 45 | 14 |
|  | Cornwall to closure dyke............... | 3.50 | 4 | 270 | 43.67 |  |
|  | St. Mary's Rapids, Sault Ste. Marie...... | 1.38 | 1 | 900 |  | 18.25 |
| Department of Transport Canals |  |  |  |  |  |  |
| Atlantic AreaCanso Canal St. Peter's. |  |  |  |  |  |  |
|  | Canso Causeway, N.S.................. | 0.70 | 1 | 820 | 80 | 28 |
|  | St. Peter's Bay to Bras d'Ör Lakes, Cape Breton, N.S. |  |  |  |  |  |
| Richelieu River-St. Ours.................Chambly........ |  | 0.50 | 1 | 300 | 47.4 | 17 |
|  | St. Ours, Que............................ | 0.12 | 1 | 339 |  | 12 |
|  | Chambly to St. Jean, Que................ | 11.78 | 9 | 120.5 | 23.25 | 6.5 |
| Ottawa and Rideau RiversSte. Anne.. $\qquad$ | Junction of St. Lawrence and Ottawa |  |  |  |  |  |
| Carillon. | Rivers................................. | 0.12 | 1 | 200 | 45 | 9 |
|  | Carillon Rapids, Ottawa River........... | 0.50 | 2 | 200 | 45 | 9 |
| Rideau. | Ottawa to Kingston..................... | 123.53 | 47 | 134 | 33 | 5.5 |
| Lake Ontario to Georgian BayTrent $\qquad$ <br> Murray $\qquad$ | Rideau Lake to Perth (Tay Branch)..... | 6.82 | 2 | 134 | 33 | 5.5 |
|  | Trenton to Peterborough lock, Peterborough. <br> Peterborough lock to Swift Rspids. <br> Swift Rapids to Big Chute. <br> Big Chute to Port Severn. <br> Sturgeon Lake to Lindsay (Scugog <br> Branch) | 88.74 | 18 | 175 | 33 | $8{ }^{2}$ |
|  |  | 135.71 | 24 | 134 | 33 | 6 |
|  |  | 8.00 | - | - | - | 4 |
|  |  | 8.11 | 1 | 100 | 25 | 6 |
|  |  |  | 1 | 142 | 33 |  |
|  | Lindsay to Port Perry (Scugog Branch). Isthmus of Murray. Bay of Quinte. | 25.00 | - | - | - | 4.5 |
| Murray. |  | 7.53 | - | - | - | 8.53 |

[^243]
## 8．－Traffic through Canadian Canals，by Nationality of Vessel，Navigation Seasons 1952－61

Note．－Figures include duplications where vessels pass through two or more canals．Figures from 1886 are given in the corresponding table of previous Year Books beginning with the 1902 edition．

| $\begin{aligned} & \text { Navigation } \\ & \text { Season } \end{aligned}$ | Canadian |  | United States |  | United Kingdom |  | Other |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Vessels | Registered Tonnage | Vessels | Registered Tonnage | Vessels | Registered Tonnage | Vessels | Registered Tonnage |
|  | No． | No． | No． | No． | No． | No． | No． | No． |
| 1952. | 22，565 | 25，608，373 | 3，081 | 3，686，781 | 1 | 1 | 676 | 514，224 |
| 1953. | 23，378 | 27，845，139 | 2，984 | 3，777，571 | 1 | 1 | 1，201 | 919，875 |
| 1954. | 21，066 | 25，303，262 | 3，145 | 3，245，555 | 1 | 1 | 1，081 | 893，778 |
| 1955 | 22，758 | 27，709，232 | 3，950 | 3，798，290 | 200 | 132，858 | 1，264 | 1，044，774 |
| 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 |
| 1958. | 21，763 | 26，635，559 | 3，216 | 3，029，624 | 302 | 198，926 | 2，170 | 1，793， 309 |
| 1959 | 21，363 | 28，706，462 | 4，819 | 4，233，936 | 1，125 | 3，130，140 | 3，252 | 7，321，449 |
| 1960. | 19，816 | 28，963，294 | 5，046 | 3，660，931 | 1，303 | 3，971，587 | 3，464 | 9，455，739 |
| 1961. | 17，332 | 32，531，256 | 3，307 | 2，515，262 | 1，845 | 6，294，753 | 3，496 | 10，065，901 |

${ }^{1}$ Included with Canadian vessels．

## 9．－Freight Traffic through Canadian Canals by Origin of Cargo，Navigation Seasons 1952－61

Nore．－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．

| NavigationSeason | Canada |  | United States |  | Britain |  | Other |  | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Tons | $\left\lvert\, \begin{aligned} & \text { P.C. of } \\ & \text { Total } \end{aligned}\right.$ | Tons | $\begin{array}{\|l} \text { P.C. of } \\ \text { Total } \end{array}$ | Tons | $\begin{aligned} & \text { P.C. of } \\ & \text { Total } \end{aligned}$ | Tons | $\left\lvert\, \begin{gathered} \text { P.C. of } \\ \text { Total } \end{gathered}\right.$ | Tons |
| 1952 | 17，245， 051 | 55.0 | 14，109，088 | 45.0 | 1 | 1 | 1 | 1 | 31，354，139 |
| 1953 | 18，464，479 | 55.3 | 14，908，585 | 44.7 | 1 | 1 | 1 | 1 | 33，373，064 |
| 1954 | 17，237，542 | 57.3 | 12，833，159 | 42.7 | 1 | 1 | 1 | 1 | 30，070，701 |
| 1955. | 20，002，540 | 57.4 | 14，177， 878 | 40.7 | 120，827 | 0.3 | 572，953 | 1.6 | 34，874，198 |
| 1956. | 24，698，001 | 61.7 | 14，457，217 | 36.1 | 106，448 | 0.3 | 754，899 | 1.9 | 40，016，565 |
| 1957 | 21，459，552 | 57.6 | 15，021，930 | 40.3 | 151，550 | 0.4 | 597，317 | 1.6 | 37，230，349 |
| 1958. | 21，832，526 | 62.2 | 12，177，376 | 34.7 | 223，059 | 0.6 | 863，626 | 2.5 | 35，096，587 |
| 1959 | 30，829，746 | 60.4 | 17，134，694 | 33.5 | 326，992 | 0.6 | 2，784，700 | 5.5 | 51，076，132 |
| 1960 | 28，886，228 | 54.6 | 20，993，117 | 39.6 | 332，794 | 0.6 | 2，734，744 | 5.2 | 52，946，883 |
| 1961 | 31，487，898 | 55.1 | $23,175,964$ | 40.5 | 315，991 | 0.5 | 2，242，843 | 3.9 | 57，222，696 |

${ }^{1}$ Included with United States．

## 10．－Tonnage of Products Carried by Canal，classified by Commodity Group，${ }^{1}$ Navigation Season 1961

Note．－Figures include duplications where cargoes pass through two or more canals．

| Canal | Food， Feed， Beverages and Tobacco | Crude <br> Materials， <br> Inedible | Fabricated Materials | End Products， Inedible | Miscel－ laneous Freight | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | tons | tons | tons | tons | tons | tons |
| Sault Ste．Marie． | 238，380 | 128，653 | 538，679 | 948 | 234，290 | 1，140，950 |
| Welland Ship． | 11，482，196 | 15，395，092 | 3，827，338 | 167，535 | 532，209 | 31，404，370 |
| St．Lawrence River | 10，506，424 | 8，690，143 | 3，489，953 | 201，275 | 785，030 | 23，672， 825 |
| Richelieu River |  | 11，231 | 80，453 | － | 2，845 |  |
| St．Peter＇s．． | 1，232 | － 740 | － 82 | 二 | 234 | 1，460 |
| Murray Ottawa Riv | － | 740 196.200 | 82 | 777 | 二 | 196，977 |
| Rideau．． | － | － |  | － | － |  |
| Trent． | － |  | 74 | － |  | ${ }^{7} 78$ |
| St．Andrew＇s． | 1，342 | 6,031 101,507 | 759 544,647 | 二 | 12，352 | 8,286 702,397 |
| Canso． | 43，891 | 101，507 | 544，647 |  |  |  |
| Totals． | 22，273，465 | 24，529，597 | 8，481，985 | 370，535 | 1，567，114 | 57，222，696 |

[^244]
## 11．－Freight Traffic through Canadian Canals，by Direction and Origin， Navigation Season 1961

Notr．－Figures include duplications where cargoes pass through two or more canals．

| Canal | From Canadian to Canadian Ports |  | $\begin{gathered} \text { From Canadian } \\ \text { to } \\ \text { United States Ports } \end{gathered}$ |  | From United States United States Ports |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Up | Down | Up | Down | Up | Down |
|  | tons | tons | tons | tons | tons | tons |
| Sault Ste．Marie． | 390,734 $1,301,477$ | 422,572 $7,651,528$ | 6,796 $5,037,993$ | 230,240 12,228 | 21,218 335,618 | 3,932 686,155 |
| St．Lawrence River． | 2，393，556 | 6，919，521 | 4，097，196 | － | 119，318 | 71，788 |
| Richelieu River． | 58，000 | 5，201 | 22，822 | － | － | ， |
| St．Peter＇s．．． | 861 | 605 | － | － | － | － |
| Murray． | 500 | 322 | － | － | － | － |
| Ottawa River． | 777 | 196，200 | － | － | － | － |
| Rideau．． |  |  | 二 | 二 | 二 | － |
| Trent．．．．．．．． | 19 6,783 | 55 1,503 |  | 二 | 二 | － |
| Canso．． | 479，757 | 139，427 | 305 | 48，760 | － | － |
| Totals | 4，632，464 | 15，336，934 | 9，165，112 | 291，228 | 476，154 | 761，875 |
|  | From United States to Canadian Ports |  | Between other Foreign Ports and United States Ports |  | Between other Foreign Ports and Canadian Ports |  |
|  | Up | Down | Up | Down | Up | Down |
|  | tons | tons | tons | tons | tons | tons |
| Sault Ste．Marie． | 45，482 | 13，445 ${ }^{\circ}$ | 1，515 | 1，530 | 2，029 | 1，457 |
| Welland Ship． | 16，758 | 10，166，928 | 886，066 | 4，459，765 | 66，740 | 783，114 |
| St．Lawrence River | 40，110 | 2，721，188 | 875，421 | 4，454，605 | 722，636 | 1，257，486 |
| Richelieu River | － | 8，506 | － | － | － | － |
| Murray．．．． | － | － | － | － | － | － |
| Ottawa River | － | － | － | － | － | － |
| Rideau． |  | － | － | － |  |  |
| St．Andrew＇s．Canso．．．．．．． | － | － | － | － |  | $18,670$ |
|  | 9，618 | － | － | － | 5，860 |  |
| Totals． | 111，968 ${ }^{\text {12，910，067 }}$ |  | 1，763，002 ${ }^{\text {8，915，900 }}$ |  | 797，265 | 2，060，727 |
|  | Traffic by Direction |  | Origins of Cargo |  |  | Total Cargo |
|  | Up | Down | Canada | United States | Other Countries |  |
|  | tons | tons | tons | tons | tons | tons |
| Sault Ste．Marie Welland Ship <br> St．Lawrence River <br> Richelieu River <br> St．Peter＇s． <br> Murray <br> Ottawa River <br> Rideau． <br> Trent． <br> St．Andrew＇s． <br> Canso． | $\begin{array}{r} 467,774 \\ 7,64,652 \\ 8,248,237 \\ 80,822 \\ 861 \\ 500 \\ -\quad 777 \\ -\quad 19 \\ 6,783 \\ 495,540 \end{array}$ | $\begin{array}{r} 673,176 \\ 23,759,718 \\ 15,424,588 \\ 13,707 \\ 605 \\ 322 \\ 196,200 \\ -\quad 55 \\ 1,503 \\ 206,857 \end{array}$ | $\begin{array}{r} 1,051,799 \\ 14,786,340 \end{array}$ | $\begin{array}{r} 85,607 \\ 15,665,224 \end{array}$ | $\begin{array}{r} 3,544 \\ 952,806 \end{array}$ | $\begin{array}{r} 1,140,950 \\ 31,404,370 \end{array}$ |
|  |  |  |  |  |  |  |
|  |  |  | $\begin{aligned} & 14,786,340 \\ & 14,667,759 \end{aligned}$ | $15,665,224$ <br> 7，407，009 | $1,598,057$ | $\begin{aligned} & 31,404,370 \\ & 23 \quad 672,825 \end{aligned}$ |
|  |  |  | －86，023 | 8，506 | ， | 94，529 |
|  |  |  | 1，466 | － | － | 1，466 |
|  |  |  | 822 | － | － | 822 |
|  |  |  | 196，977 | － | － | 196，977 |
|  |  |  | 74 |  | 二 |  |
|  |  |  | 8，286 |  |  | 8，286 |
|  |  |  | 688，352 | 9，618 | 4，427 | 702，397 |
| Totals． | 16，945，965 | 40，276，731 | 31，487，898 | 23，175，944 | 2，558，834 | 57，222，696 |

# 12.-St. Lawrence-Great Lakes Traffic using St. Lawrence, Welland Ship and Sault Ste. Marie Canals, 1961 

Note.-Duplications eliminated wherever possible.

| Canals Used | $\begin{aligned} & \text { Up- } \\ & \text { bound } \end{aligned}$ Freight | Downbound Freight | Total |
| :---: | :---: | :---: | :---: |
|  | tons | tons | tons |
| Traffic using Canadian St. Lawrence-Great Lakes System. | 10,641,772 | 26,917,107 | 37,558,879 |
| St. Lawrence and Ottawa. | 777 | 198,027 | 198,804 |
| St. Lawrence only | 2,642,825 | 2,390,531 | 5,033,356 |
| St. Lawrence and Welland Ship | 5,578,107 | 12,779,239 | 18,357,346 |
| St. Lawrence, Welland Ship and Sault Ste. Marie | 26,082 | 57,149 | 83,231 |
| Welland Ship only ...... | 1,952,289 | 10,876,134 | 12,828,423 |
| Welland Ship and Sault Ste. Mar | 88,174 | 47,196 | 135,370 |
| Sault Ste. Marie only. | 353,518 | 568,831 | 922,349 |
| Traffic using United States Locks at Sault Ste. Marie only. . | 9,085,994 | 70,804,144 | 79,890,138 |
| Totals | 19,727,766 | 97,721,251 | 117,449,017 |

Traffic through the Sault Ste. Marie canals, Canadian and United States, has fluctuated between a high of $128,489,000$ tons reached in 1953 and a low of $70,906,000$ tons in 1959. A rise to $91,775,000$ tons in 1960 was followed by a decline to $81,038,000$ tons in 1961. The dominant traffic from a tonnage aspect is iron ore which also reached its highest point in 1953 at $98,658,000$ tons, decreasing to $47,214,000$ tons in 1959, rising to $67,939,000$ tons in 1960 and dropping again to $55,919,000$ tons in 1961. Soft coal has usually been second in volume to iron ore with a tonnage ranging from $13,301,000$ tons in 1950 to a low of $6,389,000$ in 1958. Although in the past wheat was generally third in tonnage, during the four years 1958-61 wheat remained in second place with tonnages of $7,478,000,7,496,000,7,611,000$ and $10,177,000$, respectively. Other grains usually range between 40 p.c. and 60 p.c. of the wheat tonnage but declined to 28 p.c. in 1961.

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 $3,887,000$ long tons of cargo leaving the West Coast of Canada in the year ended June 30, 1962 and passing through the Panama Canal, only 26,000 long tons were destined for Eastern Canadian ports. Similarly, of the 960,000 long tons of cargo leaving Eastern Canadian ports and passing through the Panama Canal, 16,000 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 525,621 long tons in the year ended June 30, 1962; the total from any origin arriving at Eastern Canadian ports after having passed through the Panama Canal was 584,399 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. 851-860) 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 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 1962. Duplicate transits are eliminated so that the figures show the actual total movement of goods through the St. Lawrence Seaway. On this basis, 4,816 ships carrying more than $13,245,000$ tons of cargo moved upbound through the Seaway in 1962 and 4,815 vessels carrying $26,400,000$ tons moved downbound. Ocean-going ships carried 22.9 p.c. of the total cargoes, lakers 77.0 p.c. and other craft 0.1 p.c. There is still evident an imbalance of loading, 48.6 p.c. of the gross registered tonnage of all vessels upbound being in ballast compared with only 16.6 p.c. of the vessels downbound. Of the total tonnage carried upbound in 1962, 11,119,000 tons were domestic cargo and $2,127,000$ foreign traffic; downbound, $20,241,000$ tons were domestic freight and $6,159,000$ tons were carried to and from foreign ports.
13.-Summary Statistics of St. Lawrence Seaway Traffic, 1962
(Combined traffic of the Montreal-Lake Ontario Section and the Welland Canal, with duplications eliminated)

| Item | Upbound |  |  | Downbound |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. of Transits | $\begin{aligned} & \text { Gross } \\ & \text { Tons } \end{aligned}$ | $\begin{aligned} & \text { Cargo } \\ & \text { Tons } \end{aligned}$ | No. of Transits | $\begin{aligned} & \text { Gross } \\ & \text { Tons } \end{aligned}$ | $\begin{aligned} & \text { Cargo } \\ & \text { Tons } \end{aligned}$ |
| Ocean- Type of Vessel |  |  |  |  |  |  |
| Cargo............................. | 1,114 | 6,244,689 | 2,285,194 | 1,092 | 6,102,134 | 6,050,513 |
| Tanker........................... | 69 | 581,401 | 365,876 | 68 | 571,024 | 364,769 |
| Cargo. | 2,578 | 15,662,738 | 8,883,669 | 2,568 | 16,201,688 | 18,945,150 |
| Tug and barge | 243 | 250,179 | 229,192 | 235 | 246,238 | 368,115 |
| Tanker............................ | 500 | 1,342,793 | 1,481,908 | 531 | 1,395,484 | 627,599 |
| Other craft1......................... | 312 | 127,386 | 7 | 321 | 199,241 | 43,531 |
| Totals. | 4,816 | 21,209,186 | 13,215,846 | 4,815 | 24,715,809 | 26,399,67\% |
| Type of Cargo |  |  |  |  |  |  |
| Bulk. | 1,599 | 8,206,710 | 11,231,296 | 2,885 | 17,433,691 | 23,899,806 |
| General | 488 | 2,093,430 | 11, 952,441 | 107 | 436,888 | 224,695 |
| Mixed.............................. | 482 | 2,093,941 | 1,062,109 | 622 | 2,716,029 | 2,275,176 |
|  | 134 | 40,121 |  | 134 | 23,333 | - |
| Ocean.... | 311 | 2,387,474 | - | 44 | 336,056 | - |
| Laker | 1,622 | 9,272,628 | - | 851 | 3,660,349 | 二 |
| Other. | 180 | 114,882 | - | 172 | 109,463 | - |
| Type of Traffic |  |  |  |  |  |  |
| Domestic- |  |  |  |  |  |  |
| Canada to Canada. | 1,654 | 6,212,138 | 2,832,601 | 1,837 | 8,161,351 | 7,508,571 |
| Canada to Cnited States.......... | 1,686 | 11,585, 167 | 7,922,620 | 12 | 46,763 | 21,984 |
| United States to Canada........... | 15 | 46,058 | 16,402 | 1,429 | 9,588,405 | 11,967,416 |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Import. . . . . . . . . . . . . . . . . . . | 167 | 995,763 | 495,882 | - | - | - |
| United States-.................... |  |  |  | 169 | 936,364 | 697,427 |
| Import.......................... | 860 | 4,543,916 | 1,630,977 | - 0 | - | 5, |
| . Export......................... | - |  |  | 952 | 5,435,315 | 5,461,593 |

[^245]14.-St. Lawrence Seaway Traffic classified by Type of Cargo, 1962<br>(Combined traffic of the Montreal-Lake Ontario Section and the Welland Canal, with duplications eliminated)

| Commodity | $\begin{aligned} & \text { Cargo } \\ & \text { Tons } \end{aligned}$ | P.C. of Total | Commodity | $\begin{gathered} \text { Cargo } \\ \text { Tons } \end{gathered}$ | P.C. of Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Agricultural Products. | 13,598,966 | 34.3 | Forest Products. | 325,060 | 0.8 |
| Wheat. | 6,102,667 | 15.4 | Pulpwood. | 189,514 | 0.5 |
| Corn. | 2,517,882 | 6.4 | Other forest products | 135,546 | 0.3 |
| Barley. | 1, 300, 353 | 3.3 |  |  |  |
| Soybeans | 1,147,329 | 2.9 | Manufactures and |  |  |
| Oats. | 742,866 | 1.9 | Miscellaneous. | 6,596,659 | 16.6 |
| Rye. | 402,563 | 1.0 | Fuel oil | 1,831,095 | 4.6 |
| Flaxseed. | 339,981 | 0.8 | Iron and steel, manufactured.... | 706,969 | 1.8 |
| Foybean wheat | 254,056 242,935 | 0.6 0.6 |  | 491,770 289,557 | 1.2 0.7 |
| Beans and peas | 160,759 | 0.4 | Gasoline. | 274, 838 | 0.7 |
| Malt. | 62,390 | 0.2 | Lubricating oils and grease | 231,653 | 0.6 |
| Other agricultural products...... | 325,185 | 0.8 | Food products | 212,960 | 0.5 |
|  |  |  | Sugar | 192,829 | 0.5 |
| Animal Products. | 315,752 | 0.8 | Chemicals | 160,298 | 0.4 |
| Packing house products, edible.. | 69,177 | 0.2 | Pig iron. | 159,360 | 0.4 |
| Hides, skins and pelts........... | 54,656 | 0.5 | Cement....................... | 147,976 | 0.4 0.4 |
| Other animal products............ | 191,919 |  | Syrup and molasses............... | ${ }_{135,661}^{138,471}$ | 0.4 0.3 |
|  |  |  | Iron and steel, nails, wire......... | 119,966 | 0.3 |
| Mineral Products. | 17,956,914 | 45.4 | Petroleum products, other | 106,313 | 0.3 |
| Iron ore. | 10,238,743 | 25.8 | Tar, pitch and creosote. | 100,378 | 0.3 |
| Bituminous c | 5,417,826 | 13.7 | Rubber, crude, natural, synthetic | 93,889 | 0.2 |
| Stone, ground | 1,023, 829 | 2.6 | Wood pulp. | 92,875 | 0.2 |
| Salt. | 272,872 | 0.7 | Machinery and machines. | 87,928 | 0.2 |
| Coke | 220,208 | 0.6 | Other manufactures and miscel- |  |  |
| Gravel and sand | 118,374 | 0.3 | laneous........................ | 1,021,873 | 2.6 |
| Petroleum, crude | 101,872 | 0.3 |  |  |  |
| Clay and bentonite | 93,219 | 0.2 | Package Freight. | 852,172 | 2.1 |
| Phosphate rock | 84,039 | 0.2 | Package freight-domesti | 823,165 | 2.0 |
| Sulphur.................... | 65,506 52,047 | 0.2 | Package freight-foreign. | 29,007 | 0.1 |
| Other mineral products.... | 268,379 | 0.7 | Totals | 39,645,523 | 100.0 |

On the Montreal-Lake Ontario Section, upbound freight increased 32.1 p.c. in 1962 compared with 1961 but downbound traffic decreased by 3.1 p.c. This increase in upbound traffic was accounted for almost entirely by the volume of iron ore shipped from St . Lawrence ports to Hamilton and Lake Erie. The number of transits were 275 fewer upbound and 266 fewer downbound in 1962 than in 1961, indicating a slight increase in the size of vessel using this portion of the Seaway and in the volume of cargo carried. Bulk cargo comprised 90.2 p.c. of the total traffic through the Section for 1962, the principal commodities through the St. Lawrence canals being iron ore, wheat, corn, fuel oil, bituminous coal and barley. Traffic patterns show that 30.3 p.c. of the total movement was between two Canadian ports, 36.9 p.c. moved between Canadian and United States ports and 32.2 p.c. consisted of foreign trade to and from Canada and the United States.

In the Welland Canal there were 7,615 transits in 1962 with a cargo volume of $10,843,000$ tons upbound and $24,563,000$ tons downbound; bulk cargo accounted for 94.1 p.c. of the traffic. Although many vessels pass through both the St. Lawrence and the Welland Canals 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 iron ore, grain and coal. The Welland Canal traffic was nearly $9,813,000$ cargo tons greater than that reported for the Montreal-Lake Ontario Section.

Income of the St. Lawrence Seaway Authority for 1962 amounted to $\$ 10,691,922$, comprising toll revenue of $\$ 8,914,380$ assessed for transits through the Seaway locks between Montreal and Lake Ontario, $\$ 641,261$ for transits through the Welland Canal to July 1 when tolls were suspended, together with sundry revenues (rentals, wharfage,
bridge revenue, etc.) amounting to $\$ 1,136,281$. Operating and maintenance expenses amounted to $\$ 5,911,284$ and administrative expenses were $\$ 1,759,721$, making a total of $\$ 7,671,005$, excluding an amount of $\$ 324,432$ for non-toll canals. Other financial statistics are given in Section 2, pp. 802-803

Pleasure craft locked through the Montreal-Lake Ontario Section canals numbered 335 upbound and 402 downbound in 1962, and those locked through the Welland Canal numbered 95 upbound and 127 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 nearly 200 vessels of all types, of which nearly 50 are of a larger size. Of these, 28 measure more than 1,000 tons gross. They include 10 fully strengthened icebreakers and eight lighthouse supply-and-buoy ships with 引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 has 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 Churchill, 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 icebreaker 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 Arctic. 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 extremely useful in 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 total tonnage in 1954 was approximately 8,000 and the annual figure is now in the vicinity of 100,000 tons.

Aids to Navigation.-Included under aids to navigation are the lighthouses and the whole system of marine danger signals on the East and West Coasts of Canada, on Hudson Bay and Strait, the St. Lawrence River and Gulf, the Mackenzie River and Arctic passages, and the inland rivers and lakes-a very extensive system designed to provide safe navigation in all Canadian waters. In addition, a pilotage service is maintained in waters where navigation is difficult; this service is described at p. 799. A further aid to safe navigation is found in the chains of radio signal and direction-finding stations described in the 1962 Year Book pp. 848-849. Lists of aids to navigation, with the exception of very minor ones, are published by the Department of Transport.

## 15.-Marine Danger Signals Maintained in Canada, Years Ended Mar. 31, 1961 and 1962

Note.-In addition to the aids to navigation listed, approximately 10,400 unlighted buoys, balises, dolphins and beacons are maintained. Lists of marine danger signals maintained from 1929 are given in the corresponding table of previous Year Books beginning with the 1941 edition.

| Type of Signal | 1961 | 1962 | Type of Signal | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. |  | No. | No. |
| Lights.. | 3,054 | 3,196 | Mechanical bells and gongs........... | 18 | 17 |
| Lightships. | 3 | 3 | Hand fog horns and bells............ | 85 | 84 |
| Light-keepers. | 903 | 953 | Lighted and combination lighted whistling and bell buoys | 1,324 | 1,384 |
| Fog whistles and sirens. | 45 | 46 | Unlighted bell and whistling buoys... | 136 | 121 |
| Diaphones and tyfons.... | 270 | 277 | Explosive signals.................... | 3 | 4 |

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 half completed. This section com-
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 December. 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.

## 16.-Seasons of Open Navigation on the St. Lawrence Ship Channel, 1953-62

Nore.-Figures from 1882 are given in the corresponding table of previous Year Books beginning with the 1934-35 edition.

| Year | Channel Open, Quebec to Montreal ${ }^{1}$ | First <br> Arrival from Sea, Montreal Harbour | Last Departure for Sea, Montreal Harbour | Year | Channel Open, Quebec to Montreal ${ }^{1}$ | First <br> Arrival from Sea, Montreal Harbour | Last Departure for Sea, Montreal Harbour |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1953. | Mar. 30 | Apr. 2 | Dec. 21 | 1958. | Apr. 6 | Mar. 30 | Dec. 23 |
| 1954. | Apr. 15 | Mar. 30 | " 15 | 1959 | " 13 | Apr. 1 | " 20 |
| 1955. | 17 | Apr. 5 | " 16 | 1960. | " 14 | Mar. 21 | " 16 |
| 1956. | " 13 | 2 | " 17 | 1961. | " 11 | " 27 | " 22 |
| 1957. | " 8 | 4 | " 18 | 1962 | " 15 | " 12 | " 19 |

${ }^{1}$ "Channel Open" means the route can be navigated although there may be floating ice in the river.
Steamship Inspection.-The Steamship Inspection Service was established by authority of the Canada Shipping Act. Its functions include the approval of design of the 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; and the certification of marine engineers. The Board also looks after the interests of the Federal Government in schools for marine engineers.

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 1,743 vessels of Canadian ownership or registry and 52 vessels registered or owned elsewhere were inspected during the year ended Mar. 31, 1962 compared with 1,668 and 28 vessels, respectively, in the previous fiscal year.

Pilotage.-Pilotage service functions under the provisions of Part VI and Part VIa 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 23 pilotage districts, in 10 of which the Minister of Transport is the pilotage authority (see Table 17); 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.

## 17.-Pilotage Service, by Pilotage District, 1961 and 1962

| District | 1961 |  | 1962 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Pilotage Trips | Net Registered Tonnage | Pilotage Trips | $\begin{gathered} \text { Net } \\ \text { Registered } \\ \text { Tonnage } \end{gathered}$ |
|  | No. |  | No. |  |
| Bras d'Or Lakes, N.S. | 224 | 595,240 | 230 | 774,415 |
| Sydney, N.S. | 2,108 | 6,213,612 | 1,873 | 5,711,694 |
| Halifax, N.S. | 3,374 | 12,630,448 | 3,591 | 14, 370,845 |
| Saint John, N.B. | 1,576 | $6,134,417$ 31834,229 | 1,499 7,538 | 5,759,618 |
| Montreal, Que | 10,535 | 38,944,901 | 9,067 | 40,466,625 |
| Cornwall, Ont. | 2,606 | 8,202,378 | 2,646 | 8,800,086 |
| Kingston, Ont. | 2,806 | 8,976,394 | 3,193 | 20,272,318 |
| Churchill, Man. | 139 | 260,996 | 143 | 304,140 |
| British Columbia | 6,370 | 30,952,650 | 8,669 | 32,217,850 |
| Totals. | 37,142 | 144,745,265 | 38,449 | 161,917,582 |

In addition there are known to be five districts in Newfoundland under the local pilotage authority. These districts continued to be administered under Newfoundland statutes after union with Canada (Mar. 31, 1949). Part VI of the Canada Shipping Act with respect to pilotage has not been proclaimed in force in Newfoundland.

## Section 2.-Financial Statistics of Waterways

The principal statistics available on the cost of facilities for water-borne traffic 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. Capital expenditure by municipalities and private capital expenditure are confined almost entirely to terminal or dockage facilities. On the other hand, most of the investment in shipping has come from private sources. No figures are available regarding private investment in shipping except those appearing in the reports of the operating companies that cover only a portion of the field. There are no statistics showing the revenue of ship operators from passenger and freight traffic.

Capital Expenditure.-The only figures available of federal capital expenditure on Canadian waterways are those 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. It must be realized that such expenditure cannot be regarded as an accurate indication of the present worth of the undertakings represented. The cost of building canals and other waterways and permanent works to facilitate water transportation in Canada is represented in such reports at their original book values, no deductions having been made from the cumulative totals for depreciation from year to year or for abandonment of works that have been superseded, such as, for example, the first Welland canals and the now flooded St. Lawrence River canals. To this extent, such figures are an over-statement of the present value of the works in use. The figures are further limited by the fact that they do not include the cost of maintenance and improvements or the operation of these works, such charges having been made to the consolidated deficit account as annual expenditure and not to capital account. Thus, such capital expenditure on waterways is not included in this publication, with the exception of that made by the National Harbours Board on facilities under its jurisdiction. Capital values of the fixed assets administered by the Board are shown as at Dec. 31, 1961 and 1962 in Table 18. These figures include all buildings, machinery and durable plant improvements and have been subject to deductions for depreciation and the scrapping or abandonment of plant and therefore represent a fair approximation of the present value of the properties.

## 18.-Capital Values of Fixed Assets Administered by the National Harbours Board, as at Dec. 31, 1961 and 1962

Nore.-Compiled from the annual reports of the National Harbours Board.

| Item | 1961 | 1962 | Item | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ |  | \$ | \$ |
| Harbour dredging. . . . . . . . . . | 21,143,320 | 22,479,039 | Harbour buildings, service |  |  |
| Land and land improvements.. | 16,593,098 | 16,834,978 | plants and equipment...... | 10,271,342 | 10,427,200 |
| Wharves and piers............ | 134,839,648 | 145,980,838 | Floating and shore equipment | 4,381,875 | 5,263,366 |
| Permanent sheds.. | 37,676,472 | 38,527,859 | Jacques Cartier Bridge....... | 21,943,943 | 22,278,639 |
| Railway systems............. | 6,707,355 | 6,639,753 | Works under construction. | 36,749,078 | $31,872,634$ $13,197,964$ |
| Grain elevator systems........ | 71,367,378 | 71,997,900 |  |  |  |
| Cold storage systems. . . . . . . . | 6,646,778 | 6,714,210 | Totals | 368,320,287 | 392,214,380 |

The total amount advanced by the Federal Government to the National Harbours Board for capital expenditure during 1961 was $\$ 19,001,935$, distributed as follows: Saint John, N.B., $\$ 838,585$; Quebec, Que., \$2,144,361; Montreal, Que., \$13,797,462; and Churchill, Man., $\$ 2,221,527$. The total for 1962 was $\$ 19,709,613$, distributed as follows: Saint John, N.B., \$3,344,844; Quebec, Que., \$123,341; Montreal, Que., \$8,757,431; Churchill, Man., \$1,838,674; and Champlain Bridge (Montreal), \$5,645,323.

Waterways Expenditure and Revenue on Consolidated Fund Account.Expenditure under this heading (Tables 19 to 21) 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 22.

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 24. Operating revenue and expenditure of facilities administered by the National Harbours Board are shown separately in Table 23.
19.-Department of Transport Expenditures on Marine Service, charged to Consolidated Deficit Account, Years Ended Mar. 31, 1961 and 1962

| Service | 1961 | 1962 | Service | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Administration, including agencies. | ¢ ${ }^{\text {¢ }}$ | ¢ | Marine Regulations BranchSteamship Inspection Divi sion. | \$ $1,084,067$ | 1,115,769 |
| Marine Works Branch- <br> Aids to Navigation DivisionAdministration, operation |  |  | Nautical and Pilotage <br> Division- <br> Nautical Services. <br> Pilotage Services- | $1,084,067$ 553,754 | $1,115,769$ 471,409 |
| and maintenance. Construction. | 7,497,814 2,630, | $6,660,497$ $4,513,003$ | Pilotage Services- |  |  |
| River St. Lawrence Ship ${ }^{\text {Channel Division }}$ |  |  | and maintenance........ | 1,563,174 | 1,624,693 |
| Channel Division- |  |  | Construction............. | 134,676 | 480,456 |
| daministration, operation and maintenance. | 1,404,605 | 1,833,451 | Pensions to former pilots. . | 1,346 | 1,200 |
| Canals Division- | 1,404,605 | 1,833,451 | Marine reporting service. . | 156,537 | 136,472 |
| and maintenance.......... | 2,259,712 | 2,311,914 | rine Operations Branch- |  |  |
| Construction................. | -925,585 | 1,200,978 | Administration, operation |  |  |
| Operating deficit and capital requirements of canals and works entrusted |  |  | and maintenance | 18,284, 939 | 18,973,407 |
| Authority | 2,315,389 | 2,590,573 | Totals. | 39,810,401 | 43,033,231 |

## 20.-Department of Public Works Expenditure on Waterways (Harbours, Rivers, Roads and Bridges) charged to Consolidated Fund Account, Years Ended Mar. 31, 1961 and 1962

Note.-Compiled from the annual reports of the Department concerned by the Comptroller of the Treasury, Department of Finance. Excludes expenditures on harbours administered by the National Harbours Board as shown in Table 23.

| Year and Province or Territory | Dredging ${ }^{1}$ | Construction | Improvements and Repairs | Staff and Sundries | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | \$ | \$ |
| 1961 |  |  |  |  |  |
| Newfoundland. | 556,715 | 6,313,869 | 377,690 | 98,593 | 7,346,867 |
| Prince Edward Island | 321,991 | 656,797 | 142, 808 | 376,940 | 1,498,536 |
| Nova Scotia. | 445, 253 | 3,569,509 | 516,905 | 90,506 | 4,622,173 |
| New Brunswick | 842,462 | 2,644,040 | 225,101 | 23,932 | 3,735,535 |
| Quebec. | 726,432 | 5,867, 025 | 1,151,160 | 298, 834 | 8,043,451 |
| Ontario | 757,919 | 8,122,588 | 445,774 | 63,372 | 9,389,653 |
| Manitoba. | 212,925 | 198,373 | 74,653 | 87,240 | 573,191 |
| Saskatchewan. |  |  | 3,557 |  | 3,557 |
| Alberta. | 193, 681 | 28,983 | 3,465 | 5,774 | 231,903 |
| British Columbia. | 1,307,343 | 2,224,530 | 462,218 |  | 6,214,182 |
| Yukon and Northwest Territories. | -86,253 | -82,607 | 10,703 | -83,564 | 263,127 |
| Canada, 1961. | 5,450,974 | 29,708,321 | 3,414,034 | 3,348,846 | 41,922,175 |
|  |  |  |  |  |  |
| Newfoundland. . . . . . | 474,105 | 6,283,743 | 328,901 | 460,220 | 7,546,969 |
| Prince Edward Island. | 408,758 | 570,964 | 185,043 | 77, 853 | 1,242,618 |
| Nova Scotia. | 651,682 | 2,471, 847 | 535,753 | 6,576 | 3,665, 858 |
| New Brunswick | 877,599 | 1,944,150 | 301,591 | 114,005 | 3,237,345 |
| Quebec.... | 770,971 | 4,080,036 | 948,519 | 380,161 | 6,179,687 |
| Ontario. | 696, 857 | 11,933,064 | 595,506 | 144,457 | 13, 369,884 |
| Manitoba | 215,966 | 1,075,715 | 46,362 | 90,008 | 1,428,051 |
| Saskatchewan |  | 21,765 | 2,229 |  | 23,994 |
| Alberta......... | 295,729 $1,226,647$ | 17,635 $1,228,413$ | 33,330 482,239 |  |  |
| British Columbia............... | 1,226,647 | $1,228,413$ 70,182 | 482,239 19,282 | $1,262,314$ 1,423 | $4,199,613$ 90,887 |
| Canada, 1962. | 5,618,314 | 29,697,514 | 3,478,755 | 2,809,987 | 41,604,570 |

${ }^{1}$ Includes expenditures for dredging plants.

## 21.-St. Lawrence Seaway Authority Expenditures charged to Consolidated Deficit Account, 1961 and 1962

| Item | 1961 | 1962 | Item | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \% | \$ |  | \$ | \$ |
| Administration................ | 1,616,737 | 1,759,721 | Maintenance Expenses-concluded |  |  |
| Operating Expenses- |  |  | Canal lands and roads......... | 152,253 | 166,116 |
| Channels, canals and locks... <br> Bridges. | $1,684,172$ 511,041 | $1,611,288$ 512,161 | Power transmission lines and |  |  |
| Grants in lieu of municipal |  |  | canal lighting | 85,669 | 84,288 |
| taxes. | 353,142 | 360,374 | Other......................... | 94,757 | 61,027 |
| Miscellaneous. | 54,243 | 107,744 |  |  |  |
| Maintenance Expenses- |  |  | Operating and maintenance super- vision............................ | 1,071,181 | 1,232,498 |
| Channels, canals and locks... | 768,373 | 1, 149, 715 |  |  |  |
| Bridges and tunnel <br> Dredging and aids to navigation. | 527,088 99,477 | $\begin{array}{r} 564,159 \\ 61,919 \end{array}$ | Totals.................. | 7,018,133 | 7,671,005 |

## 22.-Federal Government Revenue in connection with Waterways, Years Ended Mar. 31, 1961 and 1962

Note.-Compiled from annual reports of the Department of Transport, the Public Accounts and the annual reports of the St. Lawrence Seaway Authority.

| Department and Item | 1961 | 1962 | Department and Item | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Department of Transport | 5 | \$ | Department of Public Works | \$ | \$ |
| Marine Services. | 8,188,380 | 5,172,578 | Darnings of Dry Docks | 351,094 | 389,499 |
| Canals. | 312,010 | 357,952 | Champlain Dock, Lauzon | 139,223 | 158,763 |
| Fines and forfeit | 11,053 | 3,660 | Lorne Dock, Lauzon. . | 36,638 | 58,458 |
| Steamship inspection | 161,549 | 168,659 | Esquimalt new dock | 172,912 | 166,926 |
| Wharf revenue.... | 715,150 | 778,477 | Selkirk repair slip... | 2,321 | 5,352 |
| Harbour dues. | 173,892 | 203,321 |  |  |  |
| Measuring surveyor's fees. | 1,210 | 2,344 |  |  |  |
| Examinations-masters' and mates' fees. | 8,935 | 14,010 | Works and Plants Leased....... | 91,540 12,100 | $\mathbf{3 5 , 9 0 8}$ 12,100 |
| Pilots' licence fees (pilotage).. | 386 | 360 | Ferry privileges. | 336 | 681 |
| Pilotage fees.. | 575,382 | 650,063 | Dredges and plants........... | 79,104 | 23,127 |
| Pilot boat fees | 237,930 | 250,637 |  |  |  |
| Shipping fees............ | 5,76,867 | 15,169 |  |  |  |
| Marine steamer earnings | 5,732,976 | 2,373,247 | Rents from water lots, etc...... | 74,664 | 75,640 |
| Signal station dues...... | 1,352 |  | Refunds of expenditure reported in previous years. | 1,180,263 | 449,873 |
| lighthouse sites... | 39,608 | 42,751 | Sundry receipts, test borings, etc. | 210 | 850 |
| River St. Lawrence Ship Channel Service |  | 15,665 | Totals, Department of |  |  |
| Sale of land, buildings, etc.. | 7,434 | 70,993 | Public Works. | 1,697,771 | 951,770 |
| Merchant seamen's identity certificates. | 1,035 |  |  |  |  |
| Miscellaneous............ | 61,180 | 111,898 |  |  |  |
| Refunds previous year's expenditures. $\qquad$ | 62,554 | 40,546 | St. Lawrence Seaway Authority |  |  |
| Port Warden fees.. | 67,877 | 72,019 |  |  |  |
| Board of Transport |  |  | Tolls assessed. | 9,548,303 | 9,555,641 |
| Commissioners... | 2,322 | 2,518 | Rentals. | 593,699 | 612,598 |
| Atr Transport Board | 36 | - | Miscellaneous | 154,704 | 346,015 |
| Totals, Department of Transport. | 8,190,738 | 5,175,096 | Totals, St. Lawrence Seaway Authority. | 10,447,256 | 10,691,922 |

23.-Operating Revenue and Expenditure of Harbours, Elevators and Bridges under the National Harbours Board, 1961 and 1962

| Harbour and Year | Operating Revenue | Operating Expenditure | Net Operating Income | Harbour and Year | Operating Revenue | Operating Expenditure | Net <br> Operating <br> Income |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | \$ | \$ |  | \$ | \$ | \$ |
|  | $\begin{array}{r} 2,131,170 \\ 2,139,617 \end{array}$ | $\begin{aligned} & 1,995,993 \\ & 2,046,045 \end{aligned}$ | $\begin{array}{r} 135,177 \\ 93,572 \end{array}$ | Jacques Cartier Bridge |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  | 1961....... | 3,497,975 | 777,422 | 2,720,553 |
| Saint John-1961....... |  |  |  | 1962 | 1,493,654 | 486,324 | 1,007,330 |
|  | $\begin{array}{r} 1,000,072 \\ 928,052 \end{array}$ | $\begin{aligned} & 933,603 \\ & 940,511 \end{aligned}$ | $\begin{array}{r} 66,469 \\ -12,459 \end{array}$ | Champlain Bridge (Montreal)$1962^{2}$. |  |  |  |
| 1962. |  |  |  |  |  |  |  |
| Chiconti |  |  |  |  | 162,574 | 181,833 | -19,259 |
| 1961. | $\begin{aligned} & 130,844 \\ & 132,103 \end{aligned}$ | $\begin{aligned} & 53,656 \\ & 33,754 \end{aligned}$ | $\begin{aligned} & 77,188 \\ & 98,349 \end{aligned}$ | Prescott Elevator1961 |  |  |  |
| 1962. |  |  |  |  | 1,009,170 | 501,760 475,313 | 507,410 |
| Quebec1961 1962 |  | $\begin{aligned} & 1,885,188 \\ & 2,058,405 \end{aligned}$ | $\begin{aligned} & 798,248 \\ & 517,044 \end{aligned}$ | Port Colborne Elevator- |  |  |  |
|  | $\begin{array}{r} 2,683,436 \\ 2,575,449 \end{array}$ |  |  |  |  |  |  |
|  |  |  |  | 1961........ | 549,814 | 309,359 | 240,455 |
|  |  |  |  | 1962................ | 424,357 | 252,474 | 171,883 |
| Trols Rivières$1961 . . . . . . . . . . . . . ~$ | $\begin{aligned} & 691,834 \\ & 699,366 \end{aligned}$ | $\begin{aligned} & 108,399 \\ & 118,022 \end{aligned}$ | $\begin{aligned} & 583,435 \\ & 581,344 \end{aligned}$ | Churchill- |  |  |  |
|  |  |  |  | 1961. | 1,190,550 | 1,144,635 | 45,915 |
|  |  |  |  | 1962. | 1,419,221 | 1,126,763 | 292,458 |
| $\begin{gathered} \text { Montreal_- } \\ 1961 \ldots \ldots . . \\ 1962 \ldots \ldots \end{gathered}$ | $\begin{aligned} & 11,573,819 \\ & 11,285,893 \end{aligned}$ | $\begin{aligned} & 7,667,979 \\ & 7,971,152 \end{aligned}$ | $\begin{aligned} & 3,905,840 \\ & 3,314,741 \end{aligned}$ |  |  |  |  |
|  |  |  |  |  | 4,559,611 | 2,665,473 | 1,894,138 |
|  |  |  |  |  | 4,529,828 | 2,661,899 | 1,867,929 |

[^246]Shipping Subsidies.-Table 24 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.
24.-Steamship Subventions, Years Ended Mar. 31, 1962 and 1963


## PART V.-CIVIL AIR TRANSPORT

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. 753). 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.

## Section 1.-Air Services

Air transport services may be grouped into two broad classes-Scheduled Services and Non-scheduled Services. Services in the first group are operated by air carriers who 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 who offer public transportation of persons, mails and/or goods by aircraft 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 who offer public transportation of 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 who offer public transportation of persons and/or goods by aircraft from a designated base, at a toll per mile or per hour for the charter 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 who 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 flying 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 flying training, recreational flying, aerial photography and survey, aerial pest control, aerial advertising, aerial patrol and inspection, etc.

Current operations of the two major airlines forming the nucleus of Canada's freight and passenger air service are outlined below.

Trans-Canada Air Lines.-In 1962, its 25th year of operation, TCA carried a record $3,865,408$ passengers, 4 p.c. more than in the previous year, and flew $2,659,578,000$ revenue passenger-miles with an average load factor of 60 p.c. Ton-miles of revenue commodity traffic, including air express, totalled $29,827,000$ and ton-miles of air mail totalled $12,862,000$. TCA celebrated its silver anniversary by flying one of its first aircraft, a ten-passenger Lockheed 10A, across the country from Halifax to Vancouver. This aircraft then flew the 122 -mile route between Vancouver and Seattle on Sept. 1, 1962, 25 years to the day after TCA inaugurated its first passenger service over the same route.

During the busy summer months of 1962 , the airline offered more than 3,000 seats in each direction on 24 weekly return flights across the North Atlantic, and more than 1,000 seats daily in each direction across Canada. DC-8 jets were operated across the North Atlantic to Britain and Continental Europe and during the year were introduced on all services between Canada and the Caribbean. At the year end, TCA was serving 58 communities across Canada, in the United States, in Britain and Continental Europe and in the Caribbean over 35,426 miles of air routes.

TCA's fleet at the end of the year consisted of 11 DC-8's, 22 turbo-prop Vickers Vanguards and 48 turbo-prop Vickers Viscounts, plus two DC-3's. Four Douglas DC-8F's and an additional Vanguard were scheduled for delivery early in 1963 and a fifth DC-8F was on order for delivery in 1964.
1.-Operating Statistics of Trans-Canada Air Lines, 1953-62

| Year | Traffic |  |  |  | Operating Revenue |  |  | Operating <br> Expenditure | Operating Surplus |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Revenue Passenger ${ }^{1}$ |  | Revenue Commodity ${ }^{2}$ | Mail | Passenger | Freight and Mail | Total ${ }^{3}$ |  |  |
|  | No. | $\begin{gathered} \text { '000 } \\ \text { passenger- } \end{gathered}$ miles | $\begin{aligned} & \text { '000 } \\ & \text { ton- } \\ & \text { miles } \end{aligned}$ | $\begin{aligned} & \text { '000 } \\ & \text { ton- } \\ & \text { miles } \end{aligned}$ | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| 1953. | 1,307,810 | 759,320 | 7,947 | 5,374 | 48,243 | 11,898 | 62,237 | 61,434 | +803 |
| 1954 | 1, 438, 349 | 852,476 | 10,193 | 6,942 | 53,124 | 13,077 | 68,764 | 67,732 | +1,033 |
| 1955 | 1,682,195 | 969,392 | 12,175 | 7,704 | 61,105 | 14,314 | 77,428 | 76,771 | +657 |
| 1956 | 2,072,912 | 1,191,784 | 14,476 | 8,613 | 74,479 | 15,639 | 91,306 104 | 89,197 | $+2,109$ +8815 |
| 1957. | 2,392,713 | 1,385,777 | 15,478 | 9,855 | 86,524 | 16,055 | 104,996 | 96,680 | +8,315 |
| 1958. | 2,785,523 | 1,625,689 | 15,395 | 10,386 | 101,553 | 17,407 | 120,555 | 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 | 165,436 | 143, 370 | +22,066 |
| 1962. | 3,865,408 | 2,659,578 | 29,827 | 12,862 | 158,792 | 21,914 | 183,473 | 152,821 | +30,652 |

i Includes non-scheduled service.
${ }^{2}$ Includes excess baggage and express.
${ }^{3}$ Includes other revenue.

Canadian Pacific Air Lines Limited.-Canadian Pacific Air Lines operates a 45,287 -mile route pattern linking five continents as well as major cities in Canada. This pattern comprises 6,900 domestic route miles, including 2,450 miles on Canadian mainline service.

In 1962, CPA carried 461,658 passengers, a greater number than in any other year since the company's inception in 1942. The increase in passenger load, on both domestic and international routes, amounted to 18.6 p.c. over 1961. The revenue passenger-miles showed a 32.8 -p.c. advance to $799,111,166$, indicating greater milage travelled per passenger.

CPA's international routes, 37,600 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, Calgary and Edmonton to Amsterdam via the Polar Route; and across the Atlantic from Montreal to Portugal, Spain and Italy. A South American network serves Mexico City, Lima, Santiago and Buenos Aires. Three services link Mexico with Windsor, Toronto and Montreal in Eastern Canada and Vancouver in the West. In Canada, CPA operates a mainline transcontinental service linking Vancouver, Winnipeg, Toronto and Montreal and a domestic network of north-south routes in British Columbia, Alberta and the Yukon Territory.

CPA's fleet of aircraft consists of five Douglas Super DC-8's, five Bristol Britannias, three Douglas DC-6B's, one Douglas DC-6AB, five Convair 240's and three Douglas DC-3's. The international routes are served by the Super DC-8's and the Bristol Britannias and the domestic routes are served by the other aircraft. The transcontinental route is served by Super DC-8's.

Independent Airlines.-In addition to the two major Canadian air carriers-Trans-Canada Air Lines and Canadian Pacific Air Lines Limited-there are four domestic air carriers licensed to operate scheduled commercial air services in Canada, namely, Eastern Provincial Airways Limited, Gander, Nfld.; Quebecair, Inc., Rimouski, Que.; TransAir Limited, Winnipeg, Man.; and Pacific Western Airlines Limited, Vancouver, B.C.

Licensed Canadian air carriers operating in Canada as at Mar. 31, 1962 held valid operating certificates covering 43 scheduled, 157 flying training, and 1,244 other non-scheduled 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 flying, aerial photography and surveying, aerial pest control, aerial advertising and aerial patrol.

Eastern Provincial Airways Limited.-This company (successor to Maritime Central Airways-purchased in 1963) operates throughout the Atlantic Provinces, eastern Quebec, Labrador and Greenland. It serves Charlottetown and Summerside in Prince Edward Island; Moncton and Dalhousie in New Brunswick; New Glasgow and Halifax in Nova Scotia; Stephenville, Corner Brook, Gander and St. John's in Newfoundland; Goose Bay and Saglek in Labrador; Sept Îles and the Magdalen Islands in Quebec; and the French Islands of St. Pierre-Miquelon.

The Airways fleet consists of four H.P. Dart Heralds, one DC-4, two C-46's, five DC-3's, five PBY Canso's, four Cessna 185's, five DH Beavers, two S-55 helicopters, two Super Cub's and one Beechcraft 18. 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, a privately owned commercial airline with headquarters at Rimouski, serves various points in the Province of Quebec including Montreal, Quebec, Saguenay, Rivière du Loup, Rimouski, Mont Joli, Sept Iles, Wabush, Schefferville, Gagnon, Baie Comeau, Forestville, Manicouagan and Murray Bay. No point served is more than five flying hours from Montreal.

The company began operations in 1946 under the name of Rimouski Aviation Syndicate and was incorporated under the name of Rimouski Airlines in 1947. At the beginning of 1954, the newly created Rimouski Airlines bought out Gulf Aviation and formed Quebecair. Since then, passenger service has multiplied six times, air mail carried fourteen times and freight carried sixteen times. The number of passengers flown in 1962 was 102,462 and the amount of freight carried totalled $2,137,264 \mathrm{lb}$.

The Quebecair fleet consists of four DC-3's, three F-27's, and one C-46 cargo aircraft.
TransAir Limited.-TransAir operates scheduled, charter and sportsmen's flights in Manitoba, Saskatchewan, Ontario and the Northwest Territories. Thirty-two aircraft are in service from headquarters in Winnipeg and a major base in Churchill. Scheduled flights also originate from Pickle Lake and Sioux Lookout in Ontario and Lac du Bonnet, Norway House and Lynn Lake in Manitoba. The airline has scheduled Viscount, DC-4 and DC-3 services over 4,603 unduplicated miles. Mainline stops are made at Winnipeg, Brandon, Dauphin, The Pas, Flin Flon, Lynn Lake, Thompson and Churchill in Manitoba; Red Lake, Winisk and Ottawa in Ontario; Montreal in Quebec; Yorkton, Regina, Saskatoon, Prince Albert and Swift Current in Saskatchewan; and Medicine Hat and Calgary in Alberta. TransAir also has regular flights between Churchill and Rankin Inlet, Baker Lake and Coral Harbour in the Northwest Territories. From its Winnipeg and Churchill bases, TransAir operates the vertical re-supply flights to the four main sites in the Canadian sector of the Distant Early Warning Line. The company's head office is at the Winnipeg International Airport.

Pacific Western Airlines Limited.-Pacific Western Airlines Limited, with head office at Vancouver International Airport, is one of the largest independent air carriers in Canada. Total route miles in the system is close to 7,200 and services operated include scheduled mainline, local regular unit toll and charter flights in Saskatchewan, Alberta, Yukon Territory, the Northwest Territories including the Arctic islands, and British Columbia.

Regularly scheduled mainline services are operated by Pacific Western northbound from Edmonton to Dawson Creek, Peace River, McMurray, Uranium City, Fort Smith, Pine Point, Fort Resolution, Hay River, Yellowknife, Fort Simpson, Wrigley, Norman Wells and Inuvik. Regular local services are flown from Yellowknife to Cambridge Bay and Resolute Bay; and from Inuvik to Aklavik to Fort McPherson to Arctic Red River. Local services also originate from Norman Wells to Fort Good Hope, Fort Norman, Wrigley and Fort Simpson; and from Yellowknife to Rocher River, Port Radium, Coppermine and Bathurst. The first no-reservations-required airbus service in Canada operates daily between Edmonton and Calgary.

On the Pacific Coast, mainline services are operated from Vancouver to Comox, Powell River, Campbell River, 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, charter services are operated out of Vancouver, Nelson, Kamloops, Prince George, Terrace and Prince Rupert; in the Northern Division from Edmonton, Peace River, Fort Smith, Hay River, Yellowknife, Inuvik and Cambridge Bay.

Aircraft operated by Pacific Western number 48 and range from DC-6B's, DC-4's, Super 46's and DC-3's on mainline services, to Otters, Beavers, Grumman Goose and Cessnas on charter and freight flights. Revenue passengers carried in 1962 totalled 146,939, freight and express carried amounted to $31,710,643 \mathrm{lb}$. and miles flown numbered 3,732,719.

Commonwealth and Foreign Scheduled Commercial Air Services.-At the end of 1962, there were 20 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, Canada, and Mexico City, Mexico.
Air France (Compagnie Nationale Air France), operating between Paris and other points in Metropolitan France, Montreal, Canada, and Chicago, U.S.A., and beyond.
Alitalia (Italian International Airlines), operating between Rome and Milan, Italy, Montreal, Canada, and Chicago, Ill., U.S.A.
American Airlines, Inc., operating between Toronto, Canada, and New York/Newark, U.S.A., direct or via Buffalo, U.S.A.
British Overseas Airways Corp., operating between London and Manchester, England, Prestwick, Scotland, Gander, Montreal and Toronto, Canada, and between London, England, Montreal, Canada, Bermuda, Barbados, Trinidad, Bahamas, Jamaica and Antigua.
Deutsche Lufthansa Akiengesellschaft (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.

KLM Royal Dutch Airlines, operating between Montreal, Canada, and Amsterdam, the 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, Hancock/Houghton, U.S.A.
Northeast Airlines, Inc., operating between Montreal, Canada, and Boston, U.S.A., via Concord, Montpelier-Barre, Burlington, 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, Edmonton, Canada, Anchorage, Alaska, and beyond.
Pan American World Airways Inc., operating between Seattle, Wash., and Fairbanks, Alaska, U.S.A., with points of call at Juneau and Annette Island, Alaska, U.S.A. and Whitehorse, Y.T., Canada; and between points in the United States, Gander, Nfld., Canada, and points in Britain.

Qantas Empire Airways Ltd., operating between Sydney, Australia, San Francisco, U.S.A., and Vancouver, Canada.
Sabena Belgian World Airlines, operating between Brussels, Belgium, Shannon, Ireland, and Montreal, Canada.
Seaboard and Western Airlines, Inc., operating between points in the United States, Gander, Canada, and points in Europe.
Swiss Air Transport Company Ltd. (Swissair), operating between points in Switzerland, Montreal, Canada, and points in the U.S.A.
United Air Lines, Inc., operating between Vancouver, Canada, and Seattle, U.S.A.
West Coast Airlines, Inc., operating between Calgary, Canada, and Spokane, U.S.A.
Western Air Lines, Inc., operating between Calgary, Canada, and Great Falls, U.S.A.
Flying Schools and Clubs.-At the end of 1962, 80 commercial flying schools were registered as members of the Air Transport Association of Canada. During the year, these schools instructed and graduated 1,328 students as private pilots and 74 students as commercial pilots.

Membership in the 39 flying clubs connected with the Royal Canadian Flying Clubs Association numbered 9,646 at the end of 1962. During the year these clubs instructed and graduated 1,141 students as private pilots and 52 students as commercial pilots.

Weather Services.-Weather services are provided by the Meteorological Branch, Department of Transport, to meet the demands 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.

There are 52 forecast offices in Canada, one on shipboard and four in Europe. Forecast offices are linked by 55,300 miles of teletype and radio-teletype circuits, and a national facsimile system 14,600 miles long is used for the distribution of meteorological information in chart form. As of Jan. 1, 1963 the Branch maintained 266 surface synoptic and hourly weather reporting stations, a network of 31 radiosonde stations including five in the Arctic operated jointly with the United States, 59 stations recording upper winds, and 1,878 climatological stations. One Ocean Weather Station in the Pacific, 1,000 miles west of Vancouver, is maintained under International Agreement. (See also pp. 55-56.)

Ground Facilities.-Aircraft landing areas in Canada are classified in Table 2 by administrative agency, as licensed or unlicensed land facilities or seaplane bases, and military airfields. The unlicensed aerodromes and seaplane bases shown are kept in varying degrees of readiness but lack one or more of the facilities usually found in licensed airports, such as lights, passenger accommodation, ground/air communication, etc. Associated with these facilities is a network of radio aids to navigation designed to facilitate en route navigation and safe landings under low visibility conditions.

As at April 1963, the Department of Transport operated 77 low frequency radio ranges and 36 VHF omni-directional ranges ( 11 additional ranges were under construction). Instrument landing systems in operation totalled 39 (one of which was scheduled for decommissioning and three additional systems were under construction) and there were 183 non-directional radio beacons in operation (an additional 19 were under construction). These facilities are regularly calibrated and flight-checked by civil aviation inspectors.

## 2．－Aircraft Landing Areas classified by Type of Facility and Operator，by Province，

 as at Apr．1， 1963| Type of Facility and Operator | Nfid． | P．E．I． | N．S． | N．B． | Que． | Ont． | Man． | Sask． | 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．．．． Municipal | 1 | 1 | 2 | 1 | 178 | 21 39 | $\stackrel{2}{5}$ | 4 14 | 5 18 | 18 | 12 | 5 2 | 85 116 |
| Private．．． | 3 | 1 | － | 1 | 21 | 21 | 5 | 13 | 14 | 4 | － | 1 | 84 |
| Unlicensed Aerodromes－ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Department of Transport．．．． | 1 | － | － | － | ${ }_{1}^{2}$ | 8 | 1 | 3 | － | 14 | 5 | 4 | 32 |
| Municipal．．．．．．．．．．．．．．．．．．．． | 3 | － | 2 | 2 | 11 | 3 | 2 | 33 | 9 | 14 | 8 | 3 | 82 |
| Private．．．．．．．．．．．．．．．．．．．．．． | 4 | 1 | 1 | 13 | 27 | 20 | 32 | 106 | 26 | 58 | 8 |  | 296 |
| Abandoned or unknown．．．．． | 4 | － | 1 | － | 6 | 5 | 1 | 5 | 4 | 45 | 1 | 3 | 75 |
| Licensed Seaplane Bases－ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Department of Transport．．．． | － | － | 1 | － | － | － | － | $\bar{\square}$ | － |  | 1 | － |  |
| Municipal．．．．．．．．．．．．．．．．．．．． | 6 | － | 1 | $\overline{1}$ | 2 59 | 15 96 | ${ }_{32}^{1}$ | 13 3 | 4 | 9 36 | 18 | 4 | 43 261 |
| Unlicensed Seaplane Bases－ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Department of Transport．．．． | － | － | $\bigcirc$ | － | － |  | － | － |  | 11 | － | － | 11 |
| Municipal．．．．．．．．．．．．．．．．．．．．． | － | － | 1 | 1 | － | 10 | 1 | 1 | 2 | 3 | 1 | － | 29 |
| Private．．．．．．．．．．．．．．．．．．． | 12 | － | $\square$ | 5 | 19 | 13 | 11 | 1 | 7 | 22 | 25 | － | 112 |
| Abandoned or unknown． | 18 | 1 | 0 | 5 | 25. | 15 | 12 | 10 | 6 | 15 | 19 | 6 | 141 |
| Military Airfields－ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| RCAF．．．．．．．．．．．．．．．．．．．．．． | 3 | －${ }^{1}$ | 1 | 2 | $\underline{6}$ | 15 | $\underline{6}$ | $\stackrel{3}{\square}$ | 5 | 3 | 二 | 2 | 47 |
| Army | 二 | 二 | 3 | $\underline{1}$ | 二 | － | － | － | 2 | 二 |  | － | 4 |
| U．S．Navy | 1 | － | － | － | － | － | － | － | － |  | 1 |  | 3 |
| U．S．Air Force．． | 1 | － | － | － | － | － | 1 | － | － |  | 21 |  | 23 |
| Totals，Land Bases |  |  |  |  |  | 117 | 48 | 177 | 76 | 169 | 26 | 18 | 770 |
| Totals，Seaplane Bases．．． | 36 | 1 | 13 |  | 105 | 149 | 63 | 31 | 20 | 99 | 64 | 11 | 601 |
| Totals，Military Airfields． | 5 | 1 | 4 | 3 | 6 | 16 | 7 | 3 | 7 | 3 | 22 | 2 | 79 |
| Grand Totals． | 57 | 5 | 26 | 31 | 203 | 282 | 118 | 211 | 103 | 271 | 112 | 31 | 1，450 |

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 air space 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 is designed particularly to provide 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．Con－ trol is effected by means of direct radiotelephone communication or visual signals．Air－ port control towers are located at：Whitehorse，Y．T．；Victoria（international），Port Hardy， Abbotsford and Vancouver，B．C．；Lethbridge，Calgary，Edmonton（municipal）and Edmonton（international），Alta．；Saskatoon and Regina，Sask；Winnipeg（international）， Man．；Lakehead，Windsor，London，Toronto Island，Toronto（international），Ottawa and North Bay，Ont．；Montreal（international），Cartierville，Quebec，Baie Comeau and Sept Îles，Que．；Moncton，Fredericton and Saint John，N．B．；Halifax（international）and Sydney， N．S．；Gander（international），Nfld．；and Frobisher，N．W．T．
Terminal Control Service consists of the provision of separation to aircraft operating in accord－ ance with the instrument flight rules in the vicinity of all controlled airports．While this service is normally provided by area control centres，separate terminal control units have been established at certain airports as follows：Calgary and Edmonton（international）， Alta．；Saskatoon and Regina，Sask．；Lakehead，Toronto，North Bay and Ottawa，Ont．； Quebec，Que．；Halifax，N．S．；Gander，Nfld．；and Frobisher，N．W．T．
Area Control Service is designed particularly to provide air traffic control service to en route flights operating within controlled airspace during weather conditions which 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, Nfld. 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. In addition, area control centres are capable of communicating directly with most pilots flying 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 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 Newfoundland, the Gander Control Centre provides control service within the airspace over approximately 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.
Radar Control Service is provided extensively in the control of IFR traffic, both in terminal areas and while en route. Terminal Radar Control Service is provided at Vancouver, B.C.; Calgary and Edmonton, Alta.; Regina and Saskatoon, Sask.; Winnipeg, Man.; Lakehead, Toronto, North Bay and Ottawa, Ont.; Montreal and Quebec, Que.; Moncton, N.B.; Halifax, N.S.; and Gander, Nfld. En route Radar Control Service is provided by area control centres and by one radar unit located at Kenora, Ont. Ground Control Approach (GCA) Service is provided at Gander, N fld., Montreal, Que., and Toronto, Ont.

Flight Information Service consists of the provision of advice and information useful for the safe and efficient conduct of flight, including weather reports and forecasts, field conditions reports, data concerning aids to navigation, traffic information, refueling and transportation facilities, and other related data of assistance to the pilot in planning or conducting a flight. This service is provided by all air traffic control units, but particularly by all area control centres.
Alerting Service is designed to ensure that appropriate organizations are notified of aircraft which 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 ATC 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 ATC, 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 Coordination Office, located at Ottawa, is responsible for co-ordinating all airspace reservations in Canada and in the Gander and Vancouver Oceanic Control Areas.
Aircraft 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.

The total number of aircraft movements at Department of Transport controlled airports in Canada during 1962 was 2,237,413.

## Section 2.-Civil Aviation Operation Statistics

Table 3 provides a picture of commercial civil aviation in Canada for the five years 1957-61. 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 both Canadian and foreign air carriers operating 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, 1957-61

| Item | 1957 | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Canadian Carriers- |  |  |  |  |  |
| Unit Toll Transportation (revenue traffic only)- |  |  |  |  |  |
| Hours flown.................. No. | 314,075 | 323,972 | 350,019 | 383,181 | 327,555 |
| Miles flown. . . . . . . . . . . . . . . " | 64,472,262 | 69,438,086 | 77,405,581 | 80,246,283 | 76,008,312 |
| Passengers carried............. " | 3,217,266 | 3,599,365 | 4,176,501 | 4,218,431 | 4,543,009 |
| Cargo and excess baggage carried | 61,692,930 | 63,761,034 | 76,464,625 | 80,152,652 | 80,823,898 |
| Mail carried................. | 29, 263,675 | 31, 387,841 | 32, 894,779 | 34,633,139 | 35,749, 456 |
| Passenger-miles. . . . . . . . . . . . No. | 1,737,582,244 | 2,036,163,546 | 2,357,386,420 | 2,671,926,081 | 3,157,518,367 |
| Cargo and excess baggage tonmiles. | 23,587,208 | 25, 395, 836 | 29,505,264 | 35,316,334 | 38,504,034 |
| Mail ton-miles.................. " | 11,447, 229 | 12,225,661 | 13,115,587 | 13,706,091 | 14,094,209 |
| Bulk Transportation (revenue traffic only)- |  |  |  |  |  |
| Hours flown.................. No. | 298,941 | 233,380 | 259,188 | 230,670 | 243,102 |
| Miles flown.................. " | $36,743,407$ 509 | 26,372,480 | 28,701,522 | 23, 938,740 | 21,569, 202 |
| Passengers carried............ " |  |  | 504,763 | 508,984 |  |
| Freight carried................ lb. | 194,456,192 | 128,006,002 | 126,523,737 | 123,200,348 | 111,504,022 |
| Other Flying Services (revenue traffic only) - <br> Hours flown......................No. | 113,271 | 135,587 | 155,022 | 81,059 | 75,808 |
| Canadian Carriers, All Services- |  |  |  |  |  |
|  |  |  |  |  |  |
| Hours flown................... No. | 726,287 | 692,939 | 764,229 | 694,910 | 646,465 |
| Miles flown................... " | 101,215,669 | 95,810,566 | 106,107,103 | 104,185,023 | 97,577,514 |
| Passengers carried | 3,726,603 | 4,022,937 | 4,681,264 | 4,727,415 | 4,950,897 |
| Cargo and excess baggage carried $\qquad$ lb . | 256,149,122 | 191,767,036 | 202,988,362 | 203,353,000 | 192,327,920 |
| Goods carried (incl. mail)..... " | 285,412,797 | 223, 154,877 | 235,883,141 | 237,986,139 | 228,077, 376 |
| Non-revenue Traffic- |  |  |  |  |  |
| Hours flown:................ No. | 40,641 | 35,427 | 31,624 | 24,251 | 28,863 |
| Passenger-miles............... "" | 69,097,794 | 84,572,322 | 100,192,596 | 127,072,658 | 148,517,121 |
| Goods ton-miles................ " | 2,844,976 | 3,296,840 | 4,287,822 | 5,244,953 | 5,965,235 |
| Fuel consumed................gal. | 94,581,917 | 106,118,520 | 122,055,240 | 139,425,893 | 175,201,010 |
| Oil consumed.................... | 1,000,998 | 897, 280 | 889,423 | 812,232 | 475,994 |
| Average employees............. No. | 16,014 | 15,990 | 16,565 | 17,106 | 17,700 |
| Salaries and wages paid.......... § | 75,313,556 | 80, 235,145 | 86,148,440 | 95,650,809 | 102,200,745 |
| Operating revenues............. \$ | 190,043,065 | 201,713,936 | 220,423,558 | 235,973,562 | 254,873,901 |
| Operating expenses............... \& | 189,413,789 | 200,278,225 | 219,487,993 | 237,714,284 | 257,445,532 |
|  |  |  |  |  |  |
| All Services (revenue traffic only)- |  |  |  |  |  |
| Hours flown.................. No. | 742,056 | 709,337 985 | 798,527 | ${ }^{712,3711}$ |  |
| Miles flown................. " | $104,699,140$ $4,319,920$ | $99,858,279$ $4,555,251$ | $110,889,252$ $5,316,001$ | $109,699,725$ $5,451,716$ |  |
| Cargo and excess baggage carried |  |  |  |  |  |
| Mail carried.................. ${ }_{\text {car }}^{\text {carie }}$. | $\begin{array}{r} 264,812,177 \\ 31,413,504 \end{array}$ | $\begin{array}{r} 200,388,312 \\ 33,628,013 \end{array}$ | $\begin{array}{r} 214,391,889 \\ 35,558,226 \end{array}$ | $\begin{array}{r} 217,220,865 \\ 37,579,496 \end{array}$ | $\begin{array}{r} 211,04,500 \\ 39,024,564 \end{array}$ |
| Unit Toll Transportation (revenue traffic only)- |  |  |  |  |  |
| Cargo and excess baggage ton- " | 24,456,122 |  |  |  |  |
| mailes...miles................... | $\begin{aligned} & 24,456,122 \\ & 12,055,649 \end{aligned}$ | $\begin{aligned} & 26,447,626 \\ & 13,037,645 \end{aligned}$ | $\begin{aligned} & 31,296,521 \\ & 13,702,638 \end{aligned}$ | $\begin{aligned} & 39,044,787 \\ & 14,321,366 \end{aligned}$ | 14,856,343 |

[^247]Summary statistics of Canadian and foreign commercial air carriers, by type of carrier, are given in Table 4 for 1961. No breakdown between the domestic and the international operations of the Canadian carriers is available for bulk services. 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 a Class 1 licence from the Air Transport Board-accounted for 90 p.c. of all revenue passengers transported by Canadian carriers during 1961. Their share of the freight traffic, however, was smaller, amounting to approximately 55 p.c.
4.-Summary Statistics of Canadian and Foreign Commercial Air Carriers, by Type, 1961

| Item | Canadian Carriers |  |  | Foreign Carriers |  | Total Carriers |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Scheduled |  | Nonscheduled | United States | Other Foreign |  |
|  | Domestic Services | International Services |  |  |  |  |
| Unit Toll Transportation (revenue traffic only) - |  |  |  |  |  |  |
| Hours flown............. No. | 206,613 | 83,156 | 37,786 | 6,000 | 10,665 | 344,220 |
| Miles flown............. " | 46,831,932 | 24,425,620 | 4,750,760 | 1,476,885 | 3,985, 166 | 81,470, 363 |
| Passengers carried...... " |  |  | 148,804 | 1,576,859 | 190,110 | 51,309,978 |
| Freight carried........ lb. | 90,580,081 | 15,935, 233 | 10,058,040 | 10,096,702 | 11,741,620 | 138,411,676 |
| Passenger-miles........ No. | 1,939, 381,256 | 1,189,089, 442 | 29,047,669 | 27,830, 338 | 167,356,289 | 3,352,704,994 |
| Freight ton-miles....... " | 34,358,541 | \| 15,743,527 | 2,496,175 | 258,137 | 4,476,420 | 57,332,800 |
| Bulk Transportation (revenue traffic only) - |  |  |  |  |  |  |
| Hours flown........... No. |  | 7,363 | 215,739 | ${ }^{9}$ | 1,021 | 244,132 |
| Miles flown............." |  | 9,039 | 17,570,163 | 1,563 | 294,258 | 21,865, 023 |
| Passengers carried..... " |  | 2,243 | 29 345,645 | 1,088 | 21,623 | 111, 430,599 |
| Freight carried........ lb. | 19,22 | 8,686 | 92,275,336 | - | 153,372 | 111,657,394 |

## 5.-Capital Investment of the Department of Transport in Air Services, as at Mar. 31, 1960-62

| Item | 1960 | 1961 | 1962 | Total as $\underset{1962}{\text { at Mar. 31, }}$ |
| :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | \$ |
| Civil Aviation Branch- |  |  |  |  |
| Airports and other Ground Services- |  |  |  |  |
| Capital appropriations........................ | 52,467,712 | 52,898,642 | 57,560,478 |  |
| Transferred from other government departments. . |  | 15,072,171 | 57, |  |
| Transferred to Crown Assets Disposal Corporation. | Cr. 1,851,007 | Cr. 2,991,084 | Cr. 3,685,267 | 532,916,749 |
| Property retired, etc............................... | Cr. 295,740 | Cr. 25,000 | Cr. 139,043 |  |
| Telecommunications and Electronics BranchRadio Aids to Air and Marine Navigation- |  |  |  |  |
| Capital appropriations.......................... | 9,998,792 | 8,815,328 | 14,345,529 |  |
| Property transferred to Crown Assets Disposal Corporation. | Cr. 17,560 | - | Cr. 26,500 | 89,128,590 |
| Property retired, etc.. | Cr. 43,147 | - | Cr. 121,064 |  |
| Radio Act and RegulationsCapital appropriations...... | 389,381 | 276,939 | 287,236 | 3,295,086 |
| Telegraph and Telephone ServiceCapital appropriations............. | 3,771,237 | 202,822 | 54,607 | 4,028,666 |
| Meteorological Branch- |  |  |  |  |
| Capital appropriations............................ | $\begin{array}{r} 1,248,648 \\ 75,054 \end{array}$ | 1,178, 054 | 1,208,057 | 11,733,287 |
| Totals. | 65,743,370 | 75,427,872 | 69,445,895 | 641,102,378 |

## 6.-Expenditure and Revenue of the Department of Transport in connection with Air Services, Years Ended Mar. 31, 1960-62

| Item | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: |
| Expenditure | \$ | \$ | \$ |
| Air Transport Board | 375,166 | 590,890 | 850,941 |
| Air Services | 4,063,675 | 4,818,175 | 5,443,951 |
| General Admin | 1,316,009 | 1,564,429 | 1,786,935 |
| Construction Services Adminis | 2,747,666 | 3,253,746 | 3,657,016 |
| Civil Aviation Branch | 24,963,651 | 29,958,090 | 32,319,901 |
| Control of Civil Aviation | 2,254,026 | 2,835,305 | 3,340,752 |
| Airports and other ground services-operation and maintenance.... | 16,678,285 | 19,208,000 | 20,762,291 |
| Airway and airport traffic control-operation and maintenance. | 5,126,621 | 6,802,517 | 7,500,249 |
| Contributions to other governments or international agencies for the operation and maintenance of airports | 246,439 | 218,705 | 217,542 |
| Contributions to assist in the establishment or improvement of local <br> airports and related facilities <br> Grants to organizations for development of civil aviation | $\begin{array}{r} 98,570 \\ 559,710 \end{array}$ | $\begin{aligned} & 254,163 \\ & 639,400 \end{aligned}$ | $105,667$ $393,400$ |
| Telecommunications and Electronics Branch | 18,448,097 | 20,611,217 | 21,821,570 |
| Radio aids to air and marine navigation-administration, operation and maintenance. | 15,833,875 | 17,717,469 | 18,801,872 |
| Radio Act and Regulations-administration, operation and maintenance. | 2,403,875 | 2,731,535 | 2,998,663 |
| Telegraph and Telephone Service-administration, operation and maintenance. | 210,347 | $2,731,535$ 162,213 | 21,035 |
| Meteorological Branch | 12,024,755 | 15,059,29\% | 16,900,780 |
| Totals, Expenditu | 59,875,344 | 71,037,669 | 77,337,143 |
| Revenue and Receipts |  |  |  |
| Air Services Administratio | 5,054 | 8,607 | 8,680 |
| Construction Branch Administration | 2,309 | 947 | 1,589 |
| Civil Aviation Branch | 9,457,898 | 11,494,911 | 14,758,453 |
| Private air pilots' certificat | 23,676 | 25,600 | 19,415 |
| Airport licence fees | 671 | 691 | 1,045 |
| Aircraft registration and | 13,758 | 15,940 | 15,191 |
| Fines, Aeronautics Act. | 2,775 | 5,767 | 6,707 |
| Land rental............................................ | 297,091 | 366,994 | 473,585 |
| Other rentals (living quarters, hangar space, equipment, restaurants and snack bars, etc.) | 1,426,286 | 1,662,723 | 2,328,448 |
| Concessions (gasoline and oil, taxi, restaurant and snack bars, telephone, parking, car rentals, etc.). | 1,867,439 | 2,364,101 | 3,208,950 |
| Aircraft landing fees | 4,645,709 | 4,820,617 | 6,580,628 |
| Aircraft parking and handlin | 55,304 | 63,891 | 71,243 |
| Power services. | 133,796 | 131,591 | 140,822 |
| Mess receipts | 54,892 | 55,973 | 66,667 |
| Telephone service | 27,928 | 3,611 | 3,519 |
| Observation roof-turnstiles | 55,230 | 75,831 | 109,421 |
| Hangar storage space and he | 115,198 | 85,245 | 52, 899 |
| Sanitary fees. | 23,236 | 36,850 | 47, 750 |
| Sales (water, land and buildings, parking meters, etc.) | 83,461 | 120,125 | 277,833 |
| Gander Airport (coal sales, heating, el | 109,777 | 65,000 | 54,661 |
| Interest on investment | 10,700 | 10,263 | 742, 667 |
| Air route facilities fees. ${ }^{\text {Joint user terminal faciliti }}$ | 28,608 | 992,399 | 742,667 213,804 |
| Joint user terminal facilities Control Divisio | 10,493 | 15,435 | 3,391 |
| Sundry services and sundries | 220,337 | 232,555 | 247,454 |
| Refunds, previous years' expendit | 251,533 | 343,709 | 86,542 |
| Telecommunications and Electronics Branch | 2,860,981 | 3,883,597 | 3,002,717 |
| Air-ground radio services | 891,480 | 996,630 | 856,574 |
| Communication facilities. | 2,093 | 2,152 | 2,318 |
| Message tolls. | 425,227 | 419,062 | 390,757 |
| Private commercial broadcasting station licence fees. | 526,940 | 1,266,128 | 739,694 |
| Radio operators' examination fees | 5,486 | 6,644 360 | 384,545 |
| Radio station licence fees............................... | 3127,078 | 360,328 447 | 533,172 |
| Rentals (living quarters, space control lines and power, etc. <br> Sales (land and buildings, power services, publications, miscellaneous etc.) | 427,078 126,159 | 447,916 241,513 | 333,172 16,456 |
| Telephone and telegraph services and tolis.. | 66,481 | 55,752 | 6,793 |
| Miscellaneous. | 4,418 | 13,422 | 11, 278 |
| Refunds of previous years' expenditure. | 72,602 | 74,050 | 53,485 |
| Meteorological Branch | 176,753 | 213,889 | 248,307 |
| Totals, Revenue and Receipts | 12,502,995 | 15,601,951 | 18,019,746 |

Table 7 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 1958 to 1962.
7.-Personnel and Airport Licences in Force and Aircraft Registered as at Dec. 31, 1958-62

| Item |  |  |
| ---: | :--- | ---: | ---: | ---: | ---: | ---: |

## PART VI.-OIL AND GAS PIPELINES*

A special article covering the history and development of pipeline construction in Canada appears in the 1954 Year Book at pp. 861-869. Additional information has been carried in each succeeding edition and the following write-up brings pipeline development up to the end of 1961. DBS pipeline statistics were undergoing revision at time of writing and 1962 figures were not ready for presentation in this edition. Summary of the previous series appears in the 1962 Year Book at pp. 835-836.

Oil Pipelines.-At the end of 1962, oil pipeline milage in Canada totalled just under 10,000 miles. Most of this is used mainly for transporting crude oil but a few systems carry natural gas liquids or refined petroleum products. The two main trunk crude-oil pipeline systems originate in Edmonton, one extending eastward to Toronto and the other southwestward to Vancouver and the State of Washington. In 1961, 1,115 miles of oil pipeline were laid but less than half that amount was constructed in 1962.

British Columbia's important new pipeline system, Western Pacific Products \& Crude Oil Pipelines Ltd. was completed late in 1961 and deliveries began in January 1962. The pipeline extends from Taylor in northeastern British Columbia to Kamloops where it joins the Trans Mountain pipeline which serves Vancouver and the United States Puget Sound area. During 1962, Western Pacific doubled the capacity of its line to $45,000 \mathrm{bbl}$. a day by installing new pumping units. Trans-Prairie Pipelines, Ltd. added a 25 -mile 8 -inch loop to its Boundary Lake-to-Taylor system in the Peace River area to take care of the sharply increased demand for British Columbia oil.

Most of the new crude oil pipelines constructed in Alberta were field gathering lines: Pembina Pipe Line Ltd. added 51 miles of gathering line extensions in the Pembina, Willesden Green and adjacent fields; Federated Pipe Lines Ltd. laid 21 miles of extensions to the Swan Hills gathering system; and the Twining and Twining North fields were

[^248]joined to the Britamoil pipeline south of Fenn-Big Valley field by 30 miles of smalldiameter pipe constructed by Twining Pipeline Ltd. The largest trunk lines completed in Alberta in 1962 are for moving natural gas liquids (NGL). Hudson's Bay Oil and Gas Company Limited, through its Rangeland Division, constructed a 70 -mile, 8 -inch NGL pipeline from Sundre to the Westerose South field. The Cremona Pipe Line Division of Home Oil Company Limited completed 14 miles of 6 -inch pipe from Harmattan to Sundre, and 28 miles of 6 -inch from Madden to Calgary. Rangeland's and Cremona's NGL pipelines supplement their crude oil lines which serve the same general areas. Fifteen miles of NGL pipeline was laid by Peace River Oil Pipe Line Co. Ltd. from the new Carson Creek gas-cycling plant to Whitecourt.

Producers Pipelines Ltd. added 130 miles of extensions to its gathering systems in Saskatchewan, mainly in the Willmar, Oungre and Gapview regions. In Minnesota and Wisconsin, the Lakehead Pipe Line Co. Inc., Interprovincial Pipe Line Company's whollyowned United States subsidiary, added 39 miles of 34 -inch loop beside its 18 - and 24 -inch lines. This is the largest diameter pipe yet used in the Interprovincial-Lakehead system.

In October 1962, two Canadian pipeline companies received United States presidential permission to construct pipeline facilities across the international boundary. As a result, the Aurora Pipe Line Company commenced exporting natural gas liquids at a rate of about $11,000 \mathrm{bbl}$. a day from Alberta to Montana, and Interprovincial Pipe Line Company started building a lateral line to Buffalo, N.Y., capable of moving $20,000 \mathrm{bbl}$. a day of crude oil.

Interprovincial Pipeline.-Canada's longest oil pipeline, the system of Interprovincial Pipe Line Company, extends from the Redwater field, 29 miles northeast of Edmonton, Alta., to Port Credit near Toronto, Ont. This includes the part of the line passing through the United States which is operated by Interprovincial's subsidiary, Lakehead Pipe Line Company Incorporated. The total right-of-way distance of the whole system is 1,928 miles, although there is considerably more pipe than this in the system because of looping. Upon completion of the 1963 construction program, the throughput capacities of various sections of the system will range between $170,000 \mathrm{bbl}$. a day between Sarnia and Port Credit, Ont., and $494,000 \mathrm{bbl}$. a day between Cromer and Gretna, Man.

Trans Mountain Pipeline.-The system of Trans Mountain Pipe Line Company extends from Edmonton to Vancouver, enabling West Coast refineries to use Alberta crude oil. The system, completed in 1953, consists of 718 miles of 24 -inch pipeline plus two 50 mile loops. Extensions into the State of Washington carry crude to refineries at Ferndale and Anacortes. In 1962, deliveries totalled 198,300 bbl., well above the throughput of previous years but still considerably below the $250,000-\mathrm{bbl}$. capacity of the system. In earlier years, there were two main crude oil receiving terminals on the line, at Edmonton and Edson. In 1962, the Western Pacific pipeline began delivering British Columbia crude at Kamloops, thus establishing a third point of delivery to the Trans Mountain system.

Other Oil Pipelines.-The pipeline of Western Pacific Products \& Crude Oil Pipelines Ltd. consists of 504 miles of 12 -inch pipe extending from Taylor in northeastern British Columbia to Kamloops where it joins Trans Mountain pipeline. Trans-Prairie Pipelines, Ltd. and British Columbia Oil Transmission Co. Ltd. deliver oil to the Taylor terminal from fields in northeastern British Columbia.

In Alberta, Federated Pipe Lines Ltd. serves fields in the Swan Hills region with two pipelines to Edmonton which have a combined capacity of $67,000 \mathrm{bbl}$. a day. Peace River Oil Pipe Line Co. Ltd. has a line from the Kaybob and Windfall fields to Edmonton and one from the Sturgeon Lake field to the Trans Mountain pipeline at Edmonton. Pembina Pipe Line Ltd. gathers crude from the Pembina and adjacent fields. Britamoil Pipe Line Company Limited operates a pipeline that begins 140 miles south of Edmonton in the Drumheller area and gathers crude from several fields en route to Edmonton, and the Edmonton Pipe Line Company transports crude from the Joarcam and Camrose fields 40 miles south of Edmonton. Most of the other fields between Calgary and Edmonton are served by a composite pipeline system owned by three companies: Texaco Exploration

Company, which owns the Edmonton-Rimbey section; Rangeland Pipe Line Division of Hudson's Bay Oil and Gas Company Limited, the Rimbey-Sundre section; Cremona Pipeline Division of Home Oil Company Limited, Sundre to Calgary. The Imperial Pipe Line Company Limited has four systems that serve the fields in the Edmonton area including Leduc-Woodbend, Golden Spike and Redwater.

In Saskatchewan, Producers Pipelines Ltd. and its wholly-owned subsidiary Westspur Pipe Line Company gather crude from most of the fields in the southeastern part of the province and deliver it to the Interprovincial pipeline at Cromer, Man. Trans-Prairie Pipelines, Ltd., in addition to its comparatively new system in northeastern British Columbia, has a system serving the Weyburn field in southwestern Saskatchewan and connected to the Westspur pipeline, and another system in southwestern Manitoba which is linked to the Interprovincial pipeline. The South Saskatchewan Pipe Lines Company delivers oil from the group of fields in southwestern Saskatchewan to Moose Jaw, Regina and the Interprovincial pipeline at Regina.

Oil Pipeline Tariffs.-On Feb. 1, 1963, Interprovincial Pipe Line Company put into effect a new tariff schedule which included tariff reductions up to a maximum of 3 cents from Edmonton to Port Credit. Western Pacific Products \& Crude Oil Pipelines Ltd. announced a tariff reduction, effective May 1, 1963, from 66 to 55 cents on its Taylor-toKamloops pipeline. Trans-Prairie Pipelines, Ltd., which delivers crude to Western Pacific, effected tariff reductions on Jan. 1, 1963 on oil from fields other than the Boundary Lake field. Trans Mountain Oil Pipe Line Company will reduce the tariff between Kamloops and Vancouver from 22 to $18 \frac{1}{2}$ cents when deliveries from Western Pacific exceed a $30,000-$ bbl.-a-day average over a 12 -month period. Some examples of tariffs for the two major systems follow:-

| Route | $\begin{aligned} & \text { Transmission } \\ & \text { Distance } \end{aligned}$ | Tariff as of <br> Feb. 1, 1963 |
| :---: | :---: | :---: |
|  | miles | cts. per bbl. |
| Edmonton, Alta., to- |  |  |
| Regina, Sask. | 438 | 20 |
| Gretna, Man. | 772 | 29 |
| Sarnia, Ont.. | 1,743 | 48 |
| Port Credit, Ont. | 1,899 | 51 |
| Kamloops, B.C.. | 510 | 33 |
| Vancouver, B.C. | 718 | 40 |
| Anacortes, Wash., U.S.A | 740 | 40 |

Natural Gas Pipelines.-There were no large natural gas pipeline construction projects in 1962 but approximately 1,000 miles of line were laid, of which more than half were small- and medium-diameter distribution lines. Trans-Canada Pipe Lines Limited, which :ulded four sections of 34 -inch loop totalling 59 miles in Manitoba and Saskatchewan in 1962, plans to begin laying another 205 miles of 34 -inch loop in the spring of 1963 . The company in 1963 will also purchase the Crown section which extends from the Manitoba boundary to Kapuskasing, Ont., a distance of 675 miles; Trans-Canada has operated the section since completion in 1958 but it has been owned by Northern Ontario Pipe Line Crown Corporation. The Alberta Gas Trunk Line Company, Trans-Canada's main gas supplier, laid 10 miles of 34 -inch loop just west of the Alberta-Saskatchewan boundary and plans to lay another 25 miles in 1963 to serve the Trans-Canada pipeline. Gas deliveries began in October 1962 through the new 39 -mile, 12 -inch pipeline that Alberta Gas Trunk installed to connect the Worsley field in northwestern Alberta with the pipeline of Westcoast Transmission Company Limited near Boundary Lake, B.C.

Pipeline construction companies took advantage of the frozen ground during early 1963 to lay 72 miles of the casinghead-gas gathering systems in the Swan Hills, Judy Creek and Virginia Hills fields, and to construct 53 miles of the 12 -inch transmission line that will carry the gas to the Leduc gas plant south of Edmonton. This was the first winter construction of a pipeline in Canada. A 27 -mile, 14 -inch gas transmission line was laid in
the early part of 1962 to transport sour gas from the Pine Creek field to the Windfall field where it is injected underground to replace Windfall gas that has been processed and marketed.

In Ontario, The Consumers' Gas Company and its subsidiaries constructed more than 300 miles of distribution and transmission lines, and Union Gas Company of Canada, Limited, built 203 miles of pipeline. Saskatchewan Power Corporation added 232 miles of transmission pipeline and 149 miles of distribution line to its Saskatchewan systems.

Trans-Canada Pipe Lines Limited.-The Trans-Canada pipeline, extending from the Alberta-Saskatchewan boundary to Montreal, is Canada's longest pipeline, with a right-of-way length of 2,145 miles. In addition, there are 145 miles of lateral lines and a 50 -mile lateral completed in 1960 which delivers gas from the main line at Winnipeg to the United States boundary near Emerson, Man. In September 1962, Trans-Canada began delivering gas to the St. Lawrence Gas Company Inc. in northern New York State through the Niagara Gas Transmission Ltd. line near Cornwall. Trans-Canada increased its sales of gas from $210,400,000 \mathrm{Mcf}$. in 1961 to $237,300,000 \mathrm{Mcf}$. in 1962 , an increase of 13 p.c. The company receives most of its gas from the Alberta Gas Trunk Line Company.

Alberta-to-California Pipeline.-The total length of the main Alberta-to-California line, including the section in the United States, is 1,367 miles-all 36 -inch pipe except the most northerly 126 -mile section just south of Whitecourt, Alta., which is 30 inches. The Alberta Gas Trunk Line Company owns the 351-mile main section in Alberta, plus more than 220 miles of the lateral feeder lines. The 107-mile section of line which crosses southeastern British Columbia from the Crowsnest Pass to Kingsgate is owned by Alberta Natural Gas Company. The two Canadian companies that deliver gas through the pipe-line-Alberta and Southern Gas Co. Ltd. and Westcoast Transmission Company Limitedhave been authorized to export a maximum of 610,750 Mcf. a day at the British ColumbiaIdaho boundary. The pipeline began deliveries in December 1961.

Westcoast Transmission Company Limited.-The Westcoast pipeline transports gas to the Vancouver area and adjacent United States areas from the Peace River district of northeastern British Columbia and northwestern Alberta. The main trunk consists of 650 miles of 30 -inch pipe starting at Taylor, B.C., but there are some 400 miles of gathering lines supplying gas from British Columbia fields. The Worsley field in Alberta started supplying gas to Westcoast late in 1962. The ultimate throughput capacity of the present Westcoast main line, after installation of more compression equipment, will be 660,000 Mcf. per day. The company also buys Alberta gas and delivers it through the Alberta-to-California pipeline to Idaho, Washington and Oregon.

Other Gas Pipelines.-The most important gas transmission lines in Alberta are owned by the Alberta Gas Trunk Line Company. The company's pipeline systems are divided into two main sections. The Plains Division is roughly the shape of a recumbent ' Y ', with one arm running southeast from the Homeglen-Rimbey area and the other extending northeast from Pincher Creek. The two lines join at Princess, and the third arm runs eastward to the Trans-Canada pipeline near Burstall, Sask. The newer Foothills Division is part of the earlier-discussed Alberta-to-California pipeline. In British Columbia, the British Columbia Hydro and Power Authority provides natural gas service to Vancouver and lower mainland areas, and Inland Natural Gas Co. Ltd. serves the southern interior region. In Saskatchewan, all cities and towns using natural gas are served by Saskatchewan Power Corporation. In Manitoba, Greater Winnipeg Gas Company distributes natural gas in the Winnipeg area. Union Gas Company of Canada, Limited serves southwestern Ontario in the Windsor, London, Sarnia and Chatham areas. The Consumers' Gas Company and its subsidiaries distribute gas in Toronto, Ottawa, Niagara Falls, Welland and Fort Erie regions. In Quebec, gas is distributed by Quebec Natural Gas Limited which serves the Montreal area. Although a small amount of gas is imported into southwestern Ontario from the United States, most of the gas used in Eastern Canada is supplied by the Trans-Canada pipeline.

## CHAPTER XVIII.-COMMUNICATIONS

## CONSPECTUS



The interpretation of the symbols used in the tables throughout the Year Book will be found facing $p .1$ of this volume.

Communications media in Canada have been shaped to meet the needs of the country. Great networks of telephone, telegraph and radio services, 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 second to none in the world.

## Section 1.-Telecommunications*

During the past half-century, Canada has experienced tremendous economic expansion. Population growth and the advance to new industrial frontiers have been matched by an upward surge in national productivity and general standard of living. Continuing development of Canada is dependent on both individual pioneering and the co-operative efforts of many industries and the telecommunications industry is filling a vital role in this drama of growth.

Business and industry have expanded and ventured into isolated areas assisted and promoted by Canadian telecommunications industries which have anticipated the needs of the future with vast programs of development in virgin territories. Technological development has been particularly important to the extension of telecommunications in Canadit. To meet the demands placed upon it, the industry has constantly introduced newer and better equipment, tools and methods of operation. In the growth of urban centres, the development of rural communities and the pioneering of new territory, Canadian telecommunications agencies through the years have sought to provide the highest quality of service for the greatest number of people. The major railways, the

[^249]hundreds of co-operating telephone companies, the radio and television companies and federal communications organizations work together with a common purpose-building networks of telecommunications from coast to coast. They provide such familiar services as telephone, telegraph, teletype, radio and television, and many other related means of communication; in addition, mutual co-operation has allowed them to satisfy a variety of defence needs.

## Subsection 1.-Government Control over Telecommunications Agencies

Telephone and telegraph companies incorporated under the Federal Government 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. 751-753); 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 Inter-American Radio Agreement and the North American Regional Broadcasting Agreement (see also pp. 830-832).

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 broadcasting service of high standard, basically Canadian in content and character. While 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 Department.

## Subsection 2.-Telephones

Alexander Graham Bell first transmitted human speech through electrically energized equipment in March 1876, and in August of the same year a one-way call from Brantford to Paris in Ontario marked the first successful long-distance test of the new invention. Soon after the instrument was perfected, telephone exchanges sprang up in many Canadian communities, sometimes with two competing companies in one place.

In April 1880, The Bell Telephone Company of Canada was established by Act of Parliament and authorized as the official agent for telephone service in 32 cities and towns across the country. However, it came to be recognized that, in the existing state of the industry, one company could scarcely develop and organize service over so wide an area, and a separate company was set up in British Columbia. The Bell Telephone Company withdrew from the Maritime Provinces in the 1880's and installations in the Prairie Provinces were sold to the respective provincial governments in 1908-09. The seven major telephone systems that developed across Canada worked together to establish long-distance service on a national basis and in 1931 they founded the Trans-Canada Telephone System which now has eight full members. These include both shareholder-owned companies and provincial government systems. They are as follows:-

The Avalon Telephone Company Limited<br>Maritime Telegraph and Telephone Company Limited<br>The New Brunswick Telephone Company Limited<br>The Bell Telephone Company of Canada (serving Ontario, Quebec, Newfoundland and the Northwest Territories)<br>Manitoba Telephone System<br>Saskatchewan Government Telephones<br>Alberta Government Telephones<br>British Columbia Telephone Company.

These eight systems, together with the Island Telephone Company (P.E.I.), QuébecTéléphone, serving the Lower St. Lawrence area, Ontario Northland Communications and the Okanagan Telephone Company, comprise the Telephone Association of Canada. This organization was established to ensure general co-operation in telephone matters and to provide a means of sharing technical and operating information. Many of the smaller systems have also formed similar groups, such as the Canadian Independent Telephone Association, the Quebec Independent Telephone Association and the Saskatchewan Association of Rural Telephone Companies.

Backbone of the Canadian telephone network is the Trans-Canada microwave system. Stretching more than 3,900 miles from the Atlantic to the Pacific, it is the longest single microwave system in the world. In all, the Canadian telephone industry operates more than 10,000 miles of microwave routes, carrying simultaneously many hundreds of long-distance conversations, large volumes of data, and television programs for the CBC and CTV television networks. The Trans-Canada System also supplies the communications facilities linking the more than 200 stations on the CBC French and English radio networks.

The steadily rising demand for local and long-distance service has called not only for general expansion of Canadian telephone systems but for the constant introduction of modern farilities and services. A number of Canadian companies have introduced what is called "Extended Area Service" in many of the communities they serve. This plan eliminates long-distance charges between several larger centres and their suburbs, and between many smaller places with a close community of interest. The cost of this service is included in the monthly charge for local telephone service.

Distance Dialing by both operators and customers enables the industry to provide faster and better long-distance service, while making the most efficient use of manpower and equipment. Direct Distance Dialing now makes it possible for users to dial their own long-distance calls to nearly $6,000,000$ telephones in Canada, and more than $80,000,000$ in Canada and the United States.

Numerous flexible telephone services are provided for government, business and industry. Special conference circuits can be quickly arranged, enabling businessmen to
discuss their affairs without the inconvenience and expense of travel. Radiotelephone installations link travellers with the regular telephone network, providing mobile service for such users as highway departments, trucking and construction firms, fire and ambulance services and police departments. A pocket radio signaller carried by a person temporarily leaving a telephone instrument area will indicate an incoming call requiring his attention.

Improvement and extension of local and long-distance telephone services continue to absorb the bulk of invested money and labour. However, the increasing mechanization of government and business operations and the resultant need to transmit large volumes of information at economical rates have led to the accelerated development of machine-tomachine communication. The growth of such communication in the past few years has been made possible to a large extent by the introduction of Data-Phone data sets which convert the electrical impulses from business machines into tone-signals acceptable to telephone circuits. A Data-Phone data set at the receiving business machine re-converts the tone-signals into machine language. Data-Phone service is now used in conjunction with a variety of business machines to send information from punched cards and from paper or magnetic tape.

Several optional services introduced recently provide great flexibility for machine-tomachine and voice calling over long distances. Wide Area Telephone Service extends a customer's flat-rate calling to telephones within seven progressively wider zones, the largest of which includes the whole of Canada. Telpak, a new private line intercity service, is now available to organizations which transmit large volumes of information requiring an exceptionally broad band of frequencies, such as data from advanced computers and highspeed facsimile equipment. It may also be used to carry simultaneously many smaller loads of information, such as voice calls and teletypewriter messages, which require relatively narrow bands of frequencies.

Many new services for business use were introduced by the industry in 1962. Among these was an electronic facsimile service which transmits or receives letter-size handwritten or printed messages, charts or drawings over the regular network or private lines. Dial Teletypewriter Exchange Service (TWX)—also made available in 1962-transmits typewritten information and certain low-speed data over the regular telephone network. Handwritten messages or sketches can be transmitted over private lines, or over the regular telephone network, in conjunction with Data-Phone data sets.

A recent product of Canadian telephone research which has been quickly accepted by business customers is known as Business Interphone, a versatile, hands-free intercommunication system and regular telephone service in a single instrument. Centrex, designed for large customers, permits outside calls to be dialed straight through to an extension without being relayed at the switchboard of private branch exchanges. A complete intercommunication system is available for use in the home and in small businesses. A special type of telephone has been introduced for hard-of-hearing users. Another new service is an automatic dialer which can retain up to 290 telephone numbers in its electronic memory. Canadian telephone research laboratories are working on basic research in such fields as electronic circuitry, microminiaturization, solid state physics and ferrites. Applied research has concentrated on meeting the needs of Canadian subscribers for modern data communications and telephone service.

The northward extension of industry in Canada has, of course, required the northward expansion of telephone communications. The British Columbia Telephone Company operates a tropospheric scatter system from Port Hardy to Annette Island. Alberta Government Telephones, in conjunction with Saskatchewan Government Telephones, recently completed construction of a microwave transmission system from Uranium City
in Saskatchewan to Fort Smith in the Northwest Territories. In Manitoba, radiotelephone service reaches out to a large number of isolated settlements and bush camps and provides communication for aircraft and for boats plying Lake Winnipeg. In northern and northwestern Ontario, Fringe Radio Service extends telephone communication beyond wire and cable facilities. A radio unit on the customer's premises permits two-way calling between subscribers in the fringe area and those served by the regular telephone network. Goose Bay in Labrador and the Schefferville area of the Quebec-Labrador boundary are in contact with the remainder of the world through a tropospheric scatter and radio-relay network hinged on Sept Iles. Bell Telephone operates its farthest north exchange at Frobisher on Baffin Island. A high-frequency radio base station at Alma, Que., serves the communications needs of the northern settlements in the area between the Atlantic Coast of Labrador and the Quebec shore of Hudson Bay, and also provides communications for aircraft operating in the North.

Telephone Statistics.-There were 2,509 telephone systems operating in Canada in 1961, compared with 2,558 in 1960. The number of co-operative systems in rural districts decreased from 2,180 to 2,108 , and the number of shareholder-owned companies decreased from 283 to 259 . The largest of the stock 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, as compared with 63 p.c. in 1960. The British Columbia Telephone Company, also share-holder-owned, served 8.5 p.c. of the total number of telephones in 1961 and 9 p.c. in 1960.

The number of telephones in use in Canada increased by 79 p.c. during the ten-year period 1952-61. At Dec. 31, 1961, there were $6,014,015$ telephones in service, compared with $5,728,167$ in 1960 and $3,352,366$ in 1952 . The number of residential telephones and the number of business telephones increased by 6 p.c. and 3 p.c., respectively, during 1961.

## 1.-Milages of Pole-Line and Wire and Number of Telephones in Use, 1952-61

Note.-Figures from 1911 are given in the corresponding table of previous Year Books beginning with the 1938 edition.

| Year | Systems | Route Milage ${ }^{1}$ | Length of Wire | Telephones in Use |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Business | Residential | Total | Per 100 Population |
|  | No. | miles | miles | No. | No. | No. | No. |
| 1952. | 2,888 | 253,420 | 11,265,903 | 1,016,775 | 2,335,591 | 3,352,366 | 23.2 |
| 1953. | 2,793 | 257,059 | 12,307,070 | 1,084,815 | 2,521,592 | 3,606,407 | 24.4 |
| 1954. | 2,788 | 257,444 | 13,357,289 | 1,153,806 | 2,706,463 | 3,860,269 | 25.4 |
| 1955. | 2,739 | 259,784 | 14,758,160 | 1,236,341 | 2,915,337 | 4,151,678 | 26.6 |
| 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 | 20,250,410 | 1,486,393 | 3,631,900 | 5,118,293 | 30.0 |
| 1959.. | 2,605 | 267,737 | 22,791,129 | 1,568,735 | 3,870,288 | 5,439,023 | 31.2 |
| 1960. | 2,558 | 274,855 | 25,333, 802 | 1,673,915 | 4,054,252 | 5,728,167 | 32.2 |
| 1961... | 2,509 | 306,167 | 26,986,478 | 1,729,599 | 4,284,416 | 6,014,015 | 32.6 |

[^250]
## 2.-Telephones in Use, by Province, 1961

| 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........ | 6,275 | 14,854 | 464 | 22,979 |  | 2,251 | 426 |
| Prince Edward Island.. | 2,010 | 5,125 | 87 | 3,012 | 340 | 5,737 | 138 |
| Nova Scotia........... | 15,308 | 74,177 | 480 | 20,985 | 1,251 | 27,671 | 2,659 |
| New Brunswick........ | 11,529 | 36,018 | 851 | 33,025 | 1,193 | 20,563 | 1,786 |
| Quebec.. | 141,125 202,458 | 576,403 779,091 | 8,368 7,0141 | 287, 234 510,3971 | 12,173 | ${ }_{193}^{115,502}$ | 24,349 |
| Manitoba. | 26,153 | 105, 706 | 7,0190 | 564,158 | 12,453 | ${ }^{193,8221} 3$ | 27,121 |
| Saskatchewan. | 24,173 | 123,355 | 34 | 521 | 3,359 | 57, 808 | 1,901 |
| Alberta. | 50,997 | 229,567 | 14 | 385 | 1,015 | 31, 398 | 2,536 |
| British Columbia...... | 53,721 | 61,509 | 420 | 243,336 | 4,145 | 82,678 | 4,898 |
| Yukon Territory....... Northwest Territories. | 30 219 | 6 170 | 13 87 |  | - 2 | 44 <br> 84 | - 27 |
| Canada. . . . . . . . | 533,998 | 2,005,981 | 18,322 | 1,186,408 | 37,434 | 570,972 | 68,355 |
|  | Private Branch Exchange |  | Extensions |  | Mobile | Total | Telephones per 100 Population |
|  | Business | Residential | Business | Residential |  |  |  |
|  | No. | No. | No. | No. | No. | No. | No. |
| Newfoundland. ....... | 6,275 | - | 4,394 | 4,049 | 2 | 61,969 | 13.3 |
| Prince Edward Island.. | 1,311 | - | 1,377 | 1,160 | 65 | 20,362 | 19.2 |
| Nova Scotia........... | 16,156 | 1 | 9,699 | 14,949 | 512 | 183,848 | 24.8 |
| New Brunswick | 12,262 |  | 9,061 | 10,171 | 350 | 131,809 | 22.7 |
| Quebec...... | 189, 191 | 45 | 111,884 | 144,827 | 193 | 1,611,294 | 30.3 |
| Ontario... | 300,755 | ${ }^{230}$ | 145, 804 | 243,236 | 484 | 2,421,915 | 38.5 |
| Saskatchewan | 19,215 | - | 10,163 | 10,415 | 186 | 251,130 | ${ }_{27.1}$ |
| Alberta | 54,515 | - | 20,877 | 30,203 | 657 | 422,164 | 31.1 |
| British Columbia. | 65,577 | - | 42,904 | 44,354 | 560 | 604,102 | 36.7 |
| Yukon Territory...... | 14 | - | $\stackrel{23}{135}$ | 56 54 | - | ${ }_{1} 223$ | 0.9 |
| Northwest Territories. | 244 | - | 135 | 54 | - | 1,361 | 9.1 |
| Canada | 695,833 | 276 | 372,602 | 520,779 | 3,055 | 6,014,015 | 32.6 |

${ }^{1}$ Ontario 4-party telephones included under Rural Lines.
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 long-distance calls, gives their total volume of business. Estimates are included for the smaller systems. The number of completed calls on all systems in 1961 was estimated at $10,468,915,000$, or an average of 1,741 calls per telephone and 568 calls per person. Despite the increase in extended area service which eliminates toll charges between adjacent communities, long-distance calls continue to increase in number.

## 3.-Local and Long-Distance Calls and Average Calls per Capita and per Telephone, 1952-61

Nore.-Figures from 1928 will be found in the corresponding table of previous Year Books beginning with the 1939 edition.

| Year | Local Calls | $\begin{aligned} & \text { Long- } \\ & \text { Distance } \\ & \text { Calls } \end{aligned}$ | Total Calls | Total Calls per Capita | Average Calls per Telephone |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Local | Long- Distance | Total |
|  | No. | No. | No. | No. | No. | No. | No. |
| 1952. | 5,482,973,000 | 126,721,000 | 5,609,694,000 | 389 | 1,635 | 37.8 | 1,673 |
| 1953. | 5,952,756,000 | 131,899,000 | 6,084,655,000 | 412 | 1,650 | 36.6 | 1,687 |
| 1954. | 6,209,771,000 | 137,761,000 | 6,347,532,000 | 418 | 1,608 | 35.7 | 1,644 |
| 1955 | 6,808,389,000 | 153,087,000 | 6,961,476,000 | 446 | 1,640 | 36.8 | 1,677 |
| 1956. | 7,593,525,000 | 171,280,000 | 7,764,805,000 | 486 | 1,688 | 38.0 | 1,726 |
| 1957 | 8,077,101,000 | 178,608,000 | 8,255,709,000 | 498 | 1,673 | 37.0 | 1,710 |
| 1958. | $8,513,455,000$ | 194,186,000 | 8,707,641,000 | 511 | 1,663 | 37.9 | 1,701 |
| 1959. | 9,044, 825,000 | 205,395,000 | 9,250,220,000 | 530 | 1,663 | 37.9 | 1,701 |
| 1960 | 9,364,586,000 | 215,275,000 | 9,579, 861,000 | 537 | 1,635 | 37.6 | 1,672 1 |
| 1961. | 10,242,657,000 | 226,258,000 | 10,468,915,000 | 568 | 1,703 | 37.6 | 1,741 |

The steady increases in capitalization, revenue and expenditure of telephone companies together with the figures of number of employees and salaries and wages paid are shown for the years 1952-61 in Table 4. Provincial figures for 1961 are given in Table 5.

## 4.-Financial Statistics of Telephone Systems, 1952-61

Nore.-Figures from 1911 are given in the corresponding table of previous Year Books beginning with the 1938 edition.

| Year | Capital Stock ${ }^{1}$ | Long-Term Debt | Cost of Property and <br> Equipment | Revenue | Expenditure | FullTime ployees | Salaries and Wages ${ }^{2}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | \$ | \$ | No. | \$ |
| 1952. | 335, 575, 292 | 378,628,224 | 1,027,527, 807 | 279,001, 814 | 244, 506,402 | 48,207 | 131,370,832 |
| 1953. | 398,198,697 | 450,511, 233 | 1,152,309,749 | 310,833,599 | 269,817, 828 | 50,540 | 145, 109, 934 |
| 1954. | 418,287,016 | 498,231,715 | 1,301,545,688 | 340,623,170 | 296,384,292 | 51,929 | 159,329, 238 |
| 1955. | 467,026,669 | 521,336,006 | 1,470,679,433 | 376,716,651 | 328,880,674 | 55,673 | 173,922,973 |
| 1956. | 549,196,657 | 583,795,407 | 1,672,363,570 | 422,370, 206 | 366,117,634 | 60,121 | 193,992,142 |
| 1957.. | 627,051,991 | 683,386, 827 | 1,941, 591, 700 | $467,701,983$ | $412,158,348$ |  | $219,693,002$ |
| 1958. | $639,824,492$ $730,874,613$ | $845,613,559$ $916,791,207$ | 2,202,747,303 $2,444,576,788$ | $507,689,602$ $582,262,550$ | $451,672,799$ 509 | 61,400 58 | 234, 2991,244 |
| 1960. | 758,291,439 | 1,068,399,476 | 2,692,484,052 | 627,982,847 | 549,042,848 | 57,670 | 247,128, 467 |
| 1961. | 879,424,405 | 1,134,866,419 | 2,926,527,459 | 679,306,194 | 590,428, 169 | 56,322 | 254,207,734 |

${ }^{1}$ Includes premium on capital stock.
${ }^{2}$ Full-time and part-time.
5.-Financial Statistics of Telephone Systems, by Province, 1961

| Province or Territory | Capital Stock ${ }^{1}$ | Cost of Property and <br> Equipment | Revenue | Expenditure | Full- <br> Time <br> ployees | Salaries and Wages ${ }^{2}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | \$ | No. | \$ |
| Newfoundland. ${ }^{\text {Prand.... }}$ | $8,272,925$ | 21,766, 871 | 3, 840,423 | 2,707,935 | 536 | 1,550,966 |
| Prince Edward Island | 1,921,120 | 6,912,801 | 1,549,506 | 1,360,113 | 167 | 496,028 |
| Nova Scotis. | 26,723,577 | 78, 280,074 | 17,783,945 | 15, 157,471 | 1,865 | 6,290,451 |
| New Brunswic | 29,495,108 | 74,907,834 | 16,285,794 | 14,054,631 | 1,536 | 5,712,717 |
| Quebec ${ }^{2}$ | 611,739,931 | 1,903,519,742 | 455, 879, 926 | 395,321,591 | 16,474 ${ }^{5}$ | 79,022,342 ${ }^{5}$ |
| Ontario ${ }^{4}$ | 15,287,604 | 43, 858, 807 | 14,989,137 | 11,026,542 | 19,924 | 92,661,374 |
| Manitoba | 12,753,498 | 148,049,435 | 25,284,281 | 24,718,690 | 3,747 | 13,722,127 |
| Saskatchewa | 18,548,099 | 130,907.732 | 28,313,373 | 25,024,462 | 1,922 | 8,737,228 |
| Alberta. | 32,591,950 | 197,797,162 | 45, 183, 403 | 39, 985,164 | 4,443 | 19,191,836 |
| British Columbia | 121, 968,393 | 320, 356,577 | 70,099,667 | 60, 992,886 | 5,697 | 26,775,241 |
| Yukon Territory | 65,000 | 34,684 | 24,558 | 21,170 | 3 | 18,550 |
| Northwest Territories. | 57,200 | 135,740 | 72,181 | 57,514 | 8 | 28,874 |
| Canada | 879,424,405 | 2,926,527,459 | 679,306,194 | 590,428,169 | 56,322 | 254,207,734 |

[^251] Telephone Company, which operates in Quebec, Ontario, Newfoundland and the Northwest Territories. 4 Includes data of Northern Telephone Limited, which operates in Ontario and Quebec. ${ }_{5}$ Includes 57 full-time Bell Telephone Company employees in Newfoundland and the Northwest Territories.

## Subsection 3.-Telegraphs

Public telegraph service in Canada is, for the most part, furnished by the railway companies through their telecommunications departments. The preponderance of this service is provided by Canadian National and Canadian Pacific. Both major telecommunication companies were at one time engaged primarily in meeting the communications needs of the railways and in handling telegrams and cablegrams for the public. While continuing with these activities they have kept pace with modern technological advances and are now providing a wide range of services which include data processing systems, radio and television network services, facsimile and wire photo services, telemetering, complex teletype and data switching centres, and other forms of voice and record communications.

Canadian National-Canadian Pacific telex service, established in 1956, has had very good public acceptance. At the end of 1962 there were about 5,000 customer installations in Canada, each having access to the other and also to world-wide telex networks in other countries.

In 1962, Canadian National and Canadian Pacific commenced construction of a highgrade microwave radio relay system between Montreal and Vancouver. The new system, to be completed in late 1963, is designed to serve Ottawa, Toronto, Sudbury, the Lakehead, Winnipeg, Saskatoon, Regina, Edmonton, Calgary and Kamloops, as well as the terminal points at Montreal and Vancouver. Because of the high value of such a system for national defence, it will be routed to by-pass military target areas. At the outset it will be capable of carrying 600 voice channels which may be used for the transmission of all forms of voice and record communications. The system can be expanded readily by the addition of radio channels to provide network television service or increased circuitry for general communications use. The new system will link up with the system already in operation from St . John's, Nfld., to Montreal, thus providing microwave service across the Continent.

Increased industrial and military interests in the Canadian northwest have created a need for all forms of communications services, and to meet these Canadian National Telecommunications (CNT) undertook several major projects. The first of these was a 1,200-mile microwave system between northern Alberta and the Yukon-Alaska border, which was completed in July 1961. Starting at Grande Prairie, 450 miles north of Edmonton, this network proceeds northward through Alberta, crosses the northeast corner of British Columbia and, following the Alaska Highway through Yukon Territory, joins an interchange system at Mount Dave on the Yukon-Alaska border. At Grande Prairie, the CNT system joins the Alberta Government telephone system running southward through Alberta to the Canada-United States border, where it connects with United States networks.

In the summer of 1961, CNT completed construction of a land-line communications network stretching around Great Slave Lake from Fort Smith on the Alberta-Northwest Territories border to Yellowknife, bringing the full range of communications services to residents of Yellowknife, Fort Rae, Fort Providence, Hay River, Pine Point and Fort Smith. This network is connected to the 'outside' by a microwave system between Hay River and Edmonton; the section of the microwave system within the Northwest Territories was constructed by CNT and the Alberta section by the Alberta Government Telephone Company.

In 1962, approval was given to CNT to construct a 1,020 -mile telephone pole-line down the length of the Mackenzie River from Hay River to Inuvik. When completed in 1965 this project will provide simultaneous long-distance telephone, teletype, telex, commercial telegraphs, air operational and weather communications to Fort Simpson, Wrigley, Fort Norman, Norman Wells, Fort Good Hope and Inuvik. In addition, Aklavik, Fort McPherson and Arctic Red River will be linked to the system at Inuvik by very high frequency radio communications. Service will be instituted at successive communities as construction of the line proceeds northward.

In late 1962, CNT started construction of a tropospheric scatterwave communications system which will extend from Hay River in the Northwest Territories to Lady Franklin Point on Victoria Island in the Arctic Archipelago. Some channels of this 554-mile system, to be completed by the end of 1963, will be used for defence purposes and, in addition, the system will enable CNT to provide various types of communications services to such outlying communities as Coppermine and Cambridge Bay.

CNT has also made a major entry in the field of public telephone service. In Newfoundland, it provides public telephone service at Gander and at many smaller communities throughout that province. At the end of 1962 there were over 8,000 telephones connected to CNT exchanges in Newfoundland. CNT telephone exchanges also provide service to the public in the Yukon and Northwest Territories and in northern British Columbia. CNT local and long-distance telephone service is available in such northern communities


Massive antenna installations at the Hay River, N.W.T., terminal of the Tropospheric Scatterwave system; similar installations are being made at Snare Falls, Port Radium and Lady Franklin Point.

Pole-line construction in the isolated North is adapted to local conditions; where heavy rock or permafrost is encountered, tripod installations are used.

as Hay River, Fort Smith, Yellowknife, Fort Nelson, Watson Lake, Cassiar, Whitehorse, Mayo, Elsa, Keno and Dawson. Service to the latter points north of Whitehorse is provided over a CNT land-line between Whitehorse and Dawson. The total number of telephones in service in the Yukon and Northwest Territories is in excess of 6,000, almost 3,000 of them in Whitehorse alone.

Telegraph Statistics.-At the end of 1961 nine telegraph and cable companies were in operation in Canada. These systems, composed of lines owned by the chartered railway and telegraph companies, including the Canadian Overseas Telecommunication Corporation (see below), increased their property and equipment to $\$ 299,568,298,12$ p.c. above that reported in 1960. Both operating revenues and expenses continued to increase and net income decreased to $\$ 10,696,819$, 10 p.c. below the 1960 figure. Fewer telegrams were sent, the lowest number since 1942, but cablegrams continued to increase.

## 6.-Summary Statistics of Canadian Telegraphs, 1952-61

Nore.-Figures from 1920 are given in the corresponding table of previous Year Books beginning with the 1938 edition.

| Year | Operating Revenues | Operating Expenses | Net <br> Operating Revenue | $\begin{gathered} \text { Pole- } \\ \text { Line } \\ \text { Milage } \end{gathered}$ | Wire Milage | $\underset{\text { ployees }}{ }$ | Messages, Land ${ }^{2}$ | Cablegrams and Marconigrams $^{3}$ | Money Transferred |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | miles | miles | No. | No. | No. | \$ |
| 1952. | 33,093,843 | 31,617,156 | 1,476, 687 | 52,699 | 437,581 | 11,272 | 21,614,196 | 1,934, 433 | 19,514,490 |
| 1953. | 36,920,384 | 33, 953, 196 | 2,967,188 | 52,727 | 450,835 | 11,618 | 21,222,706 | 2,042,921 | 21,553,387 |
| 1954 | 38,203,590 | 33,203, 942 | 4,999,648 | 46,284 | 434,178 | 10,629 | 19,906, 354 | 2,105,513 | 21,550,372 |
| 1955. | 39,320,960 | 32,501, 844 | 6,819,116 | 48,067 | 438,692 | 10,852 | 20,067, 424 | 2,238, 433 | 23, 264,851 |
| 1956. | 40,720,213 | 33,688,888 | 7,031,325 | 48,062 | 442,891 | 10,833 | 20,381,641 | 2,429,893 | 24,295,308 |
| 1957. | 44,796,778 | 39,271, 893 | 5,524,885 | 48,379 | 451,669 | 11,159 | 19,163,723 | 2,530,745 | 25,586, 057 |
| 1958. | 47,633,991 | 39, 908,538 | 7,725,453 | 47,495 | 464,661 | 10,587 | 17,296,786 | 2,499,871 | 24, 434, 887 |
| 1959. | 52,962,913 | 43,511, 666 | 9,451,247 | 47,470 | 486,875 | 10,586 | 16,390,997 | 2,602,974 | 25,589, 067 |
| 1960. | 58,546,167 | 45,538,063 | 13,008,104 | 48,159 | 510,640 | 10,279 | 15,546, 292 | 2,663,598 | 25,134,534 |
| 1961. | 64,053,626 | 51,735,006 | 12,318,620 | 48,511 | 524,720 | 9,997 | 15,138,706 | 2,809,691 | 25, 041,156 |

${ }_{1}^{1}$ Excludes commission operators. $\quad{ }^{2}$ Includes messages to and from vessels on the Great Lakes and the St. Lawrence River and messages to and from stations. ${ }^{3}$ Excludes relayed messages.

## Subsection 4.-Overseas Telecommunications Services

The Canadian Overseas Telecommunication Corporation 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.

In 1952 the Corporation commenced an expansion program of overseas services designed to meet future requirements and the following services have so far been established: direct telegraph, telephone and telex communications between Canada and Argentina, Australia, Barbados, Bermuda, Britain, Denmark, Finland, France, Germany, Italy, Jamaica, Japan, Netherlands, New Zealand, Norway, Sweden and Switzerland.

In 1956 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. Apart from normal use of the system for public telephone and telegraph message traffic, capacity is available for private leased circuits. The Corporation introduced international telex service to Canada in 1956 and service with 75 countries is available. The first transatlantic slow-scan
television pictures were transmitted between Canada and Britain in 1959. In addition, 55 telephone circuits have been provided by cable and microwave for use between the mainland and Newfoundland.

The Canada-Britain 80-circuit telephone cable (CANTAT) was opened for service on Dec. 19, 1961. The Canada-Greenland-Iceland 24-circuit telephone cable (ICECAN), primarily provided to meet the North Atlantic communication needs of international civil aviation, was opened for service on Jan. 1, 1963. Its connecting counterpart between Iceland and Scotland (SCOTICE) was brought into service on Jan. 22, 1962. A four-party project (Canada-Britain-Australia and New Zealand) will provide a Canada-New ZealandAustralia 80 -circuit telephone cable (COMPAC). This section of a Commonwealth round-the-world telephone cable system is scheduled for completion in late 1963. The Tasman section between Australia and New Zealand was opened July 9, 1962. Arrangements were completed for the right of use of a number of circuits for Canadian purposes in a telephone cable system connecting Bermuda and the United States brought into operation in January 1962, and in a telephone cable system connecting Jamaica and the United States brought into operation in February 1963. A six-party (Canada-Britain-AustraliaNew Zealand-Singapore and the Federation of Malaya) section of the Commonwealth round-the-world telephone cable system, scheduled for completion in 1966, will provide an Australia-New Guinea-North Borneo-Singapore-Malaya and Hong Kong 80-circuit telephone cable (SEACOM).

In addition to the overseas services operated by the Canadian Overseas Telecommunication Corporation, two cable companies operate submarine cables landing in Canadathe Commercial Cable Company and the Western Union Telegraph Company. These companies operate to stations in Britain, Ireland, the United States, the Azores and St. Pierre and Miquelon Islands.

A list of cables landed in Canada is given in Table 7.
7.-External Cables Landed in Canada, 1962

| Company and Station | Cables | Nautical Miles |
| :---: | :---: | :---: |
|  | No. | No. |
| Canadian Overseas Telecommunication Corporation (COTC)Halifax, N.S. via Azores to Porthcurno, England |  | 3,078 |
| Port Alberni, B.C. to Auckland, New Zealand. | 1 | 6,748 |
| Port Alberni, B.C. to Sydney, Australia................ |  | 7,830 |
| Hampden, Nfid. to Oban Scotland (CANTAT)........... |  | ${ }_{2}^{2,010}$ |
| Hampden, Nfld to Vestmannaeyjar, Iceland via Greenland. | 1 | 1,657 |
| Commerclal Cable Company (CCC)- |  |  |
| St. John's, Nfld. to Waterville, Ireland | $4^{4}$ | 7,086 |
| St. John's, Nfld. to New York, N.Y., U.S.A | ${ }_{2}^{2}$ | ${ }^{2}, 5887$ |
| Canso, N.S. via Azores to Iremand. ${ }^{\text {Com }}$ | ${ }_{2}^{2}$ |  |
| Canso, N.S. to St. John's, Nfid....... | 2 | 913 |
| Western Unlon Telegraph Company (WU)- |  |  |
| Bay Roberts, Nfld. to Penzance, England. | 4 | 8,479 |
| Bay Roberts, Nfld. to Hammil, N.Y., U.S.A. | 2 | 2,778 |
| Bay Roberts, Nfld. to Azores |  | 1,343 |
| Heart's Content, Nfld. to Valencia, Ireland. |  | 7,541 |
| Placentia, Nfld. to St. Pierre and Miquelon Islands | 2 | 250 |
| North Sydney, N.S. to St. Pierre and Miquelon Islands. | 3 | 594 |
| North Sydney, N.S. via Canso to Duxbury, Mass., U.S.A | 1 | ${ }_{695}^{695}$ |
| North Sydney, N.S. to Island Cove, Nf | $\stackrel{2}{1}$ | ${ }_{323}^{635}$ |
| Island Cove, Nfid. to St. Pierre and Miquelon Islands. | 1 | ${ }_{130}$ |
| Eastern Telephone and Telegraph Company (ET\&T) |  |  |
| Sydney Mines, N.S. via Clarenville, Nffd. to Oban, Scotland ${ }^{\text {... }}$ |  | 2,280 |
| Sydney Mines, N.S. via Clarenville, Nfid. to Penmarch, France | 2 | 2,400 |
| New Brunswick Telephone Company Limited (NBTEL)Campobello Island, N.B. to Lubec, Me. U.S. A. | 1 | 0.3 |

[^252]
## Subsection 5.-Meteorological Communications

Weather stations operated by the Meteorological Branch of the 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. The radio circuits are operated chiefly by the Telecommunications and Electronics Branch of the federal Department of Transport.

Weather stations on the teletype network transmit their reports directly; other stations report via commercial 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-tocoast teletype systems transmitting weather information, with main relay points at Vancouver, Edmonton, Winnipeg, Toronto, Montreal, Halifax, Gander and Goose Bay. These main meteorological communications centres not only handle the distribution of weather information within Canada including the Arctic, but 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 55,300 miles of teletype circuits connecting 350 teletype offices.

In addition, a facsimile network connects forecast offices including radio facsimile transmission to Arctic stations and ships at sea. Weather charts originating at the Central Analysis Office in Montreal receive national distribution over this network. Regional transmissions of additional charts are distributed on a local basis. Altogether, the Meteorological Branch utilizes 14,600 miles of facsimile circuits, serving 71 offices.

## Subsection 6.-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 and administration of government policy with respect to the Canadian Overseas Telecommunication Corporation and Canada's participation on the Commonwealth Telecommunications Board; (5) administration of the leasing of land-line facilities required for all services of the Department; (6) planning of emergency measures and administration of the Emergency National Telecommunication Organization (ENTO); (7) administration of the Telegraphs Act and the Regulations thereunder covering the licensing of overseas submarine cables; (8) participation in the work of the International Telecommunication Union and its subsidiary organs; and (9) 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 antenna system must be approved by the Department of Transport and notification sent to the signatory countries of the North American Regional Broadcasting Agreement before a new broadcasting station can be licensed or before modification can be made in an existing station. The setting of standards for the equipment, installation and operation of a station provides control for efficient use of the radio spectrum. A further control is the requirement that operating personnel be subject to examination and certification.

Eight monitoring stations are maintained at suitable points across Canada to make frequency measurements and record transmissions to ensure that radio stations are complying with the procedures set forth for their particular service, to detect non-licensed stations, to assist in the investigation of inter-station interference and to make studies of spectrum utilization.

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 comes up to 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 stations 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. Inflight inspections of the radio communications and navigational aspects of proposed new air carrier operations, encompassing both land 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 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 and Operated in Canada.-During the year ended Mar. 31, 1963, 98,485 licences were issued in respect of radio stations in Canada. This figure includes stations operated by departments of the federal, provincial and municipal governments, stations on ships and aircraft registered in Canada and mobile stations operating in the public and private land mobile services but does not include private commercial broadcasting licences.

| Item | Mar. 31, 196\% | Ended Mar. 31, 1963 |
| :---: | :---: | :---: |
|  | No. | No. |
| New applications received. | 15,714 | 16,540 |
| Authorizations granted. | 17,000 | 14,510 |
| Licences cancelled. | 6,580 | 7,933 |
| Licences renewed. | 61, 162 | 71,396 |
| Amateur licences issued. | 9,347 | 10,182 |
| General radio service licences issued | , | 13,579 |
| Total licences issued. | 79,329 | 98,485 |
| Licence amendments. | 19,851 | 22,832 |
| Certificates of registration issued to U | 1,630 | 1,831 |
| Net increase over preceding year. | 11,487 | 19,156 |

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 classes of such equipment. The Telecommunications and Electronics Branch of the Department of Transport provides also 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.

Cars equipped for measuring and locating sources of interference operate from offices located in 30 cities throughout Canada; 29,526 cases were dealt with during the fiscal year 1962-63. Sources include power lines, auto ignitions, heavy electrical equipment, domestic appliances, electro-medical apparatus, industrial radio frequency generators and TV receivers.

Regulations specifying the limits to be met by particular types of apparatus are contained in the Radio Noise Limits Order. 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.

Radio Aids to Marine and Aeronautical Navigation.-The services of the Telecommunications and Electronics Branch of the Department of Transport in aid of marine and aeronautical navigation are outlined in the 1962 Year Book, at pp. 848-850. Details may be obtained on request from the Department of Transport, Ottawa.

## Subsection 7.-Public and Private Commercial Microwave Facilities

Because of its population distribution and the vast areas served by microwave communication links, Canada ranks second highest among the world's users of microwave communication systems on a per capita/per mile basis. This subsection gives a summary of the facilities existing or under construction at mid-1963.

Railways.-As already stated on pp. 825-828, the Canadian National and Canadian Pacific Telecommunications Departments' existing microwave system links Ontario, Quebec and parts of the Maritimes and Newfoundland. A major expansion under way will provide communication services from coast to coast for television, telephone and data relay purposes. In addition, Canadian National Telecommunications 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 these areas. In co-operation with Alberta Government Telephones, a combination microwave and tropospheric-scatter system connects Alberta and the Northwest Territories, also intended to provide communication for civil and military use in Far North areas. The Quebec North Shore-Labrador Railways have developed a microwave system extending into northern Quebec to provide communication for mining operations and to serve some civil communication purposes. Ontario Northland Railway is in the process of completing a microwave installation connecting northern Ontario and James Bay for purposes of military and civil communication. The Pacific and Great Eastern Railway has made use of an extensive $6,000 \mathrm{Mc} / \mathrm{s}$ microwave system linking Vancouver with Prince George and Dawson Creek, B.C.

Telephones.-The Trans-Canada Telephone System consists of eight provincial and private communication companies serving the various provinces and collectively providing an extensive trans-Canada microwave system for the purpose of carrying telephone, television and data transmissions from coast to coast (see also p. 821). This organization utilizes the portions of the radio spectrum in the $450,900,4,000,6,000$ and $10,000 \mathrm{Mc} / \mathrm{s}$ bands. Member companies individually operate microwave systems into northern British Columbia, Alberta, Saskatchewan, Manitoba and Ontario, in addition to the main TD-2 cross-country radio systems. These routes provide service to civil and military organizations throughout the various provinces. Tropospheric-scatter systems in British Columbia, Manitoba and Quebec are necessary for communications beyond the reach of existing microwave systems. Numerous microwave television feeds are located in areas not served by the trans-Canada system for the purpose of interconnecting outlying areas with the television networks.

Hydro.-The Quebec Hydro-Electric Commission, The Hydro-Electric Power Commission of Ontario, Manitoba Hydro, the Saskatchewan Power Corporation, the Calgary Power Corporation and the British Columbia Hydro and Power Authority utilize considerable microwave radio systems for control and communication purposes. These organizations use portions of the radio spectrum from 450 to $10,000 \mathrm{Gc} / \mathrm{s}$.

Television.-The two main television interests in Canada, the CBC and CTV, lease private microwave facilities for the relay of television programs from coast to coast. In addition to this, 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-air pickup 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 pickup where program material is intended for the main studio.

Industrial.-Many industrial firms utilize existing public communication facilities. However, some organizations have installed private microwave systems; for example, The Aluminum Company of Canada uses a multiple hop $6,000 \mathrm{Mc} / \mathrm{s}$ system in the Arvida, Que., area.

## Subsection 8.-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, fire, engineering, hydro, etc. Such services as taxi, heavy construction, ready-mix concrete, oil pipeline construction and operation, veterinarian and rural medical are participating extensively in the use of radio.

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 fields.

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. In 1962 a General Radio Service was established authorizing the licensing of low-power radio stations to permit short distance personal and private business radiotelephone communications. This new service has proved quite popular, nearly 14,000 licences having been issued during 1962-63.

## Subsection 9.-Radio and Television Broadcasting*

Broadcasting in Canada has developed over a period of some forty-five 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 about 92 p.c. of the Canadian population.

[^253]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 105 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 also p. 105.) The Canadian Broadcasting Corporation consists of a President and a VicePresident 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. 117-118.)

The Broadcasting 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 effecting changes in the regulations under the Radio Act. Before making the 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 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 Broadcasting Stations Regulations and the Radio (TV) Broadcasting Regulations applying to radio and television stations respectively; these regulations cover all aspects of station operation and the enforcement of them as the responsibility of the Board.

Broadcasting Facilities.-As of Apr. 1, 1963, there were in operation in Canada some 38 CBC radio stations plus another 100 low-power relay transmitters maintained by the Corporation, and 14 CBC television stations plus about 95 rebroadcasting and network relay stations. On the same date there were 261 privately owned radio stations in operation
and 134 privately owned television broadcasting and relay stations. All but 11 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 11 unaffiliated private television stations, nine form the Canadian Television Network (CTV) which commenced operating in the fall of 1961. The other two stations, in Hamilton and Montreal, are independent of any network affiliation. Of the 261 private radio stations, 219 were AM standard band stations, 36 were FM stations and six were shortwave stations; 12 of the 36 FM stations operated on the new Multiplex Stereophonic system.

## Operations of the Canadian Broadcasting Corporation, 1962-63*

Television.-The CBC in 1962 celebrated its tenth anniversary in television. During the year, as a direct result of new stations being placed in operation and improvement to existing stations, CBC television became available to an additional 247,000 Canadians and service extended to reach about 92 p.c. of the Canadian population. Making service available to the other 8 p.c. is becoming increasingly difficult and expensive since many of them live in isolated communities sometimes thousands of miles from the main east-west lines of communication. The expansion during 1962 was into the northern areas where costs were not too prohibitive. New rebroadcasting stations were completed at Grande Prairie and Peace River in Alberta, The Pas in Manitoba, Dryden and Sioux Lookout in Ontario, and Courtenay in British Columbia, and rebroadcasting stations of the French network were completed at Sudbury in Ontario and Timiskaming in Quebec. A kinescopeprogrammed station was completed at Flin Flon in Manitoba and a new network relay station began operating at Cranbrook, B.C. Many projects to improve or extend service were under way at the end of the year. Notable among them were the new Head Office building at Ottawa, consolidation of facilities at Toronto and Montreal, relocation and increase in power of the CBLT transmitter and tower at Toronto, and a network relay centre at Winnipeg.

The complexities of CBC television broadcasting have greatly increased in recent years in the administrative area and as a result of the setting up of an entirely separate, wholly commercial television network (CTV). Of significance, too, are the recently expanding activities of community antenna television service (CATV)-operated by unlicensed systems which pick up programs produced by licensed television stations from the air and distribute them by means of cable to subscribers who pay a fee for the service-and the changing role of the rebroadcasting stations. Both systems were developed originally to bring service to remote communities but the implications of their use in already serviced communities is beginning to emerge. The future of the CATV service was discussed at a public hearing of the Board of Broadcast Governors in June 1963.

With coverage gaps narrowing, the CBC is turning its attention more and more to improvement of facilities and programming to fulfil its basic purpose of maintaining a complete service with a wide range of fare for all tastes, bringing Canadians in widely separated parts of the country closer together and serving the various geographical regions equitably.

Armed Forces Service.-The Armed Forces Service arranged the supply of a weekly package of kine-recordings of popular CBC television programs to bases of the Canadian Armed Forces in Europe, the Middle East and the Congo and, for the third season, organized a tour of a CBC Concert Party to the NATO bases in France and Germany and to the UNEF bases in the Middle East. Live coverage of major news and sports events, such as the federal elections in June 1962 and April 1963 and the Grey Cup, was also provided to bases in France and Germany through transatlantic cable.

[^254]Radio.-A milestone in the long history of CBC radio was reached on Oct. 1, 1962, with the inauguration of the new CBC Radio Network consolidating the English-language Trans-Canada and Dominion Networks. The purpose of the consolidation was to provide a schedule of broadcasting balanced in terms of subject matter and of the relative positioning of spoken word and music within each program day. To a large extent, the programs of the new network are carried by microwave facilities, thus providing a quality and reliability not previously attained by radio network operations.

During the year, English radio network was extended to new low-power relay transmitters at Noranda in Quebec, Andover and St. Stephen in New Brunswick, Uranium City in Saskatchewan and Nakusp in British Columbia. The French network was extended to service new low-power relay transmitters at Hearst in Ontario and Wedgeport in Nova Scotia and to three privately owned affiliated stations at Trois Rivières, Roberval and La Tuque in Quebec. CBC stations at Halifax and Sydney in Nova Scotia and at Grand Falls in Newfoundland were increased in power.

Because of budget restrictions arising out of the Government's austerity program, the experimental FM network between Toronto, Ottawa and Montreal was closed on Oct. 31, 1962. However, the experience gained during its thirty months of operation was of great benefit to both the Corporation and the network supplier. The three stations are broadcasting AM service with some separate FM programming included on a non-network basis until finances permit resumption of FM network services.

In 1962 the CBC developed an emergency broadcasting plan to meet its responsibilities in connection with the Emergency Measures Organization, making it possible for every radio and television station in Canada to be connected within five minutes to emergency radio networks in order to broadcast instructions and information to the public in the event of a national emergency. This service was suspended in the fall but reactivated on June 30, 1963.

Northern Service.-The Northern Service, established in 1958, extends the national radio broadcasting system to the Yukon and Northwest Territories and to the northern portions of all provinces except the Maritimes. With the recent addition of a third highpower transmitter at Sackville, N.B., the Northern Service shortwave schedule was increased from eight to nine and one-half hours daily. In addition to the CBC network programs provided on shortwave, the Northern Service produced programs of special interest to its listeners, such as Uqausi, an Eskimo-language program of messages, news, views and music prepared by Eskimo personnel, Arctic Window, a program of interviews with visitors to the North, and The Commissioner Replies on which questions submitted by residents are answered on the air by the Commissioner of the Northwest Territories. A number of programs prepared with the co-operation of the Northern Service were carried on the full CBC radio network, including programs originating from the Dawson City Festival held in the summer of 1962. Tape recordings of National Service programs were supplied to a number of RCAF and Mid-Canada line stations which had their own low-power radio stations.

International Service.-The CBC International Service is operated on behalf of the people of Canada to provide information about this country to listeners in other lands. Shortwave programs are broadcast in 11 languages daily to Europe, Africa, Latin America, the Caribbean, Australia and New Zealand. Despite the fact that television is being introduced in more and more countries, radio broadcasting and listening show no signs of decreasing. In fact, radio broadcasting, both medium and shortwave, is being expanded particularly in those underdeveloped countries that have recently achieved nationhood.

A notable fact on the international broadcasting scene is the growing interest in the exchange of programs, which opens up wider possibilities for the CBC International Service in the realm of music and also in the area of special events where rapid transmission is vitally important. All sections of the International Service prepared programs dealing with the political developments in Ottawa, including the dissolution of the 25 th Parliament; the German-language section, for example, relayed twice as many programs to the German
networks as it did in the preceding year. Twenty-four items on cultural and sports topics were shipped to Radio Moscow and virtually all of them were heard by Russian listeners. Programs for philatelists continued to generate great interest and the programs, broadly classified under the heading of Letter Box, on which listeners' mail is answered on the air, found a wide audience. News, news reports and commentaries continued to be the mainstay of the shortwave service. The monthly $15-$ minute television program Canada Magazine was distributed to an increased number of broadcasting organizations.

International Relations.-In mid-1962, the launching of Telstar heralded the coming era of 'live' international television. Meantime, the CBC has recently increased its contracts with other broadcasting organizations in the world in anticipation of increasing television exchanges, which will be done initially by means of television recordings. A healthy exchange of programs with many countries is already in progress both in television and radio. For example, most countries have contributed teen-age radio programs to CBC's Countdown series. Commonwealth countries show particular interest in CBC drama, Europe in variety programs, Japan in sports, and Russia in farm and fisheries. Frenchlanguage program exchanges have been most active, particularly with Belgium and Switzerland. In April 1963, CBC delivered its third contribution to a series of high-quality documentaries being produced for TV by Intertel, a four-nation (Britain, Australia, United States and Canada) partnership.

In May 1963, Canada for the first time acted as host for a Commonwealth Broadcasting Conference. This event was the fifth conference of its kind, and the meetings were held in Montreal and Montebello, Que., Toronto, Ont., and Banff, Alta. Fourteen publicly owned national broadcasting organizations of the Commonwealth were represented. Delegates discussed matters of mutual concern and interest in the programming and engineering field, as well as legal and other problems affecting broadcasting as a whole.

CBC activities in the field of external aid involving co-operation in training, instruction and secondment date back for many years. Recently, however, these activities have increased markedly, mainly because of the determination of the developing countries of Asia and Africa to bring to fruition their plans for broadcast communication services. For instance, two senior employees are spending two years in Ghana, working toward the development of television service in that country which will start in 1964; 26 Ghanaians are being given preliminary training in Ghana before coming to Canada for advanced training with the CBC. Also, a CBC senior program officer is acting as adviser to the Director of TV in Malaya and a number of Malayans will later be trained in Canada. Other less formal assistance has been given to countries of the West Indies, to British Guiana, Israel, Nigeria, Formosa and Japan, and requests for assistance have been received from such countries as Cambodia, Morocco, Jamaica and Viet Nam.

Finance.-The CBC, being a Crown corporation, is financed through public funds authorized by Parliament and through commercial advertising. In 1962, commercial revenue accounted for about 30 p.c. of the Corporation's income. However, the advent of many privately owned second stations and the second TV network has had an adverse effect on CBC commercial returns. It should be pointed out that such revenue cannot be expected to grow significantly beyond present levels, 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 for 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 0.7 -p.c. increase in expenditures in $1962-63$ over the previous year to the amount of $\$ 108,365,882$. The first estimates of net operating requirements from public funds amounted to $\$ 74,994,000$ which was subsequently reduced to $\$ 73,994,000$ as a result of the economy program introduced in July 1962.

This amount was under-expended by $\$ 1,339,262$. Advertising revenues at $\$ 30,846,627$ showed a $6.3-$ p.c. reduction from 1961-62, which accounted for much of the increase in net operating expenditures.
8.-Financial Statement of CBC Operations, Years Ended Mar. 31, 1962 and 1963

| Item | 1961-62 | 1962-63 |
| :---: | :---: | :---: |
| Expenses- |  |  |
| Production and Distribution- |  |  |
| Cost of programs. | 68,361,465 | 70,005,498 |
| Network distribution | 10,061,504 | 10,145,968 |
| Station transmission. | 3,893,146 | 4,020,540 |
| Payment to private stations | 4,851,069 | 4,334,789 |
| Commissions to agencies and networks | 4,620,207 | 3,872,204 |
| Emergency broadcasting. | 13,182 | 282,540 |
| Operational supervision and services. | 8,842,942 | 8,426,592 |
| Selling and Administration- |  |  |
| Selling expense... | 1,540,736 | 1,646,990 |
| Engineering and development. | 943,128 | 1,080,411 |
| Management and central services | 4,483,775 | 4,541,350 |
| Totals, Expenses. | 107,611,154 | 108,365,882 |
| Income- ${ }_{70}$ |  |  |
| Parliamentary grant. | 70,252,273 | 72,654,738 |
| Advertising revenue (gross) | 32,910,118 | - $30,846,627$ |
| Interest on investments. | 185,291 224,431 | 202,067 |
| Totals, Income. | 103,572,113 | 104,057,330 |
| Depreciation included with total expenses. . | 4,039,041 | 4,308,552 |
|  | 107,611,154 | 108,365,882 |

Statistics of the Radio and Television Broadcasting Industry.-In 1961, for the first time, the Dominion Bureau of Statistics co-operated with the Board of Broadcast Governors and the Department of Transport in obtaining financial and other statistics of the Canadian radio and television broadcasting industry, summary results of which are given in the following tables. This co-operation made available much more detailed information than was possible previously; the figures given for earlier years were adjusted to make them comparable with those presented for 1961. Table 9 covers the operations of the whole industry, including the CBC and Table 10 gives the main items separately for radio and television broadcasting.

The operating revenue of the broadcasting industry in 1961 amounted to $\$ 110,600,000$, an increase of 6 p.c. over the previous year. Of this total, radio broadcasting contributed 46.6 p.c. as compared with 49.4 p.c. of the total revenue in 1960 . Advertising revenues rose about 4 p.c. during the year. With the advent of eight new privately owned TV stations, more revenue was received from local and national advertising and from advertising carried by private networks than in 1960, but less was received from advertising carried on the publicly operated networks of the CBC; there was an increase of 9.3 p.c. in revenues from privately operated networks and national advertising, an increase of 8.9 p.c. from local advertising, and a decrease of 13.8 p.c. from public network advertising.

Operating expenditures in 1961 reached a total of $\$ 181,000,000$, an increase of 15 p.c. over 1960. The higher rate of increase in expenditures than in revenues changed the overall operating profit of $\$ 6,076,000$ recorded in 1960 to a loss of $\$ 228,000$ in 1961. After adjusting the operating profit or loss on account of other income and expenses and income taxes paid by the profitable firms, the final net loss of the private sector of the broadcasting industry for 1961 amounted to $\$ 2,700,000$ compared with a profit of $\$ 5,000,000$ in 1960 . There are no CBC profits or losses in the figure of net income before taxes because the unexpended balance of the Parliamentary grant is treated as an account due to the Government of Canada.

## 9.-Revenue, Expenditure and Employee Statistics of the Radio and Television Broadcasting Industry, 1956-61

| Item | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | \$ | \$ | \$ |
| Operating Revenue and Grants |  |  |  |  |  |  |
| Broadcasting Revenue from- |  |  |  |  |  |  |
| Advertising carried on publiclyoperated networks. | 14,717, 133 | 13,097,332 | 19,640,855 | 24,457,000 | 24,239,000 | 20,966,918 |
| Privately-operated network and national advertising. | 23,852,732 | 27, 877, 972 | 32,407, 233 | 37, 818,000 | 40,679,000 | 44,470,753 |
| Local advertising................. | 26,921,305 | 26, 958,334 | 29,293,009 | 33,464,000 | 35, 323,000 | 38,472,015 |
| Non-broadcasting revenue. | 956,968 | 3,183,950 | 4,020,511 | 4,132,000 | 4,142,000 | 6,679,486 |
| Grants. | 37,191, 971 | 41, 177, 181 | 54, 120,031 | 52,300,000 | 59,289,000 | 70,252,273 |
| otais, Operating Reven | 103,640,109 | 117,294,769 | 139,481,639 | 152,171,000 | 163,672,000 | 180,841,445 |
| Operating Expenditure ${ }^{1}$ |  |  |  |  |  |  |
| Representative agency commissions. | 2,133,159 | 2,723,093 | 3,071,858 | 3,533,000 | 3,880,000 | 4,303,323 |
| Interest charges.................. |  |  |  |  |  | 1,902,593 |
| Depreciation and amortization of leasehold improvements. | $\cdots$ | .. | . | . | .. | 6,218,805 |
| Rent, repairs and maintenance, property taxes, fuel and electricity.. |  |  |  |  |  | 11,904,467 |
| Salaries and wages................... | 40,115,689 | 47,288, 044 | 53,624,775 | 59,343,000 | 65,519,000 | 74,970,241 |
| Benefits........... |  |  |  |  |  | 3,539,240 |
| Artists' and other talent fees | 10,525,260 | 8,555,108 | 10,226, 194 | 14,837,000 | 16,422,000 | $18,650,171$ $5,647,731$ |
| Telephone and telegraph and outside services. | . | .. |  | . |  | 16,511,189 |
| Films, tapes, recordings-rental and purchased. | . | . |  | .. |  | 17,617,993 |
| Advertising and promotion.. | .. |  |  | . | $\ldots$ | 4,583,559 |
| Taxes and licences (other than income or property) <br> Other. | 41,289,426 | 61,134,951 | 61,749,748 | 65,397,000 | 71,775,000 | $\begin{array}{r} 1,293,566 \\ 13,926,095 \end{array}$ |
| Totals, Operating Expenditure | 94,063,534 | 119,701,196 | 128,672,575 | 143,110,000 | 157,596,000 | 181,068,973 |
| Net operating income. | +9,576,575 | -2,406, 427 | +10,809,064 | +9,061,000 | +6,076,000 | -227,528 |
| penses............................. | -2,663,062 | -208,413 | +73,377 | +3,636,000 | +3,790,000 | +1,057,260 |
| Income taxes. |  | 1,042,785 | 4,377,585 | 5,671,000 | 4,858,000 | 3,504,289 |
| Net income after taxes. | . | -3,657,625 | +6,504,856 | +7,026,000 | +5,008,000 | -2,674,557 |
| Average monthly number of employees. | 10,498 | 11,930 | 12,896 | 13,241 | 13,885 | 15,514 |

${ }^{1}$ Excludes advertising agency commissions which were estimated to be $\boldsymbol{\$ 1 0 , 6 3 6 , 3 2 8}$ in 1961.

## 10.-Summary Revenue, Expenditure and Employee Statistics of the Radio and Television Sectors of the Broadcasting Industry, 1961

| Item | Radio | Television | Total |
| :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ |
| Operating revenue. | 69,708,356 | 111,133,089 | 180, 841, 445 |
| Advertising. | 49,828,039 | 54,081,647 | 103,909, 686 |
| Grants. | 18,200,03s | 52,052,240 | 70,252,273 |
| Other. | 1,680,284 | 4,999,202 | 6,679,486 |
| Operating expenditure. | 66,904,979 | 114,163,994 | 181,068, 973 |
| Net operating revenue.. | 2,803,377 | -3,030,905 | -227, 528 |
| Average monthly number of employees. | 6,130 | 9,384 | 15,514 |

## Section 2.-The Post Office

The basic tasks of the Canadian Postal Service are to receive, convey and deliver postal matter with security and dispatch. In discharging these duties it maintains post offices and utilizes air, railway, land and water transportation facilities. 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 for COD articles, and the transaction of money order and Post Office Savings Bank business. Because of its widespread facilities, it has been found expedient for the Post Office to assist other government departments in the performance of certain tasks including the sale of unemployment insurance stamps, the collection of government annuity payments, the distribution of income tax forms and Civil Service employment application forms, and the display of government posters.

Post offices are established wherever the population warrants. Those in rural areas and small urban centres transact all of the functions of the city office. In larger urban areas postal stations and sub-post offices have full functions similar to the main post office, including a general delivery service, lock-box delivery and letter-carrier delivery.

At Mar. 31, 1962 there were 11,401 post offices in operation compared with 11,421 in 1961. Letter-carrier delivery, performed in 180 urban centres, employed over 8,400 uniformed letter carriers. Postage paid in 1961-62 by means of postage stamps amounted to $\$ 88,573,175$ as compared with $\$ 85,807,987$ in $1960-61$. 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 8,800 post offices and money orders payable in Canada only, for amounts not exceeding $\$ 15.99$, were sold at some 1,900 additional post offices. Post Office Savings Banks operate in all parts of the country and, on Mar. 31, 1962, had deposits totalling $\$ 27,365,119$.

The Operating Service of the Post Office Department is organized into 14 Districts, each under a District Director. Ten of the Districts report directly to the Assistant Deputy Postmaster General. In addition, there are two Regions, each consisting of two Districts and a major Post Office, under a Regional Director. These also report 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 located 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 were approximately 43,175 miles of airmail and air stage routes in Canada in 1962 compared with 41,825 miles in 1961. However, the railways are the principal means of mail transport; the railway mail service operates along 21,670 miles of track and, in 1962, covered more than $35,050,000$ service-miles. A staff of 619 mail clerks prepared the mails for delivery and dispatch while en route in railway mail cars.

The rural mail delivery organization provided direct postal service over approximately 5,637 rural mail routes in 1962, extending over 145,493 route-miles and serving 550,703 rural mail boxes. Rural mail routes are generally circular in pattern and average about 26 miles in length. About 1,913 side services were in operation to transport mail between post offices, railway stations, steamer wharves and airports, and 1,904 stage services operated to convey mail to and from post offices not located on railway lines. Transportation
of mail by motor vehicle on highways is expanding and over 390 such services were in operation in 1962, many of them replacing or reducing conveyance by rail. In 1962 there were 932 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. The 9,454 land-mail service couriers employed travelled approximately $54,000,000$ miles during the year; land-mail services are performed under a contract system. Coastal mail service is also conducted under contract; 29 contractors operated as far north along the West Coast as Alaska and on the East Coast to the northern part of Labrador in 1962.

The larger post offices in Canada may be described as intricate industrial plants where mail is unloaded, cancelled, transported and shipped by semi-automatic means. Conveyor belts, automatic chutes and other devices increase output of mail matter without increasing staff and all the larger offices are provided with the latest mechanical equipment. In some areas household mail is carried by mailmobile. In most cities, postage stamps may be obtained at any time from automatic vending machines and a curbside mail receptacle (snorkel) in which patrons may deposit mail without leaving their automobiles is coming into use. Electronic equipment checks money orders and accounts for the $\$ 900,000,000$ annually that they represent.

Post Office Statistics.-Tables 11 and 12 give the numbers of post offices in operation, together with revenue and expenditure for recent years.
11.-Post Offices in Operation, by Province, as at Mar. 31, 1958 and 1962

| Province | 1958 | 1962 | Province or Territory | 1958 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. |  | No. | No. |
| Newfoundland. | 641 | 660 | Saskatchewan. | 1,310 | 1,266 |
| Prince Edward Island | 105 | 107 | Alberta. | 1,112 | 1,070 |
| Nova Scotia. | 1,096 | 869 | British Columbia | 937 | 910 |
| New Brunswick | . 676 | 555 | Yukon Territory | 16 | 20 |
| Quebec. | 2,413 | 2,414 | Northwest Territories. | 36 | 40 |
| Manitoba | , 810 | , 804 | Canada | 11,768 | 11,401 |

12.-Revenue and Expenditure of the Post Office Department, Years Ended Mar. 31, 1958-62

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 ${ }^{1}$ | Expenditure ${ }^{2}$ | $\begin{aligned} & \text { Surplus (+) } \\ & \text { or } \\ & \text { Deficit (-) } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | \$ |
| 1958. | 177,492,783 | 152,919,881 | 153,319,782 | -399,901 |
| 1959. | 183,380, 508 | 157,630,336 | 157, 803,478 | -173,142 |
| 1980. | 193,659,715 | 167,629,053 | 165,792,339 | +1,836,714 |
| 1961. | 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 |

${ }^{1}$ Gross revenue less commissions and allowances to postmasters, and other small items. $\quad 2$ Excludes
rental of semi-staff and staff post offices.

The gross revenue receipts shown in Table 12 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 $1961-62$, was $\$ 88,573,175$ and receipts from postage meter or postage register impressions and postage paid in cash by other means amounted to $\$ 109,999,967$.

Auxiliary Postal Services.-Auxiliary postal services include the issuing of money orders and the operation of the Post Office Savings Bank.

Table 13 shows the amount of money order business conducted by the postal service in recent years. A statement on the financial business of the Post Office Savings Bank will be found in Chapter XXIII on Currency and Banking.

> 13.-Operations of the Money Order System, Years Ended Mar. 31, 1958-62

| Year | Money Order Offices in Canada | Money Orders Issued in Canada | Value of Orders Issued in Canada | Value Payable in- |  | Value of Orders Issued in Other Countries, Payable in Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Canada | Other <br> Countries |  |
|  | No. | No. | \$ | \$ | \$ | \$ |
| 1958.. | 10,934 | 52,898,954 | 845,647,439 | 818,333,292 | 27,314,147 | 5,394,568 |
| 1959. | 10,823 | 53,746,050 | 853,443,891 | 825, 973,053 | 27,470,837 | 5,026,970 |
| 1960. | 10,778 | 54,953,087 | 868,669,133 | 840,584,556 | 28,084,576 | 5,250,922 |
| 1961. | 11,098 | 55,939,421 | 886, 976, 976 | 858,278,412 | 28,698,563 | 5,505,224 |
| 1962.. | 10,708 | 56,252,265 | 893,512,291 | 867,182,785 | 26,329,506 | 5,940,795 |

## Section 3.-The Press*

Daily newspapers published in Canada numbered 115 in 1962, counting morning and evening editions separately. English and French dailies had an aggregate reported circulation of more than $4,146,000$-about 82 p.c. in English and 18 p.c. in French. Thirteen of those with circulations in excess of 100,000 accounted for over 55 p.c. of the circulation. French dailies, as would be expected, have their widest circulation in Quebec where nine of the 11 in existence in 1962 were published. Some of the largest of these papers have been established in that province for over 60 years. Weekly newspapers serve more people in rural communities than do the dailies. They cater to local interests and exercise an important influence in the areas they serve.

The Canadian Press, a co-operative organization owned and operated by Canada's daily newspapers, provides its 100 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.

The United Press International (British United Press) is a limited company in Canada and maintains a close association with the UPI World Service, of which it is an affiliate. From its headquarters in Montreal, it provides Canadian news for general world distribution as well as for 163 subscribers including 65 private broadcasting stations in Canada. Agence France Presse maintains offices in Montreal and Ottawa and certain foreign newspapers have agencies in Ottawa to interpret Canadian news for their readers.

[^255]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，ABC＇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．

14．－Estimated Numbers and Circulations of reporting English－Language，French－ Language and Foreign－Language Newspapers，by Province， 1961 and 1962

| Province or Territory | 1961 |  |  |  | 1962 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Daily |  | Weekly ${ }^{1}$ | Week－end | Daily |  | Weekly ${ }^{1}$ | Week－end |
|  | No． | Circulation ${ }^{2}$ | No． | No． | No． | Circulation ${ }^{2}$ | No． | No． |
|  | English－Language Newspapers |  |  |  |  |  |  |  |
| Newfoundland <br> Prince Edward Island <br> Nova Scotia <br> New Brunswick． <br> Quebec． <br> Ontario． <br> Manitoba <br> Saskatchewan <br> Alberta <br> British Columbia <br> Yukon and Northwest <br> Territories <br> Totals． | 33 | 27,36626,275 | － 4 |  | 33 | 27，802 | 5 | 1 |
|  |  |  |  |  |  |  |  | － |
|  | 544 | 151，958 | 28 14 | － | 6 5 | 154,351 88,053 | 29 13 |  |
|  |  | 86,470 326,011 | 1423241 |  | 4 | 381，138 | 20 | － 1 |
|  | 48 | 1，697，024 |  | $-3$ | 47 | 1，719，446 | 235 | 4 |
|  | 646 | 203，820 | 241 |  | 4 <br> 4 | 216,111110,467 | 122 | 二 |
|  |  |  | $\begin{aligned} & 154 \\ & 107 \\ & 107 \end{aligned}$ | － |  |  |  |  |
|  |  | 258,754439,445 |  | 二 |  | 453，431 | 10191 | 2 |
|  | 14 |  |  |  | 14 |  |  | $-{ }^{2}$ |
|  | － | － | 3 | － | － | － | 3 | － |
|  | 97 | 3，329，762 | 727 | 5 | 98 | 3，395，872 | 682 | 8 |
|  | French－Language Newspapers ${ }^{3}$ |  |  |  |  |  |  |  |
| Nova Scotia <br> New Brunswick <br> Quebec． <br> Ontario． <br> Manitoba <br> Saskatchewan <br> Alberta． <br> Totals | $\begin{array}{r} 1 \\ 10 \\ 1 \\ - \\ - \end{array}$ | $\begin{aligned} & \overline{10}, 951 \\ & 689,525 \\ & 34,223 \\ & \overline{=} \\ & = \end{aligned}$ | 121575131 | 二$=13$$=$$=$ | -119-1$=$ | $\overline{10}, 884$705,14734,482$=$$=$ | 121655131 | $\begin{aligned} & = \\ & =14 \\ & = \end{aligned}$ |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | 12 | 734，699 | 170 | 13 | 11 | 750，513 | 178 | 14 |
|  | Foreign－Language Newspapers ${ }^{4}$ |  |  |  |  |  |  |  |
| Quebec． <br> Ontario <br> Manitoba <br> Alberta <br> British Columbia． | 123 | $\because$ <br>  <br>  | 6381611 | 二 | － $\begin{array}{r}1 \\ 2\end{array}$ | $\cdots$ <br> $\cdots$ <br> - | 5421511 | $\begin{aligned} & \text { 二 } \\ & \text { 二 } \end{aligned}$ |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Totals． | 6 | ．． | 62 | － | 6 | ． | 64 | － |

[^256]
## 15.-Estimated Numbers and Circulations of reporting English-Language and FrenchLanguage Newspapers Published in Urban Centres of Over $\mathbf{3 0 , 0 0 0}$ Population, 1961 and 1962.

Nore.-Figures from 1945 will be found in the corresponding table of previous Year Books beginning with the 1947 edition.

| Urban Centre | $\left\lvert\, \begin{gathered} \text { Households } \\ \text { (Census } \\ 1961) \end{gathered}\right.$ | 1961 |  |  | 1962 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Daily |  | Weekly | Daily |  | Weekly |
|  | No. | No. | Circulation | No. | No. | Circulation | No. |
|  |  | English-Language Newspapers |  |  |  |  |  |
| Belleville, Ont. | 8,563 | 1 | 12,350 | - | 1 | 12,759 | - |
| Brantford, Ont. | 15,914 | 1 | 21,313 | - | 1 | 21,665 | - |
| Burlington, Ont. | 12,299 | - | - | 1 |  |  | 1 |
| Calgary, Alta. . | 71,586 | 2 | 116,711 | 2 | 2 | 118,768 | 1 |
| Cornwall, Ont. | 10,753 | 1 | 13,022 |  | 1 | 13,007 | - |
| Dartmouth, N.S. | 10,945 | - | - | 1 | - | - | 1 |
| Edmonton, Alta. | 76,275 | 1 | 111,602 | 1 | 1 | 117,490 | 1 |
| Fort William, Ont | 11,695 | 1 | 15,517 | - | 1 | 15,770 | - |
| Granby, Que...... | 7,478 | 2 | - | 1 | , | - | 1 |
| Guelph, Ont. . | 10,773 | 2 | 17,401 | - | 2 | 16,891 |  |
| Halifax, N.S. | 21,501 | 2 | 109,743 | - | 2 | 112,029 | - |
| Hamilton, Ont. | 73,829 | 1 | 106,096 | 1 | 1 | 107,825 | - |
| Kingston, Ont. | 13,931 | 1 | 21,794 | - | 1 | 22,687 | - |
| Kitchener, Ont | 20,600 | 1 | 36,531 | - | 1 | 37,838 |  |
| Lethbridge, Alta | 10,013 | 1 | 17,619 | - | 1 | 18,354 | - |
| London, Ont. . . . | 47, 498 | 2 | 108,195 | - | 2 | 111,762 | - |
| Moncton, N.B | 10,529 | 2 | 26,506 | - | 2 | 27,083 | - |
| Montreal, Que. | 330,023 | 2 | 311,123 | 2 | 2 | 316,170 | 21 |
| Moose Jaw, Sask | 9,562 | 1 | 8,373 | 1 | 1 | 8,337 | - |
| New Westminster, | 9,218 | 1 | 17,777 | - | 1 | 18,808 | 1 |
| Oshawa, Ont. | 17,133 | 1 | 16,377 | - | 1 | 17,345 | - |
| Ottawa, Ont. | 70,114 | 2 | 142,025 | 3 | 2 | 151,908 | 2 |
| Peterborough, On | 12,853 | 1 | 22,429 | 1 | 1 | 22,863 | 1 |
| Port Arthur, Ont. | 11,609 | 1 | 14, 862 | - | 1 | 14,616 | - |
| Quebec, Que. | 42,126 | 1 | 5,786 | - | 1 | 5,821 | - |
| Regina, Sask. | 30,125 | 1 | 51,480 | 1 | 1 | 52,896 | 1 |
| St. Catharines, Ont | 23,287 | 1 | 26,962 | 1 | 1 | 27,451 | - |
| St. James, Man. | 9,076 | - | - | 1 | - | - | 1 |
| St. John's, Nfld. | 12,971 | 2 | 21,537 | 2 | 2 | 21,811 | $2^{1}$ |
| Saint John, N.B. | 14,423 | 2 | 46,378 | 1 | 2 | 46,964 | 1 |
| St. Laurent, Que. | 12,306 | - | - | 1 | 1 | - | - |
| Sarnia, Ont. . . | 13,710 | 1 | 15,538 | 1 | 1 | 15,872 | 1 |
| Saskatoon, Sask. | 25,912 | 1 | 40,804 | - | 1 | 41,994 | - |
| Sault Ste. Marie, Ont | 11,054 | 1 | 16,795 | - | 1 | 17,539 | - |
| Shawinigan, Que. . . | 7,232 | 1 | - 102 | 1 | 1 | - 147 | 1 |
| Sherbrooke, Que. | 15,775 | 1 | 9,102 | 1 | 1 | 9,147 | 1 |
| Sudbury, Ont... | 19,526 | 1 | 29,655 | - | 1 | 30,339 | - |
| Sydney, N.S. | 7,500 | 1 | 26,195 | -10 | 1 | 26,615 7 | $10^{2}$ |
| Toronto, Ont.. | 172,864 | 4 | 806,883 | 10 | 4 | 798,248 | $10^{2}$ |
| Trois Rivières, Que | 12,372 | 2 | - -318 | 1 | 2 | 327 310 | 1 |
| Vancouver, B.C.. | 118,405 | 2 | 318,316 | 8 | 2 | 327,310 | 1 1 |
| Victoria, B.C. | 18,475 | 2 | 54,441 | 1 | 2 | 56,562 | - |
| Welland, Ont. | 9,428 | 1 | 16,318 | - | 1 | 16,773 |  |
| Windsor, Ont................ | 33,060 | 1 | 77,934 |  | 1 | $\begin{array}{r}167,650 \\ 199 \\ \hline\end{array}$ |  |
| Winnipeg, Man. . . . . . . . . . . | 74,126 | 2 | 192,906 | 3 | 2 | 199,564 | 3 |
|  |  | French-Language Newspapers |  |  |  |  |  |
| Chicoutimi, Que. . . . . . . . . . . . . . . . . . . . . | 5,786 |  | - | 2 | - | - | $\begin{aligned} & 3 \\ & 2 \end{aligned}$ |
| Chomedey, Que............ | 6,995 | - | - | - | - | - | $\begin{aligned} & 2 \\ & 1 \end{aligned}$ |
| Cornwall, Ont. | 10,753 |  |  | 1 |  | - | 1 |
| Edmonton, Alta | 76,275 | - | - | 1 | -1 | - 12.13 |  |
| Granby, Que.... | 7,478 | 1 | 10,864 | 1 | 1 | 12,132 | ${ }_{3}^{1}$ |
| Hull, Que... | 13,304 | - | , | 3 | - | - | ${ }^{3}$ |
| Lachine, Que. | 10,058 | - | - | 1 | - | - | $1^{3}$ |
| LaSalle, Que. | 8,128 | - | - 0 | 1 | -1 | - 10.884 |  |
| Moncton, N.B. | 10,529 | 1 | 10,951 | 23 | 1 | 10,884 413,328 | - $6^{5}$ |
| Montreal, Que. | 330,023 | 4 | 417,2924 | 23 | 3 | 413,328 34,482 |  |
| Ottawa, Ont... | 70,114 | 1 | 34,223 | 2 | 1 | 34,482 200,085 | - $3_{1}$ |
| Quebec, Que. | 42,126 | 3 | 187,528 | 2 | 3 | 200,085 | ${ }_{1}^{1}$ |
| St. Boniface, Man. | 9,561 | - | - | 1 | - | - | 1 |
| St. Laurent, Que.. | 12,306 |  |  | 2 |  |  | 5 |
| Shawinigan, Que. | 7,232 | - | - | 4 | 1 |  | 1 |
| Sherbrooke, Que. | 15,775 | 1 | 38,327 | 1 |  | 41,979 | 1 |
| Sudbury, Ont...... | 19,526 12,372 | $-1$ | $35,514$ | 1 | 1 | 37,623 | 4 |
| Trois Rivières, Que. Verdun, Que. . . . | 12,372 21,739 | - |  | 1 1 | - | - |  |
| 2 Includes four week-end newspapers. <br> ${ }^{2}$ Bilingual. <br> 14 bilinguals and 12 week-end newspapers. |  |  |  |  |  |  |  |

16.-Estimated Numbers of Foreign-Language Publications, 1961 and 1962

| Language | 1961 | 1962 | Language | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. |  | No. | No. |
| Byelorussian. | 1 | 4 | Lithuanian.... | 2 |  |
| Chinese..... | 4 | 4 2 | Macedonian... | $\stackrel{2}{1}$ | 2 1 |
| Czech. | 2 | 2 | Norwegian. | 1 | 1 |
| Danish. | 1 | 1 | Polish.. | 3 | 3 |
| Dutch. | 7 | 7 | Portuguese. | 1 | 1 |
| Estonian. | 2 | 2 | Russian... | 1 | 1 |
| Finnish. | 2 | 2 | Serbian. | 3 | 3 |
| German. | 9 | 9 | Slovak. | 2 | $\stackrel{2}{1}$ |
| Greek. | 1 | 1 | Slovenian. | 1 | 1 |
| Hungarian. | 6 | 9 | Swedish. | 3 | 3 |
| Icelandic. . | 1 | 1 | Ukrainian. | 19 | 19 |
| Italian.. | 9 | 10 | Yiddish. | 4 | 4 |
| Japanese. | 1 | 2 | Totals. | 94 | 98 |

## 17.-Estimated Numbers of Magazines and Related Publications, by Broad Classifications, 1961 and 1962

| Classification | 1961 | 1962 | Classification | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. |  | No. | No. |
| Agricultural and rural. | 55 | 56 | Religious. | 37 | 37 |
| Arts, crafts and professions........... | 37 | 37 | Services and directories.............. | 81 | 82 |
| Construction. | 22 | 22 | Sports and entertainment............ | 51 | 54 |
| Educational. | 85 | 93 | Trade, industry and related publica- |  |  |
| Finance and insurance. | 14 | 15 | tions. | 201 | 205 |
| Government and government services. | 33 | 30 | Transportation and travel | 49 | 49 |
| Home, social and welfare. | 51 | 50 | Miscellaneous | 15 | 15 |
| Pharmaceutical and medical. | 40 | 40 | Totals........................ | 785 | 800 |

## GHAPTER XIX.-DOMESTIC TRADE AND PRICES

| CONSPECTUS |  |  |  |
| :---: | :---: | :---: | :---: |
| Page ${ }_{\text {a }}$ Page |  |  |  |
| Part I.-The Movement and Marketing of Commodities. | 846 | Section 5. Interprovincial Freight Movements. . . . .................... | 875 |
| Section 1. Merchandising and Service Establishments. . . . . . . . . . ........ | 846 | Part II.-Government Aids to and Control of Domestic Trade. | 877 |
| Subsection 1. 1961 Census of Merchandising and Service Establishments...... | 847 | Section 1. Controls Affecting the Mar- |  |
| Subsection 2. Wholesale Trade. | 848 |  | 77 |
| Subsection 3. Retail Trade | 849 | Subsection 1. Control of the Grain Trade | 877 |
| Subsection 4. Service Establishments. | 854 | ucts Other Than Grain. ................ | 897 |
| Section 2. The Marketing of AgricultURAL PRODUCTS. | 857 | Section 2. Combinations in Restraint of Trade. | 882 |
| Subsection 1. The Grain Trade, 1961-62 | 857 | Section 3. Control and Sale of Alcoholic Beverages. | 885 |
| Subsection 2. Livestock Marketings. | 863 | Section 4. The National Energy Board | 887 |
| Section 3. Warehousing and Cold Stor- age...................................... | 865 | Section 5. Miscellaneous Aids or ConTROLS. | 889 |
| Subsection 1. Licensed Grain Storage... | 866 | Part III.-Bankruptcies and Commercial |  |
| Subsection 2. Cold Storage and Storage of Foods. | 867 | Failures. . . . . . . . . . . . . . . . . . . . . . . . . . | 892 |
| Subsection 3. Storage of Petroleum and |  | Part IV.-Prices........................... | 896 |
| Petroleum Products.................. | 869 | Section 1. Index Numbers of Wholesale |  |
| Subsection 4. Warehousing of General |  | Prices. . .......................... | 896 |
| Merchandise and Refrigerated Goods.. | 870 | Section 2. Consumer Price Index | 899 |
| Subsection 5. Bonded Warehousing and Storage of Wines. | 871 | Section 3. Consumer Expenditure Sur- veys. ................................... | 903 |
| Section 4. Co-operative Organizations | 872 | Section 4. Security Price Indexes | 903 |

The interpretation of the symbols used in the tables throughout the Year Book will be found facing $p .1$ 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 field 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 which in the past has been conducted every ten years. The

[^257]first census of this kind related to business transacted for the year 1930 and similar censuses were taken for 1941, 1951 and 1961. Only the first classifications of retail trade (by provinces, counties or census divisions, and urban centres of 30,000 or more population) were available at the time of preparation of this Section (see Subsection 1). It is noteworthy that the scope of the data collected in 1961 was widened. Gross margin 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. Reports giving detailed results of the census, classifying retail, wholesale and service establishments by geographic areas, kinds of business and types of operation-including such data as number of establishments, sales, employment and payrolls, and inventories and commodities for the retail and wholesale trades-are scheduled to begin appearing late in $1963 . \dagger$

Census information is supplemented in intercensal years by monthly, quarterly and annual surveys on the more important phases of the retail, wholesale and service trades -sample surveys for some businesses and full coverage for others. The 1951 Census formed a new base for such surveys and certain improvements have been implemented for continuance during the 1951-61 intercensal period. Current information available on the distributive trades is given in Subsections 2, 3 and 4 and continues to project the 1951 base. Data related to the new 1961 base will be available early in 1965. Estimates for the years prior to 1951 have been revised in accordance with the census base.

## Subsection 1.-1961 Census of Merchandising and Service Establishments

As stated above, the only results available from the 1961 Census of Merchandising and Service Establishments at the time of preparation of this Chapter were those of retail trade classified by counties or census divisions, by provinces and by incorporated urban centres of 30,000 or more population. The two latter classifications are given in Tables 1 and 2, respectively.

It should be noted that figures for 1961 are not directly comparable with 1951 Census information as summarized in the 1955 Year Book, pp. 953-977, since certain classifications were excluded from retail trade in 1961 and others added. Restaurants, lumber dealers, farm implement dealers and feed stores were included in 1951 but not in 1961; all automotive repair shops, radio and television repair and jewellery repair were included in 1961 as part of retail trade but in 1951 were considered service trades. It should also be noted that the total retail trade as reported by the census does not coincide with the total shown in Tables 4 and 5 of Subsection 3; the latter is estimated from sample surveys, whereas the census is a full-coverage survey.

[^258]1.-Number of Retail Stores and Value of Sales and Inventory, by Province, Census 1961

| Province or Territory | Stores | Sales | $\begin{aligned} & \text { Inventory } \\ & \text { at } \\ & \text { Year-End } \end{aligned}$ |
| :---: | :---: | :---: | :---: |
|  | No. | \$'000 | \$'000 |
| Newfoundland. | 4,747 | 285,568 | 49,948 |
| Prince Edward Island. | 867 | 78,801 | 10,678 |
| Nova Scotia.. | 6,523 | 580,335 | 73,194 |
| New Brunswick | 5,215 | 435, 806 | 55,350 |
| Quebec. | 45,273 | 4,107,952 | 532,830 |
| Ontario... | 52,157 | 6,206.685 | 733,955 |
| Manitoba...... | 6,575 | 766,711 | 100,022 |
| Saskatchewan. | 7,591 | 734,492 | 118,265 |
| Alberta. ${ }_{\text {British }}$ Columbis | -9,902 | 1,272, 395 | 177, 621 |
| British Columbis................. | 13,558 212 | $1,575,161$ 29,044 | 212,435 7,600 |
| Canada | 152,620 | 16,072,950 | 2,071,898 |

## 2.-Number of Retail Stores and Value of Sales and Inventory in Urban Centres of $\mathbf{3 0 , 0 0 0}$ or More Population, Census 1961

| $\begin{gathered} \text { Province } \\ \text { and } \\ \text { Urban Centre } \end{gathered}$ | Stores | Sales | $\left\|\begin{array}{c} \text { Inventory } \\ \text { at } \\ \text { Year-End } \end{array}\right\|$ | $\begin{gathered} \text { Province } \\ \text { and } \\ \text { Urban Centre } \end{gathered}$ | Stores | Sales | $\begin{aligned} & \text { Inventory } \\ & \text { at } \end{aligned}$ Year-End |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | \$'000 | \$'000 | Ontario-concluded | No. | \$'000 | \$'000 |
| St. John's. | 578 | 95,002 | 13,568 | Guelph............... | 371 | 47,027 | 5,455 |
| Nova Scotia- |  |  |  | Hamilton........... | 2,227 | 313,247 | 33,538 |
| Dartmouth.......... | 250 | 48,112 | 4,499 | Kingston............. | 470 | 73,871 | 8,720 |
| Halifax............... | 692 | 138,297 | 20,874 | Kitchener. | 605 | 96,724 | 10,612 |
| Sydney.............. | 326 | 48,152 | 5,541 | London. | 1,349 | 238,212 | 33,048 |
| New Brunswick- | 355 | 63,812 | 7324 | Oshawa............... | 459 | 76,415 | 7,844 |
|  | 355 |  |  | Ottawa.............. | 1,730 | 342,168 | 38,635 |
| Saint John. . . . . . . . . | 541 | 77,956 | 9,572 | Peterboroug | 372 | 64,470 | 7,232 |
| Quebec- |  |  |  |  |  |  |  |
| Chicoutimi........... | 269 | 45,326 | 6,213 | Port Arthur.......... | 331 | 57,005 | 6,619 |
| Chomedey........... | 176 | 28,426 | 2,957 | St. Catharines....... | 788 | 93,309 | 11,829 |
| Granby.............. | 341 | 28,904 | 3,703 | Sarnia................ | 417 | 59,700 | 7,894 |
| Hull................. | 390 | 45,020 | 4,326 | Sault Ste. Marie..... | 403 | 69,594 | 8,954 |
| Jacques Cartier...... | 286 | 26,251 | 2,367 | Sudbury............. | 585 | 112,357 | 11,154 |
| Lachine. . | 295 | 27,376 | 3,593 | Toronto.............. | 7,610 | 1,147,007 | 136,048 |
| LaSalle. | 148 | 16,281 | 1,688 | Welland.. | 378 | 39,033 | 4,875 |
| Montreal.. | 10,070 | 1,409,943 | 167,618 | Windsor.............. | 1,123 | 124,843 | 18,398 |
| Montreal North. | 274 | 21,200 | 2,151 | ManitobaSt. Boniface. | 192 | 17,703 | 1,652 |
| Outremont. | 114 | 21,736 | 1,163 | St. James | 131 | 15,585 | 1,412 |
| Quebec... | 1,829 | 237,484 | 32,714 | Winnipeg. . | 2,051 | 400,697 | 48,416 |
| St. Laurent. | 195 | 34,994 | 3,434 | Saskatchewan- |  |  |  |
| St. Michel. | 307 | 41,200 | 3,677 | Moose Jaw ............ | 272 | 50,507 | 5,419 |
| Shawinigan........... | 358 | 28,919 | 4,007 | Regina............... | 656 | 132,189 | 21,295 |
| Sherbrooke. | 622 | 78,575 | 9,205 | Saskatoon............ | 628 | 111,176 | 14,179 |
| Trois Rivières. | 521 | 59,157 | 8,400 | AlbertaCalgary. | 1,656 | 329,984 | 41,755 |
| Verdun. | 577 | 66,017 | 8,343 | Edmonton. | 1,704 | 357,504 | 47,863 |
| Ontario- |  |  |  | Jasper Place.......... | 123 | 18,215 | 1,597 |
| Belleville. | 294 | 44,615 | 5,911 | Lethbridge........... | 329 | 55,149 | 7,860 |
| Brantford... | 483 | 63,181 | 7,256 | British Columbia- |  |  |  |
| Burlington........... | 263 | 40,285 | 3,925 | New Westminster.... | 363 | 70,860 | 10,663 |
| Cornwall. | 445 | 45,302 | 5,355 | Vancouver........... | 3,719 | 522,488 | 70,871 |
| Fort William | 368 | 46,631 | 5,629 | Victoria.............. | 760 | 119,210 | 16,555 |

## Subsection 2.-Wholesale Trade

Estimated sales of wholesalers expanded from $\$ 5,784,400,000$ in 1951 to $\$ 8,897,100,000$ in 1961. The figures given in Table 3 include only wholesalers proper, i.e., they exclude agents and brokers and manufacturers' sales branches. Sales estimates have been revised but have not been adjusted for price changes. The business of agents and brokers for the years 1957-59 is given in the 1962 Year Book, p. 869; no later figures are available.

## 3.-Wholesale Sales, by Kind of Business, 1957-61

Nors.-Includes only wholesalers proper, i.e., firms performing the function of buying merchandise on their own account for ressle.

| Kind of Business | 1957 | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 |
| Fresh fruits and vegetables. | 237.2 | 263.5 | 279.5 | 288.4 | 294.0 |
| Groceries and food specialties. | 1,263.8 | 1,385.1 | 1,544.5 | 1,649.7 | 1,736.0 |
| Meat and dairy products. | 152.0 | 175.0 | 171.3 | 165.0 | 176.5 |
| Clothing and furnishings. | 116.9 | 123.6 | 120.0 | 116.1 | 114.7 |
| Footwear. | 30.9 | 33.5 | 37.1 | 38.0 | 39.3 |
| Other textile and clothing accessories | 186.3 | 198.2 | 211.5 | 204.6 | 206.6 |
| Drugs and drug sundries. | 184.7 | 198.5 | 216.6 | 221.9 | 235.0 |
| Household electrical appliances | 161.3 | 166.4 | 181.4 | 182.7 | 209.3 |
| Farm machinery.... | 56.1 | 68.5 | 84.9 | 73.0 | 71.4 |
| Coal and coke. | 183.0 | 163.6 | 155.9 | 153.3 | 136.9 |
| Hardware. | 315.2 | 308.8 | 317.6 | 327.1 | 341.9 |
| Construction materials and supplies including lumbe | 779.6 | 825.2 | 964.4 | 877.6 | 902.2 |
| Industrial and transportation equipment and supplies. | 796.4 | 709.0 | 779.7 | 748.1 | 757.1 |
| Commercial, institutional and service equipment and supplies | 105.1 | 109.3 | 130.2 | 137.4 | 143.3 |
| Automotive parts and accessories. | 342.1 | 363.9 | 407.9 | 414.8 | 412.6 |
| Newsprint, paper and paper products. | 251.8 | 241.9 | 262.8 | 276.4 | 290.5 |
| Tobacco, confectionery and soft drinks | 635.8 | 679.2 | 723.4 | 741.1 | 761.0 |
| Other.. | 1,893.3 | 1,892.5 | 2,163.9 | 2,149.3 | 2,068.8 |
| Totals, All Trades | 7,691.5 | 7,985.7 | 8,752.6 | 8,764.5 | 8,897.1 |

## Subsection 3.-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 estimated value of retail sales increased by 105.9 p.c. during the period 1949-62. Estimates, not adjusted for price changes, are shown by province in Table 4 for 1930, 1941 and 1951-62 and by kind of business for the latest five years in Table 5.

## 4.-Retail Trade, by Province, 1930, 1941 and 1951-62

Nork.-Figures for 1931-40 are given in the 1957-58 Year Book, p. 938 and those for 1942-50 in the 1962 edition, p. 870.

| Year | Atlantic Provinces ${ }^{1}$ | Quebec | Ontario | Manitoba | Saskatchewan | Alberta | British Columbia ${ }^{2}$ | Canada ${ }^{3}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 |
| 1930..... | 197 | 646 | 1,091 | 188 | 188 | 175 | 251 | 2,736 |
| 1941... | 279 | 820 | 1,388 | 193 | 189 | 228 | 318 | 3,415 |
| 1951.... | 899 | 2,443 | 4,130 | 610 | 659 | 854 | 1,100 | 10,693 |
| 1952... | 982 | 2,635 | 4,383 | 651 | 764 | 939 | 1,177 | 11,532 |
| 1953.... | 1,018 | 2,756 | 4,616 | 677 | 845 | 987 | 1,228 | 12,128 |
| 1954.... | 1,025 | 2,798 | 4,634 | 637 | 758 | 964 | 1,249 | 12,066 |
| 1955.... | 1,127 | 3,006 | 5,115 | 669 | 748 | 1,035 | 1,412 | 13,112 |
| 1956... | 1,211 | 3,322 | 5,499 | 700 | 812 | 1,159 | 1,594 | 14,298 |
| 1957... | 1,234 | 3,521 | 5,663 | 726 | 855 | 1,211 | 1,616 | 14,826 |
| ${ }_{1959} 195$. | 1,290 | 3,647 |  | 754 | 914 | 1,275 | 1,631 | 15,444 |
| 1959.... | 1,362 1,430 | 3,878 3,944 | 6,218 | 813 | 951 | 1,355 | 1,707 | 16,284 |
| 1960. | 1,430 | 3,944 | 6,313 | 843 | 938 | 1,366 | 1,668 | 16,502 |
| 1961.. | 1,465 | 4,183 | 6,340 | 817 | 905 | 1,401 |  |  |
| 1962D. | 1,501 | 4,444 | 6,551 | 858 | 963 | 1,471 | 1,784 | 17,571 |

[^259]5.-Retail Trade, by Kind of Business, 1958-62

| Kind of Business | 1958 | 1959 | 1960 | 1961 | 1962p |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 |
| Grocery and combination stores. | 3,126 | 3,287 | 3,474 | 3,581 | 3,704 |
| Other food and beverage stores. | 1,120 | 1,178 | 1,225 | 1,244 | 1,317 |
| General stores. | 625 | 630 | 640 | 654 | 685 |
| Department stores. | 1,345 | 1,420 | 1,454 | 1,503 | 1,561 |
| Variety stores.. | 315 | 331 | 350 | 371 | 383 |
| Motor vehicle dealers. | 2,414 | 2,613 | 2,551 | 2,488 | 2,763 |
| Garages and filling stations. | 1,037 | 1,104 | 1,145 | 1,212 | 1,239 |
| Men's clothing stores. | 238 | 250 | 259 | 261 | 275 |
| Family clothing stores. | 227 | 226 | 235 | 243 | 251 |
| Women's clothing stores. | 265 | 273 | 277 | 283 | 291 |
| Shoe stores. | 146 | 155 | 169 | 170 | 175 |
| Hardware stores. | 318 | 326 | 326 | 328 | 339 |
| Lumber and building material dealers. | 482 | 492 | 436 | 426 | 448 |
| Furniture, appliance and radio dealers.. | 566 | 581 | 547 | 548 | 560 |
| Restaurants. | 543 | 567 | 569 | 573 | 586 |
| Fuel dealers. | 326 | 342 | 324 | 317 | 328 |
| Drug stores. | 383 | 405 | 416 | 428 | 436 |
| Jewellery stores. | 133 | 137 | 134 | 134 | 136 |
| Miscellaneous. | 1,838 | 1,967 | 1,971 | 2,012 | 2,094 |
| Totals, All Trades. | 15,444 | 16,284 | 16,502 | 16,77\% | 17,571 |

Retail Chain Stores.-Retail chains are defined as companies operating four or more retail outlets in the same or related kinds of business. The latest figures available are those for 1960 given in Tables 6 and 7. Operating results of selected kinds of chain stores and operating ratios of independent stores by kind of business for the same year are given in the 1962 Year Book at pp. 872-873.

## 6.-Retail Chain Store Statistics, 1930, 1941 and 1951-60

Nore.-Figures for 1942-50 are given in the 1962 Year Book, p. 871.

| Year | Stores | $\begin{gathered} \text { Net } \\ \text { Retail Sales } \end{gathered}$ | Salaries and Wages Paid to Store Employees | Value of Stocks on Hand End of Year |  | Accounts Outstanding End of Year |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Stores | Warehouses |  |
|  | Av. No. | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| 1930.... | 8,097 | 487,336 | 50,405 | 60,457 | . | . |
| 1941..... | 7,622 | 639,210 | 57,777 | 68,619 | 20,976 | 38,376 |
| 1951... | 7,846 | 1,775.744 | 153,599 | 186,562 | 60,490 | 53,816 |
| 1952... | 7,766 | 1,924,873 | 154,642 | 172,886 | 55,215 | 77,475 |
| 1953. | 7,835 | 2,048, 228 | 171, 167 | 179,704 | 52,096 | 91,538 |
| 1954. | 8,136 | 2,146,635 | 181,509 | 191,049 | 57, 814 |  |
| 1955.... | 8,274 | 2,353,955 | 199,611 | 205,833 | 63,120 | 127,362 |
| 1956. | 8,559 | 2,647,055 | 221,136 | 232,392 | 72,183 | 143,357 |
| 1957. | 8,822 | 2,841,569 | 242,979 | 248, 284 | 78,521 | 148,506 |
| 1958. | 9,122 | 3,073,147 | 262,456 | 265, 862 |  |  |
| 1959. | 9,491 | $3,280,263$ | 285, 691 | 282,530 304,230 | 80,440 94,528 | 162,453 175,048 |
| 1960. | 9,954 | 3,468, 413 | 382,099 | 304, 230 | 94,528 | 175,048 |

## 7.-Retail Chain Store Sales, by Province and by Kind of Business, 1956-60

| Province or Kind of Business | 1956 | 1957 | 1958 | 1959 | 1960 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$ 000 | \$'000 |
| Province |  |  |  |  |  |
| Newfoundland. | 15,267 | 24,079 | 23,849 | 35,708 | 37,130 |
| Maritime Provinces | 169,946 | 179,396 | 190,928 | 198,095 | 217,966 |
| Quebec. | 540,628 | 576,716 | 619,584 | 674,002 | 712,568 |
| Ontario. | 1,230,388 | 1,335, 056 | 1,451, 325 | 1,508,626 | 1,579, 018 |
| Manitoba | 100,591 | 112,126 | 120,715 | 131,908 | 142,482 |
| Saskatchewan | 111,353 | 118,935 | 128,762 | 137,037 | 140,077 |
| Alberta | 182,111 | 197,763 | 219,751 | 245,747 | 262,954 |
| British Columbis | 289,846 | 289,463 | 309,336 | 341,548 | 367,796 |
| Yukon and Northwest Territories | 6,925 | 8,034 | 8,897 | 7,592 | 8,422 |
| Canada. | 2,547,055 | 2,841,569 | 3,073,147 | 3,280,263 | 3,468,413 |
| Kind of Business |  |  |  |  |  |
| Foods and Beverages ${ }^{1}$. | 1,685,394 | 1,835,648 | 1,994,366 | 2,143,559 | 2,293,563 |
| Grocery and combination stores.............. | 1,096,330 | 1,241,725 | 1,368,883 | 1,481,136 | 1,602,797 |
| Meat markets. | 7,730 | 7,563 | 7,924 | 8,177 | 9,530 |
| Restaurants. | 36,374 | 36,194 | 38,236 | 40,718 | 40,607 |
| Alcoholic beverage stores | 527,952 | 530,143 | 556,383 | 587,817 | 611,646 |
| General Merchandise (excl. department stores) ${ }^{\text {a }}$ | 313,976 | 338,645 | 357,199 | 379,638 | 413,209 |
| General stores.................................. | 41,144 | 42,774 | 42,513 | 44,290 | 48,820 |
| Variety stores. | 229,307 | 247,223 | 264,298 | 282,591 | 298,157 |
| Automotive. | 42,043 | 48,299 | 56,022 | 62,068 | 60,756 |
|  | 190,674 | 202,078 | 222,490 | 238,448 | 261,583 |
| Men's and boys' clothing and furnishings. | 28,866 | 28,159 | 29,157 | 30,148 | 28,529 |
| Women's clothing stores. | 67,269 | 70,707 | 78,147 | 81,357 | 84,269 |
| Family clothing stores | 36,347 | 40,459 | 44,958 | 50,373 | 65,291 |
| Shoe stores.. | 53,433 | 57,822 | 63,938 | 70,150 | 76,514 |
| Building Materials and Hardware. | 141,316 | 140,534 | 154,151 | 155,923 | 148,324 |
| Furniture and Household Appliances. | 137,059 | 130,727 | 133,301 | 132,083 | 117,871 |
| Other Retail Stores ${ }^{1}$ | 136,592 | 145,638 | 155,618 | 168,544 | 173,107 |
| Drug stores. | 41,299 | 45,437 | 49,912 | 53,383 | 55,130 |
| Jewellery stores. | 46,301 | 45,205 | 47,017 | 48,736 | 49,280 |

${ }^{1}$ Includes other kinds of business not shown separately.
New Motor Vehicle Sales.-Sales of new motor vehicles reached a peak in 1962 when 586,012 vehicles valued at $\$ 1,784,460,000$ were sold. Sales over the ten-year period 1953-62 are shown in Table 8.

## 8.-Retail Sales of New Motor Vehicles, 1953-62

| Year | Passenger Cars |  | Trucks and Buses |  | Totals |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | \$ | No. | \$ | No. | \$ |
| 1953. | 359,172 | 899,726,000 | 103,354 | 262,745,000 | 462,526 | 1,162,471,000 |
| 1954. | 310,546 | 797,554,000 | 72,082 | 191,964,000 | 382, 628 | 1,989,518,000 |
| 1955. | 386,962 | 1,023,351,000 | 78,716 | 232,539,000 | 465,678 | 1,255, 890,000 |
| 1956. | 408,233 | 1,128,640,000 | 91,688 | 326,735,000 | 499,921 | 1,455,375.000 |
|  | 382,023 | 1,087,620,000 | 76,276 | 281,311,000 | 458,299 | 1,368, 931,000 |
| 1958. | 376,723 | 1,110,724,000 | 68,046 | 254,742,000 |  | 1,365,466,000 |
| 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 | 261,382,000 | 511,479 | 1,551, 408,000 |
| 1962p. | 504,168 | 1,486,337,000 | 81,844 | 298, 123,000 | 586,012 | 1,784, 460,000 |

Farm Implement Sales.-The value, at wholesale prices, of new farm implements and equipment sold in 1961 amounted to $\$ 201,777,000$, a decrease of 7.2 p.c. from the value of such sales in 1960. Increases reported by the Atlantic Provinces, Quebec, Ontario, Alberta and British Columbia did not offset decreased sales in Manitoba and Saskatchewan. In addition to the amount spent on new machinery, $\$ 39,643,554$ was spent in 1961 for repair parts, 4.0 p.c. less than the amount so spent in 1960.

## 9.-Sales of Farm Implements and Equipment, by Major Group, 195\%-61 <br> (Values at wholesale prices)

| Major Group | 1957 | 1958 | 1959 | 1960 | 1961 | Percentage Change 1960-61 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |  |
| Tractors and engines. | 56,651 | 63,171 | 78,938 | 80,093 | 74,764 | -6.7 |
| Ploughs. | 8,952 | 9,790 | 11, 189 | 11,635 | 11,460 | -1.5 |
| Tilling, cultivating and weeding machinery...... | 7,845 | 9,656 | 11,920 | 12,650 | 12,939 | +2.3 |
| Planting, seeding and fertilizing machinery..... | 6,703 | 7,104 | 7,894 | 7,873 | 8,224 | + 4.5 |
| Haying machinery | 23,566 | 26,257 | 30,655 | 30,544 | 29,298 | - 4.1 |
| Harvesting machinery. | 23,984 | 29,851 | 44,122 | 46,485 | 37,631 | -19.0 |
| Machines for preparing crops for market or for use | 5,556 | 6,102 | 7,510 | 6,261 | 6,233 | -0.5 |
| Farm wagons, wagon trucks and sleighs. | 1,527 | 1,900 | 1,994 | 2,025 | 1,910 | - 5.7 |
| Barn equipment. | 2,863 | 3,521 | 3,869 | 4,095 | 4,535 | +10.7 |
| Dairy machinery and equipment. | 5,468 | 6,488 | 5,139 | 5,766 | 5,589 | -3.1 |
| Spraying and dusting equipment. | 1,269 | 1,558 | 1,466 | 1,637 | 1,758 | + 7.4 |
| Miscellaneous farm equipment. | 5,518 | 6,616 | 7,535 | 8,401 | 7,436 | -11.5 |
| Totals. | 149,902 | 172,014 | 212,231 | 217,465 | 201,777 | -7.2 |

10.-Sales of Farm Implements and Equipment, by Province, 1960 and 1961
(Values at wholesale prices)

| Province or Region | 1960 |  | 1961 |  | $\begin{gathered} \text { Per- } \\ \text { centage } \\ \text { Change } \\ \text { 1960-61 } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | $\begin{aligned} & \text { P.C. } \\ & \text { of } \\ & \text { Total } \end{aligned}$ | Amount | $\begin{aligned} & \text { P.C. } \\ & \text { of } \\ & \text { Total } \end{aligned}$ |  |
|  | \$ |  | \$ |  |  |
| Atlantic Provinces. | 7.692,658 | 3.5 | 8,165,558 | 4.0 | +6.1 |
| Quebec. | 26,792,294 | 12.3 | 30,276,680 | 15.0 | +13.0 |
| Ontario. | 49,399, 102 | 22.7 | 51,005,608 | 25.3 | + 3.3 |
| Manitoba. | 25, 876,486 | 12.0 | 18,957,752 | 9.4 | -26.7 |
| Saskatchewan. | 57, 359, 238 | 26.4 | 41,615,395 | 20.6 | -27.4 |
| Alberta. | 44,993,316 | 20.7 | 45,722,763 | 22.7 | + 1.6 |
| British Columbia. | 5,352,089 | 2.4 | 6,032,776 | 3.0 | +12.7 |
| Totals. | 217,465,183 | 100.0 | 201,776,532 | 100.0 | -7.2 |

Sales Financing.-The amount of instalment financing transacted by sales finance companies in 1961 was slightly lower than in 1960 which was, in turn, lower than the high point reached in 1959; balances outstanding at the end of the year reached a peak in 1960 and decreased somewhat in 1961.

## 11.-Retail Instalment Paper Purchased and Balances Outstanding, by Class of Goods, 1958-61

(Millions of dollars)

| Class of Goods | Paper Purchased |  |  |  | Balances Outstanding Dec. 31- |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1958 | 1959 | 1960 | 1961 | 1958 | 1959 | 1960 | 1961 |
| Consumer Goods. | 870 | 902 | 878 | 768 | 768 | 806 | 829 | 756 |
| New passenger cars. | 336 | ${ }_{3} 371$ | 378 | 330 | 588 | 610 | 625 | 569 |
| Used passenger cars. ...... | 333 | 323 | 298 | 250 |  |  |  |  |
| Household appliances. | 201 | 208 | 202 | 188 | 180 | 196 | 204 | 187 |
| Commercial and Industrial. | 265 | 356 | 366 | 344 | 257 | 344 | 393 | 395 |
| New commercial vehicles. . | 70 | 95 | 97 | 87 |  | 138 | 151 | 138 |
| Used commercial vehicles.. | 48 | 59 | 57 | 47 |  |  |  |  |
| Other..... | 147 | 202 | 212 | 210 | 146 | 206 | 242 | 257 |
| Totals | 1,135 | 1,258 | 1,244 | 1,112 | 1,026 | 1,150 | 1,222 | 1,151 |

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 almost doubled in the past nine years. The figures in Table 12 do not include credit extended for commercial purposes.
12.-Balances Outstanding on Retail Trade Credit and Loans Extended to Individuals
for Non-business Purposes by Certain Financial Institutions, 1953-62
(Millions of dollars)

| Year | Retail Trade Creditr | Sales Finance Companies | Small <br> Loans Companies | Chartered Banks | Credit <br> Unions ${ }^{\text {r }}$ | Life Insurance Companies Policy Loans |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1953.... | 682 | 516 | 176 | 585 | 129 |  |
| 1954.... | 733 | 492 | 215 | 612 | 151 | 240 |
| 1955. | 822 | 599 | 279 | 788 | 174 | 250 |
| 1956...... | 873 | 756 | 356 | 759 | 226 | 270 |
| 1957....... | 901 | 780 | 362 | 691 | 258 | 295 |
|  |  | 768 | 400 | 842 | 320 | 3057 |
| 1959....... | 992 | 806 | 484 | 1,001 | 397 | 323 |
| $1960 .$. | 1,038 | 828 | 549 | 1,143 | 433 | 344 |
| 1961............... | 1,088 1,125 | 756 771 | 594 689 | 1,366 1,615 | 516 575 | 358 371 |
|  | 1,125 | 771 | 689 | 1,615 | 575 | 371 |

Accounts outstanding on the books of retailers stood at $\$ 1,125,100,000$ at the end of 1962. This amount excludes lumber and building material dealers and farm implement dealers, two trades included up to and including 1957, so that the results for 1958 and subsequent years more closely approximate "consumer" credit shown in Table 13.
13.-Retail Credit 1953-62, and by Kind of Business, 1962

| Period | Accounts Receivable (at end of period) |  |  | Kind of Business | Accounts Receivable (at end of period) |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Instalment | Charge | Total |  | Instalment | Charge | Total |
|  | \$'000,000 | \$'000,000 | \$'000,000 | 1962 | \$'000,000 | \$'000,000 | \$'000,000 |
| 1953. | 287.8 | 483.6 | 771.4 | Department stores. |  |  | 426.9 |
| 1954. | 326.6 | 492.7 | 819.3 | Motor vehicle. ...................... | 17.7 | 86.3 | 104.0 |
| 1955. | 381.8 | 542.8 | 924.6 | Men's clothing........................ | 8.0 14.2 | 12.8 11.1 | 20.8 25.3 |
| 1956.. | 414.9 | 566.6 | 981.5 | Women's clothing....................... | 3.6 | 12.4 | 16.0 |
| 1957..... | 485.1 | 529.1 | 1,014.2 | Hardware................. | 11.0 167.0 | 28.0 | 39.0 |
| 19581..... | 489.6 | 447.6 | 937.2 | Jewellery ............................. | 14.7 | 88.4 | 194.2 23.1 |
| 19591..... | 523.8 | 468.7 | 992.5 | Grocery and combination (independent) | 2 | 35.5 |  |
| 19601.... | . | . | 1,037.6 | General stores........................ |  | 34.9 | 34.9 |
| 19611..... | . | .. | 1,088.2 | Fuel.........i................. | ${ }_{2}^{3.1}$ | 53.3 29.4 | 56.4 29.4 |
| 19621.... |  | . | 1,125.1 | All other trades..................... | 29.5 | 90.1 | 119.6 |

${ }^{1}$ Excludes lumber and farm implement dealers. ${ }^{2}$ Included in "Charge".

## Subsection 4.-Service Establishments

Service establishments as defined in the census included all those places of business where the major part of gross income (annual turnover) was derived from the rendering of services as opposed to the sale of merchandise. The following types of service were covered: amusement and recreation such as motion picture theatres and producers, and bowling alleys; personal services such as laundries and dry-cleaning plants, barber shops and shoe repair shops; certain business services such as advertising agencies and window display services; repair services such as automobile repair, radio repair and watch repair; burial services; photography, commercial and portrait; hotels and tourist camps; and other services such as cold storage locker rentals and taxis.

Summary statistics of the detailed coverage in 1951 are given in the 1955 Year Book at pp. 974-977. Annual data for certain services only are included here.

Motion Picture Theatres.-The receipts of motion picture theatres increased steadily up to 1953 when they amounted to $\$ 108,603,966$, but thereafter decreased each year to $\$ 68,882,172$ in 1961 . The number of theatres in operation also decreased rapidly. The receipts of drive-ins, the most recent of theatre developments, amounted to $\$ 6,653,262$ in 1961, somewhat below the total receipts of 1960; the previous peak was in 1954.
14.-Summary Statistics of Motion Picture Theatre Operations, 1960 and 1961

| Year and Item | Regular <br> Theatres | Drive-in Theatres | Total |
| :---: | :---: | :---: | :---: |
| 1960 |  |  |  |
| Establishments...................................... No. | 1,427 | 232 | 1,659 |
| Receipts (excluding taxes)................................. \& | 65,504,666 | 6,789,678 | 72,294,344 |
| Amusement taxes............................................ \$ | 5,365,182 | 524,189 | 5,889,371 |
| Paid admissions.......................................... No. | 107,705,112 | 10,029,249 | 117,734,361 |
| 1961 |  |  |  |
| Establishments....................................... No. | 1,341 | 238 | 1,579 |
| Receipts (excluding taxes)................................ \$ | 62, 228,910 | 6,653,262 | 68,882,172 |
| Amusement taxes..................................... | 5,043,553 | - 490,793 | 5,534,346 |
| Paid admissions........................................ No. | 97,944,809 | 9,473,685 | 107,418,494 |

Motion Picture Production.-Table 15 shows the operations of private firms in the production and printing of motion picture films and film strips for industry, government, education, entertainment, etc. Films are also produced by government agencies but information concerning such production is, of course, not available. In addition, 10 firms in other business categories produced films in 1961 (four theatrical short, three films for television use, 10 other non-theatrical films of five minutes or longer, 252 newsreel stories and ciné-magazines for television, 25 for other uses, 20 commercial advertising films and 12 non-commercial advertising films for television and 25 films for unspecified uses). This production brought in revenue amounting to $\$ 82,750$.
15.-Summary Statistics of Motion Picture Production by Private Firms, 1953-61

| Year | Firms | Employees | Salaries and Wages | Gross Revenue |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Production | $\begin{gathered} \text { Printing } \\ \text { and } \\ \text { Laboratory } \end{gathered}$ | Other Revenue |
|  | No. | No. | \$ | \$ | \$ | \$ |
| 1953. | 32 | 387 | 1,150,890 | 1,592,779 | 1,230,493 |  |
| 1954. | 45 | 478 | 1,549, 233 | 2,106,131 | 1,456,405 | 1,328,021 |
| 1955. | 46 | 445 | 1,460,421 | 2,456,038 | 1,051,673 | 512,727 |
| 19561. | 59 | 1,127 | 2,483, 910 | 3,726,557 | 2, 095,985 | 423,899 |
| 1957. | 58 | 1,216 | 2,758,560 | 4,471,710 | 2,978,626 | 469,369 |
| 1958. | 52 | 1,133 | 2,770,375 | 3,902,780 | 3,344,948 | 421, 975 |
| 1959. | 54 | 1,065 | 3,609,537 | 5,814,690 | 3,229,240 | 389,480 |
| 1960. | 66 | 1,194 | 3,475, 118 | 7,038,810 | 2,590,759 | 342,582 |
| 1961.. | 67 | 7842 | 3,562,041 | 6,354,071 | 3,580,570 | 752,734 |

${ }^{1}$ Figures from 1956 include laboratories with no motion picture production; these are not included in previous years. $\quad 2$ As of the last week of November 1961; not comparable with previous years.

Table 16 shows types of film produced by private industry, classified by major producing region and by government agencies during 1961. Of the total of 623 films of five minutes or longer produced by private industry, one theatrical, 62 television and 30 other non-theatrical films were adaptations or language versions of original films; 55 were made for other than Canadian sponsors. Of the government films, 10 theatrical shorts, 10 television and 136 other non-theatrical films of five minutes or longer were adaptations or language versions of original films and all films were produced for Canadian sponsors.

Private industry and government agencies together printed $64,351,799$ feet of 16 mm . film in black and white, $8,205,054$ feet of 16 mm . film in colour, $22,640,272$ feet of 35 mm . film in black and white and 116,561 feet of 35 mm . film in colour.
16.-Private Industry and Government Motion Picture Production, by Type of Film, 1961

| Type | Private Industry |  |  |  | Government |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quebec | Ontario | Other Provinces | Total |  |  |
| Entertalnment, Documentary and Instructional Films- <br> Five Minutes or Ionger- |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Thestrical features..... | 1 | 2 | - | - | - | - |
| Theatrical shorts N . ${ }^{\text {Non-theatrical }}$ television......................... | 231 | $\stackrel{2}{111}$ | 1 | ${ }_{34}^{4}$ | 19 88 | 23 430 |
| Other non-theatrical............................. | 48 | 163 | 66 | ${ }_{277}^{342}$ | 198 | 468 |
| Less than Five Minutes | 10 | 59 | 57 | 126 | 191 15 | 141 |
| Publicity, News and Other Films- |  |  |  |  |  |  |
| Commercial advertising for television......... | 217 | 1,728 | 141 | 2,086 | - | 2,086 |
| Other commercial advertising. . . . . . . . . . . . | - |  | 2 | 2 | - | 2 |
| Non-commercial advertising for television..... | 3 | 83 | 3 | 86 | - | 86 |
| Trailers for television............................ | $\sim^{3}$ | ${ }_{11}^{6}$ | 1 | 10 | ${ }_{23}^{2}$ | 12 |
| Other trailers..................................... | 1 | - | 300 | 301 | $\sim^{23}$ | $\begin{array}{r}34 \\ 301 \\ \hline\end{array}$ |
| Newsclips for television | 10 | 168 | - | 178 | 109 | 287 |
| Other newsclips. | - | 3 | - | 3 | 5 | 8 |

16.-Private Industry and Government Motion Picture Production, by Type of Film, 1961-concluded

| Type | Private Industry |  |  |  | Government | Private and Govern-ment ment |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quebec | Ontario | Other Provinces | Total |  |  |
| Publicity, News and Other Films-concluded Newsreel stories and ciné-magazines for television. | No. | No. | No. | No. | No. | No. |
|  | 202 | 88 | 55 | 345 | 72 |  |
|  | 104 | 2 | 1 | 107 | 72 | 107 |
| Slidefilms (film-strips)- |  |  |  |  |  |  |
| Silent. S Sit................................. | 1 | 2 | 2 | 5 | 53 | 58 |
| Sound (with a record)..................... | 1 | 13 | - | 14 | 6 | 20 |
| Other films... | 61 | 416 | 3 | 16 423 | 5 | 81 423 |

Power Laundries, Dry-Cleaning and Dyeing Plants.-A record of the value of work performed by power laundries and dry-cleaning and dyeing establishments during the years 1955-60 is given in Table 17, together with other basic data on operation.
17.-Summary Statistics of Power Laundries, Dry-Cleaning and Dyeing Plants 1955-60, and by Province 1960

| Year and Province or Territory | Plants | Employees | Salaries and Wages | Cost of Materials | Value of Work Performed |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Power Laundries |  |  |  |  |
|  | No. | No. | \$ | \$ | \$ |
| 1955. | 306 | 13,991 | 28,078,112 | 4,994,234 | 54,199,647 |
| 1956. | 308 | 14,514 | 30,090,800 | 5,738,133 | 58,873,728 |
| 1957. | 320 | 14,557 | 31,869,671 | 5,746,805 | 63,106,386 |
| 1958. | 322 | 14,258 | 32,761,909 | 6,048,982 | 65,350,103 |
| 1959. | 330 | 13,954 | 33,864,341 | 6,658,212 | 68,095,503 |
| Province, 1960 |  |  |  |  |  |
| Newfoundland and Prince Edward Island. | 6 | 118 | 204,279 | 51,341 | 512,398 |
| Nova Scotia | 11 | 355 | 667,140 | 141,140 | 1,317,211 |
| New Brunswick | 11 | 362 | 687,630 | 172,362 | 1,428,054 |
| Quebec.. | 78 | 4,130 | 10,104,088 | 2,090,716 | 20,022,718 |
| Ontario | 138 | 5,003 | 12,379,108 | 2,295,114 | 25,206,651 |
| Manitoba | 9 | 467 | 1,109,346 | 205,745 | 2,345,842 |
| Saskatchew | 8 | 265 | 732,786 | 157,697 | 1,426,613 |
| Alberta. | 23 | 964 | 2,393,504 | 427,130 | 5,055,352 |
| British Columbia, Yukon and N.W.T | 45 | 1,873 | 6,155,296 | 914,729 | 11,936,506 |
| Canada, 1960. | 329 | 13,537 | 34,433,177 | 6,455,974 | 69,251,345 |
|  |  | Dry- | eaning and | yeing Plan |  |
|  | No. | No. | \$ | \$ | \$ |
| 1955. | 1,205 | 15,909 | 32,873,802 | 7,930,290 | 70,733,946 |
| 1956 | 1,338 | 16,939 | 35,620,930 | 9,157,172 | 78,527,203 |
| 1957. | 1,381 | 16,701 | 38,286,440 | 9,710,880 | 84,281,509 |
| 1958. | 1,417 | 16,721 | 39,518,187 | 10, 126, 668 | 87,194,590 |
| 1959. | 1,483 | 17,233 | 42,343,788 | 10,588,480 | 92,211,939 |
| Province, 1960 |  |  |  |  |  |
| Newfoundland and Prince Edward Island. | 24 | 268 | 672,423 | 161,623 | 1,375,439 |
| Nova Scotia. | 51 | 632 | 1,277,487 | 342,534 | 2,858,217 |
| New Brunswick | 38 | 421 |  |  |  |
| Quebec.. | 295 | 3,372 | $\begin{array}{r}8,733,645 \\ \hline 19028\end{array}$ | $2,254,089$ $4,866,932$ | 18, $42,099,588$ |
| Ontario.. | 650 58 | 7,459 1,339 | $19,028,199$ $3,518,168$ | 4,866,932 | 42,0968,199 |
| Saskatchewan | ${ }_{92}$ | 1,650 | 1,607,669 | 410,190 | 3,822,036 |
| Alberta. | 148 | 1,536 | 3,905,394 | 938,053 | 8,550,148 |
| British Columbia, Yukon and N.W.T | 158 | 1,384 | 3,883,861 | 929,018 | 8,291,598 |
| Canada, 1960. | 1,514 | 17,061 | 43,347,820 | 10,822,200 | 94,213,959 |

Advertising Agencies.-Table 18 records the growth of business done by advertising agencies during 1961 as compared with the four previous years.
18.-Summary Statistics of Advertising Agencies, 1957-61

| Item | 1957 | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Billings............................ s | 226,083, 949 | 237,654, 038 | 254,145, 919 | 272,739, 802 | 282,430,458 |
| Commissionable billings.......... \$ | 222, 025, 288 | 233,789, 205 | 250.080,021 | 267, 756, 156 | 277, 683, 282 |
| Other............................. s | 4,058,661 | 9,864,833 | 4,065,898 | 4,983, 646 | 4,747,176 |
| Gross revenue....................... \$ | 35,757,762 | 38,073,427 | 41, 126,958 | 45,150,389 | 46,060,680 |
| Distribution of Billings- |  |  |  |  |  |
| Publications................... p.c. | 51.6 | 49.3 | 47.8 | 47.2 | 45.5 |
| Production, artwork, etc........ p.c. | 15.1 | 14.4 | 14.7 | 18.7 | 19.0 |
| Radio........................... p.c. | 10.0 | 10.5 | 10.6 | 9.7 | 9.4 |
| Television..................... p.c. | 18.3 | 20.5 | 21.3 | 19.3 | 21.4 |
| Other visual. . . . . . . . . . . . . . p. p.c. | 4.4 0.6 | 4.7 0.6 | 4.8 | 5.1 | 4.6 |
| Other......................... p.c. | 0.6 | 0.6 | 0.8 | -- | 0.1 |

Hotels.-In 1960 there were 5,294 hotels in operation in Canada, 4,416 of them fullyear hotels and 878 seasonal hotels. Table 19 shows the provincial distribution of these establishments, together with the sources of their revenue.
19.-Hotels and Their Receipts, by Source 1955-60, and by Province 1960

| Year and Province | Hotels | Rooms | Receipts |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Rooms | Meals | Beer, Wine and Liquor | All <br> Other <br> Sources | Total |
|  | No. | No. | \$'000 | \$'000 | \$'000 | \$'000 | \$ 000 |
| 1955................................ | 5,081 | 147,812 | 96, 273 | 72,236 | 211,415 | 35,385 | 415,309 |
| 1955 | 5,067 | 149,625 | 104,453 | 78,169 | 223,398 | 35,811 | 441,831 |
| 1957. | 5,151 | 151,517 | 110,505 | 84,049 | 238,210 | 37,305 | 470,069 |
| 1958. | 5,088 | 151,362 | 111,174 | 87,550 | 243,695 | 37,876 | 480,295 |
| 1959. | 5,269 | 154,725 | 117,396 | 95,139 | 264,087 | 40,861 | 517,483 |
| Province, 1960 |  |  |  |  |  |  |  |
| Newfoundland..................... | 55 | 1,077 | 1,235 | 754 | 1,326 | 386 | 3,701 |
| Prince Edward Island.................. | 21 | , 628 | 1,239 | 323 | 1,320 | 58 | , 780 |
| Nova Scotis......................... | 119 | 3,594 | 3,205 | 2,644 | 420 | 560 | 6,829 |
| New Brunswick....................... | 81 | 2,811 | 2,096 | 1,422 | 420 | 595 | 4,113 |
| Quebec. | 1,683 | 44, 260 | 33,210 | 27,222 | 71,324 | 9,880 | 141,636 |
| Ontario.. | 1,499 | 47, 714 | 39,422 | 39,249 | 79,298 | 14,040 | 172,009 |
| Manitoba. | 285 | 7,933 | 5,684 | 4,062 | 27,798 | 2,720 | 40,264 |
| Saskatchewan | 520 | 11,367 | 5,817 | 4,171 | 29,932 | 3,124 | 43,044 |
| Alberta.............................. | 452 | 14,975 | 12,610 | 7,087 | 32,798 | 5,714 | 53,209 |
| British Columbia, Yukon and N.W.T. | 579 | 21,179 | 17,212 | 11,707 | 40,327 | 5,626 | 74,872 |
| Canada, 1960 | 5,294 | 155,538 | 120,890 | 98,641 | 283,223 | 42,703 | 545,45\% |

## Section 2.-The Marketing of Agricultural Products

## Subsection 1.-The Grain Trade, 1961-62

Based on the combined total of the five major Canadian grains (wheat, oats, barley, rye and flaxseed) production, marketings and domestic disappearance during the 1961-62 crop year each recorded substantial declines from their respective 1960-61 levels. Exports of the five grains in 1961-62 were almost the same as in the previous year and carryover stocks at the close of the crop year were considerably lower than those at Aug. 1, 1961.

Marketing of wheat, oats and barley continued under the compulsory crop year pools system of the Canadian Wheat Board. 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 $1,000 \mathrm{bu}$. of oats or 500 bu . of barley or 500 bu . of rye or any combination of these grains which, when calculated on the unit basis, did not exceed 100 units

Deliveries of Durum wheat were placed on a number of special open quotas between the beginning of the crop year and Mar. 15, 1962, at which date the open delivery quota was extended for the remainder of the crop year. Flaxseed was on an open delivery quota during the entire crop year. A number of supplementary delivery quotas were established on soft white spring wheat, oats, barley and rye. An open quota basis was issued for delivery of rye as at Nov. 22, 1961 and for soft white spring wheat at Jan. 23, 1962.

The initial unit quota which prevailed at the beginning of the crop year was followed by general quotas based on bushels per specified acreage. Specified acreage consisted of each permit holder's acreage seeded to wheat (including Durum), oats, barley and rye as well as summer fallow and eligible acreage seeded to cultivated grasses and forage crops. Reflecting the relatively large export clearances during the early months of the crop year, grain shipments out of the Prairie Provinces were comparatively heavy. At the same time marketings declined because of the small crop in 1961. As a result, the Wheat Board was able to advance delivery quotas at a rapid pace. On Jan. 3, 1962, a total of 310 delivery points were placed on an open quota, marking the first time since 1950-51 that stations in the Western Division were on this basis. By Apr. 12, 1962, the Canadian Wheat Board had authorized open delivery quotas at all stations for the remainder of the crop year.
20.-Supply and Disposition of Canadian Grain, Crop Years Ended July 31, 1961 and 1962
(Millions of bushels)


[^260]Wheat.-Supply and Disposition.-With a substantial decline in production more than offsetting larger opening stocks, total supplies of wheat in the 1961-62 crop year were below the $1,000,000,000$-bu. level for the first time since 1954-55 and the lowest since the crop year 1951-52. Total supplies of wheat, consisting of the Aug. 1 carryover of $607,800,000 \mathrm{bu}$. and the 1961 crop of $283,400,000$ bu., amounted to $891,200,000 \mathrm{bu} ., 20$ p.c. less than the 1960-61 total of $1,118,000,000$ bu. and 23 p.c. below the record 1956-57 supplies of $1,152,800,000 \mathrm{bu}$. Exports of wheat and flour in terms of wheat, at $358,000,000$ bu., were 1 p.c. above the $353,200,000$ bu. exported in the preceding year and were the third highest on record. Domestic disappearance of wheat declined to $142,200,000$ bu., the lowest level since the crop year 1949-50 and 9 p.c. less than in 1960-61; a reduction in wheat used for feed more than offset heavier requirements for food and seed. With total disappearance amounting to $500,200,000$ bu. and production at $283,400,000$ bu., carryover stocks at July 31 registered a 52-p.c. decline from 607,800,000 bu. in 1961 to 391,100,000 bu. in 1962.


Price and Marketing Arrangements.-Marketing of western Canadian wheat during the crop year 1961-62 was again conducted by the Canadian Wheat Board on a one-year pool basis, the initial payment commencing at $\$ 1.40$ per bu., basis No. 1 Northern in store Fort William-Yort Arthur or Vancouver. However, on Aug. 24, 1961, the Wheat Board announced that initial payments for all grades of wheat would remain at the same levels as during the previous crop year except for all grades of Canada Western Amber Durums.

Initial payments for these grades were increased by 35 cents per bu. to assist in meeting an abnormal supply position and to encourage producers to deliver these grades at the earliest possible date. Effective Mar. 1, 1962, the intial payment prices for wheat were increased by 75 cents per bu. for Durums (in addition to the 35 -cent increase announced Aug. 24) and 10 cents per bu. for all other grades of wheat. An adjustment payment was made to producers at these rates for deliveries during the period Aug. 1, 1961 to Feb. 28, 1962.

An interim payment on the 1961-62 wheat pool account pertaining to Durum grades was announced on Dec. 6, 1962, and this payment was, at the same time, a final payment on 1961-62 deliveries. Although the Canadian Wheat Board Act does not make provision for separate final payments for Durum and other spring wheat, it does provide for interim payments when they can be made without a loss. Producers delivered $10,500,000 \mathrm{bu}$. of Durum wheat to the 1961-62 pool and all of it was sold. After deduction of the 1-p.c. Prairie Farm Assistance Act levy, the interim payment amounted to $\$ 6,900,000$, or an average of 65.9 cents per bu. The final payment on the 1961-62 pool account for wheat, announced Mar. 22, 1963, was about $\$ 123,900,000$, which, after deduction of the PFAA levy, amounted to a record 42.974 cents per bu. The total final payment for No. 1 Northern basis in store Fort William-Port Arthur or Vancouver, before deducting the PFAA levy, was $\$ 1.91021$ per bu.

The crop year 1961-62 coincided with the third year of the fourth three-year International Wheat Agreement. Sales under the Agreement were widely distributed; 28 of the 36 importing countries included in the pact purchased wheat and /or flour from Canada. Such purchases amounted to the equivalent of $232,100,000 \mathrm{bu}$. and accounted for 37 p.c. of total sales under the Agreement. The leading IWA market for Canadian wheat and flour was Britain, shipments to that country amounting to some $86,000,000 \mathrm{bu}$. Other major importers were: Japan, 49,100,000 bu.; the Federal Republic of Germany, 43,900,000 bu.; Belgium and Luxembourg, 11,700,000 bu.; East Germany, $8,000,000$ bu.; Switzerland, $8,000,000$ bu.; the Philippines, $4,900,000$ bu.; and Venezuela, $4,700,000$ bu. The leading markets for Class II wheat were: Mainland China, $72,000,000$ bu.; Poland, $12,300,000$ bu.; Italy, $3,900,000$ bu.; the United States, 2,900,000 bu.; and Finland, 2,500,000 bu.

During 1961-62, domestic sales of all classes of wheat were made at the same prices as those prevailing for wheat sold under the International Wheat Agreement. Class II prices for all grades of wheat coincided with the IWA and domestic quotations.

## 21.-Production, Imports, Exports and Domestic Use of Wheat, Crop Years Ended July 31, 1957-62

(Millions of bushels)

| Item | 1956-57 | 1957-58 | 1958-59 | 1959-60 | 1960-61 | 1961-62 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Carryover, Aug. 1.............................. | 579.6 | 733.5 | 648.5 | 588.0 | 599.6 | 607.8 |
| Production. | 573.0 | 392.7 | 398.1 | 445.1 | 518.4 | 283.4 |
| Imports ${ }^{1}$. | 0.1 | 2 | 2 | 2 | 2 | 2 |
| Totals, Supply................... | 1,152.8 | 1,126.3 | 1,046.5 | 1,033.1 | 1,118.0 | 891.2 |
|  | 264.4 | 320.3 | 294.5 | 277.3 | 353.2 | 358.0 |
| Domestic use. | 154.8 | 157.5 | 164.0 | 156.2 | 156.9 | 142.2 |
| Totals, Disposition............... | 419.2 | 477.8 | 458.5 | 433.5 | 510.1 | 500.2 |
| Carryover, July 31. | 733.5 | 648.5 | 588.0 | 599.6 | 607.8 | 391.1 |

[^261]Other Grains.-Supply and Disposition.-The supply and disposition of the major Canadian grains for the crop years 1960-61 and 1961-62 is shown in Table 20.

Price and Marketing Arrangements.-Marketings of Western Canadian oats and barley were again carried on through compulsory crop year pools, administered by the Canadian Wheat Board. The initial payment for oats in the 1961-62 crop year, basis No. 2 C.W. in store Fort William-Port Arthur, was 60 cents per bu., the same as in 1960-61. The initial payment for barley, basis No. 3 C.W. Six-Row in store Fort William-Port Arthur, at 96 cents per bu., was also unchanged from 1960-61. No interim payments were made on either grain during the crop year. Final payment on the 1961-62 oat pool was announced Nov. 26, 1962. The final surplus for distribution was some $\$ 4,300,000$ and, based on $24,900,000$ bu. delivered to the 1961-62 pool, averaged 17.26659 cents per bu. before deducting the PFAA levy. The final payment on the 1961-62 barley pool, based on deliveries of $56,400,000 \mathrm{bu}$. and a final payment to producers of about $\$ 17,000,000$, averaged 30.2 cents per bu. before deduction of the PFAA levy. Total prices, basis in store Fort William-Port Arthur, realized by producers for representative grades prior to the PFAA levy were as follows: No. 2 C.W. oats, $\$ 0.77196$ per bu.; No. 1 Feed oats, $\$ 0.69542$ per bu.; No. 3 C.W. Six-Row barley, $\$ 1.28045$ per bu.; and No. 1 Feed barley, $\$ 1.16170$ per bu. Some $3,400,000 \mathrm{bu}$. of rye and $12,000,000 \mathrm{bu}$. of flaxseed were delivered by farmers in Western Canada in 1961-62.

Combined exports of oats, barley, rye and flaxseed (including exports of oatmeal and rolled oats, malt and pot and pearl barley in terms of grain equivalent) amounted to $62,700,000$ bu. during the crop year 1961-62, about 5 p.c. less than the comparable 1960-61 level of $66,100,000 \mathrm{bu}$. and sharply below the ten-year (1950-51-1959-60) average of $126,800,000$ bu. Exports of oats and rye were larger than in the previous season and shipments of barley and flaxseed were lower.

Clearances of Canadian oats in 1961-62 amounted to 2,700,000 bu. and represented one of the lowest shipments of this grain on record. Britain and the United States, with imports of $1,600,000$ bu. and $1,000,000$ bu., respectively, absorbed the bulk of the exports. Exports of bagged seed oats amounted to $300,000 \mathrm{bu}$. and of oatmeal and rolled oats, in terms of grain equivalent, to 500,000 bu., amounts relatively unchanged from the previous year. Barley exports of $36,700,000$ bu. represented a decline of 12 p.c. from the 1960-61 level of $41,500,000$ bu.; Mainland China purchased $19,300,000$ bu., more than half the 1961-62 total, and most of the remainder was accounted for by exports of $9,700,000 \mathrm{bu}$. to the United States and $7,400,000$ bu. to Britain. Shipments to these three countries during the preceding crop year were $20,400,000 \mathrm{bu} ., 12,000,000 \mathrm{bu}$. and $8,700,000$ bu., respectively. In addition, exports of malt were the equivalent of $6,300,000 \mathrm{bu}$. of barley compared with $5,600,000$ bu. in 1960-61.

Exports of Canadian rye during 1961-62, at 4,400,000 bu., showed considerable improvement over the previous year's total of $2,600,000$ bu.; the major customer was the Federal Republic of Germany, which purchased $3,600,000$ bu. Canadian flaxseed moving overseas during 1961-62 amounted to $12,000,000 \mathrm{bu}$. compared with $13,600,000 \mathrm{bu}$. in the previous year; Britain imported $4,600,000 \mathrm{bu}$. and Japan $3,100,000 \mathrm{bu}$. Exports of linseed oil were equivalent to about $500,000 \mathrm{bu}$. of flaxseed and most of it went to Britain.

Trade in rapeseed amounted to $6,900,000 \mathrm{bu}$. against $8,100,000 \mathrm{bu}$. in the preceding year, the leading markets being Italy, Japan and the Netherlands. Mustard seed exports, at 500,000 bu., were somewhat reduced from the $1960-61$ level of 800,000 bu.; the major markets in the latest year were the United States, Japan and Belgium and Luxembourg.

Miscellaneous Grain Trade Statistics.-Grain Handled at Eastern Elevators.-Total receipts of the five major grains at eastern elevators in the 1961-62 crop year amounted to $293,100,000$ bu., 18 p.c. less than in 1960-61. Shipments totalled $312,100,000$ bu., 13 p.c. less than in 1960-61. Receipts and shipments of rye and flaxseed increased but handlings of each of the other three grains declined.

## 22.-Canadian Grain Handled at Eastern Elevators, Crop Years Ended July 31, 1958-62

Nore.-Figures for the crop years ended 1922-57 are given in the corresponding table of previous Year Books beginning with the 1931 edition.

| Item and Crop Year | Wheat | Oats | Barley | Rye | Flaxseed | Total Grain |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Receipts- | bu. | bu. | bu. | bu. | bu. | bu. |
| 1957-58. | 302,934,930 | 47,087,691 | 80,972,437 | 2,807,022 | 17,419,477 | 451,221,557 |
| 1958-59. | 287, 235, 822 | 40, 935, 632 | 55,087,986 | 2,468,424 | 14,779,910 | 400,507,774 |
| 1959-60. | 273, 525, 714 | 32,442,882 | 36,293,125 | 1,345,336 | 6,989,980 | 350, 597, 037 |
| 1960-61 | 283,713,889 | 32,686, 125 | 34,139, 873 | 1,305,521 | 6,010,008 | 357, 855, 416 |
| 1961-62. | 243,025, 206 | 18,252,519 | 21,412,213 | 3,202,174 | 7,197,612 | 293, 089,724 |
| Shipments- |  |  |  |  |  |  |
| 1957-58. | 307, 832,795 | 46,940,137 | 81,268,949 | 2,914,724 | 17, 473, 880 | 456, 430, 485 |
| 1958-59 | 294, 412,290 | 42,689,493 | 56, 544,772 | 2,551,111 | 14,635, 190 | $410,832,856$ |
| 1959-60. | 254,448,048 | 33,411,003 | 37,260,454 | 1,413,050 | 7,182,791 | 333,715, 346 |
| 1960-61. | 287, 810,455 | 30,785, 810 | 31,288,234 | 1,200,616 | 6,086,236 | 357, 171, 351 |
| 1961-62. | 258,787,935 | 19,494,745 | 23,530, 370 | 3,227,310 | 7,098,689 | 312,139,049 |

Grain Inspections.-The volume of Canadian wheat, oats, barley, rye, flaxseed, corn, buckwheat and mixed grain inspected by the Board of Grain Commissioners for Canada in the crop year $1961-62$ amounted to $531,900,000$ bu., 9 p.c. below the $1960-61$ total of $586,100,000$ bu.

## 23.-Quantities of Grain and Other Field Crops Inspected, Crop Years Ended July 31, 1961 and 1962

| Crop | 1960-61 |  |  | 1961-62 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Western Division | Eastern Division | Total | Western Division | Eastern Division | Total |
|  | bu. | bu. | bu. | bu. | bu. | bu. |
| Wheat. | 411,509,920 | 5,261,226 | 416,771,146 | 405, 957, 236 | 9,280,768 | 415, 238,004 |
| Spring wheat. . . . . . . | 411,509,920 | , | 411,509,920 | 405,957,236 | 86,755 | 406,043,991 |
| Winter wheat......... | 411,600,020 | 5,261,226 | 5,261,226 | 405,051, | 9,194,013 | 9,194,018 |
| Oats. | 40,178,768 | 640,579 | 40,819, 347 | 23, 040,336 | 132, 200 | 23,172,536 |
| Barley................... | 100, 815, 644 | 128, 200 | 100,943, 844 | 72,449,452 | 184,555 | 72,634,007 |
| Rye..................... | 5,751, 846 | 650 | 5,752,496 | 4,519,424 | 35,700 | 4,555,124 |
| Flaxseed. | 20,517,695 |  | 20,517,695 | 13,615,098 | 8,300 | 13,623,398 |
| Corn. | 171,325 | 787,270 | 958,595 | 235,752 | 2,136,049 | 2,371,801 |
| Buckwheat. | 60,916 | 60,174 | 121,090 | 2,203 | 60,449 | 62,652 |
| Mixed grain ${ }^{1} . . . . . . . . . .$. | 247,675 |  | 247,675 | 234,384 | - | 234,384 |
| Soybeans............... | - | 3,012,753 | 3,012,753 | - | 6,766,585 | 6,766,585 |
| Beans. . . . . . . . . . . . . . . | - 128 | 384,576 | 384,576 | - | 643,546 | 643,546 |
| Peas....... . . . . . . . . . . | 96,128 | , | 96,128 | 15,020 | - | 15,020 |
| Sample grain ${ }^{1}$ | 179,287 | - | 179,287 | 224,213 | - | 224, 213 |
| Rapeseed ${ }^{1}$. . . | 13,535,520 | - | 13,535,520 | 10,533,106 | - | 10,533,106 |
| Mustard seed ${ }^{1} . . . . . . . .$. | 1,083,372 | - | 1,083,372 | 416,944 | - | 416,944 |
| Safflower seed ${ }^{2}$. . . . . . . . | 50,446 | - | 50,446 | 3,976 | - | 3,976 |
| Western Grain Inspec- <br> ted in the Eastern <br> Division- |  |  |  |  |  |  |
| Barley . . . . . . . . . . . . . | ... | 405, 457 | 405, 457 | ... | 386,575 | 386,575 |
| Flaxseed............... | $\ldots$ | 763,565 | 763,565 | ... | 561,180 | 561,180 |
| Buckwheat........... . | - |  |  | - | 7,053 | 7,053 |
| Peas.................. | ... | 67,758 | 67,758 | ... | 68,654 | 68,654 |
|  | ... | 212,957 | 212,957 | ... | - | - |

[^262]${ }^{2}$ In bushels of 45 lb .
Lake Shipments of Grain.-The 1962 navigation season opened on Apr. 22 and closed on Dec. 13. During that period, total vessel shipments of wheat, oats, barley, rye, flaxseed and buckwheat amounted to $249,700,000$ bu., 23 p.c. less than the $326,100,000$ bu. shipped during the 1961 navigation season which opened on Apr. 9 and closed on Dec. 16.

## 24.-Lake Shipments of Canadian Grain from Fort William-Port Arthur, Season of Navigation 1961 and 1962

| Grain | 1961 |  |  |  | 1962 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { To } \\ \text { Canadian } \\ \text { Ports } \end{gathered}$ | To U.S. Ports | To Overseas Direct | Total Shipments | To Canadian Ports | To U.S. | To Overseas Direct | Total Shipments |
| Wheat..........bu. | 230,180, 141 | 2,573,190 | 11,023,801 | 243,777,132 | 173,991,505 | 1,842,045 | 7,081,614 | 182,915, 164 |
| Oats..........." | 23,762,895 | - | 20,753 | 23.783,648 | 21,398, 044 | 158,868 | 1,366,129 | 22,923,041 |
| Barley.......... " | 32,836, 359 | 11,951,060 | 1,467,350 | 46,254,769 | 23,627,148 | 3,469,039 | 2,638, 544 | 29,734,731 |
| Rye........... " | 2,666,658 | 1,038,769 | 1, 578,275 | 4,283,702 | 2,306,651 | 1,104,708 | 2,711,190 | 6,122,549 |
| Flaxseed......." " | 6,423,193 | - | 1,579,272 | 8,002,465 | 6,607,024 | - | 1,357, 733 | 7,964,757 |
| Buckwheat....." |  | - |  |  | 31,860 |  |  | 31,860 |
| Totals....bu. | 295,869,246 | 15,563,019 | 14,669,451 | 326,101,716 | 227,962,232 | 6,574,660 | 15,155,210 | 249,692,102 |
| Sample grain. . .lb. <br> Screenings.....tons | $\begin{array}{r} 18,564,788 \\ 48,167 \end{array}$ | 32,796 | $\overline{15}, 813$ | $\begin{array}{r} 18,564,788 \\ 96,776 \end{array}$ | $18,253,250$ 40,339 | 二 | $\overline{20,064}$ | $\begin{array}{r} 18,253,250 \\ 60,403 \end{array}$ |

Wheat Flour.-Production of wheat flour in the crop year 1961-62 amounted to $39,500,000$ cwt., about 1 p.c. lower than in the previous crop year. Similarly, wheat milled for flour at $88,200,000$ bu. was slightly less than during 1960-61. Of the wheat milled for flour, about $79,000,000 \mathrm{bu}$. were Western Canadian spring wheat (other than Durum), the remainder consisting of Ontario winter wheat to the amount of $6,600,000$ bu., Durum $1,800,000$ bu., and "other" 896,000 bu. Based on a daily operating potential of some 166,400 cwt., utilization of milling capacity averaged 81.5 p.c. in 1961-62 compared with 82.6 p.c. in the preceding year.

Exports of wheat flour during the 1961-62 crop year amounted to $13,893,000$ cwt., 10 p.c. lower than the quantity exported during the previous crop year.

## 25.-Wheat Milled for Flour, and Production and Exports of Wheat Flour, Five-Year Averages 1936-55 and Crop Years Ended July 31, 1956-62

| Crop Year (Aug. 1-July 31) | Wheat Milled for Flour | Wheat Flour Production | Wheat Flour Exports |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  | Amount | P.C. of Production |
|  | '000 bu. | cwt. | cwt. |  |
| Av. 1935-36 - 1939-40. | 67,845 | 29,405,451 | 9,603,941 | 32.7 |
| Av. 1940-41 - 1944-45. | 99,705 | 43,908,245 | 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 | 43,847,894 | 21,812,041 | 49.7 |
| 1955-56. | 91,770 | 40,148,750 | 17,391,300 | 43.3 |
| 1956-57. | 85,149 | 37,623,446 | 14,582,431 | 38.8 |
| 1957-58. | 92,289 | 40,819,678 | 17,556,886 | 43.0 |
| 1958-59. | 90,143 | 39,826,493 | 16,141, 267 | 40.5 |
| 1960-61. | 91,390 89 | 40,344,578 $39,914,644$ | $16,073,893$ $15,513,836$ | 39.8 38.9 |
| 1961-62.... | 88,241 | 39,539,651 | 13,892,676 | 35.1 |

## Subsection 2.-Livestock Marketings*

Marketings of cattle and sheep and lambs in 1962 were lower than in 1961 while marketings of hogs and calves were higher. Cattle marketed through stockyards and shipped directly to packing plants numbered $2,493,814$, down 1.5 p.c. from the previous year, and the proportion of steers and heifers graded choice and good was lower. The number of cattle moving from stockyards and plants to feedlots was also down about 5 p.c. compared

[^263]with 1961. On the other hand, calves marketed at stockyards and packing plants increased in number by 7.1 p.c. and the number of hog carcasses graded at approved and inspected plants increased by 2.2 p.c. The proportion of Grade A hogs was 34.9 p.c. of the total, slightly higher than in 1961. Marketings of sheep and lambs decreased 5.2 p.c.

## 26.-Livestock Marketed at Stockyards and Packing Plants, by Grade, 1958-62

(Exclusive of Newfoundland)

${ }^{1}$ Lamb carcasses.

# 27.-Livestock Marketed at Public Stockyards, Packing Plants and Direct for Export, by Province, 1961 and 1962 

(Exclusive of Newfoundland)

| Year and Livestock | Maritime Provinces | Quebec | Ontario | Manitoba | Saskatchewan | Alberta | British Columbia | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1961 | No. | No. | No. | No. | No. | No. | No. | No. |
| Cattle | 36,944 | 108,967 | 751,054 | 291,268 | 583,192 | 882,344 | 69,874 | 2,723,643 |
| Totals to stockyards | 3,120 | 60,471 | 389,512 | 184,168 | 383,597 | 470,979 | 8,987 | 1,500,834 |
| Direct to packers.... | 32,101 | 46,080 | 323,587 | 104,837 | 139,599 | 350, 582 | 34,628 | 1,031,414 |
| Direct for export. | 1,083 | 2,416 | 37,955 | 1,633 | 41,609 | 49,483 | 18,623 | 152,802 |
| Country points in other provinces ${ }^{1}$ | 640 | - | - | 630 | 18,387 | 11,300 | 7,636 | 38,593 |
| Calves | 20,772 | 269,895 | 215,927 | 110,889 | 199,123 | 222,149 | 11,224 | 1,049,979 |
| Totals to stockyards | 6,976 | 87,304 | 96,510 | 72,440 | 140,013 | 121,269 | 1,874 | 526,386 392604 |
| Direct to packers. | 11,451 | 175,838 | 101,952 | 33,148 | 13,911 | 51,294 | 5,010 1,027 | 392,091 40,991 |
| Direct for export. | 310 | 6,753 | 17,465 | 5,008 | 8,713 | 1,715 | 1,027 |  |
| Country points in other provinces ${ }^{1}$ | 2,035 | - | - | 293 | 36,486 | 47,871 | 3,313 | 89,998 |

[^264]
## 27.-Livestock Marketed at Public Stockyards, Packing Plants and Direct for Export, by Province, 1961 and 1962 -concluded

| Year and Livestock | Maritime Provinces | Quebec | Ontario | Manitoba | Saskatchewan | Alberta | British Columbia | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1961-concl. | No. | No. | No. | No. | No. | No. | No. | No. |
| Hogs. | 175,933 | 1,163,433 | 2,333,259 | 519,270 | 585,784 | 1,659,909 | 33,335 | 6,470,923 |
| Totals to stockyar |  | 1, 68, 183 | - 242,726 | 89,976 | 68,030 | 146,355 | 844 32.418 | 5, 816,114 |
| Direct to packers. | 175,415 518 | 1,095,250 | $2,070,386$ 20,147 | 429,291 | 517,743 11 | $1,512,339$ 1,215 | 32,418 7 | $5,832,842$ 21,967 |
| Sheep and Lambs. | 38,914 | 85,634 | 145,718 | 41,745 | 67,398 | 222,324 | 30,048 | 631,781 |
| Totals to stockyar | 2,641 | 9,450 | 63,647 | 13,862 | 22,614 | 47,781 | 675 | 160,670 |
| Direct to packers. | 36,064 | 76,182 | 81,233 | 26,632 | 33,719 | 159,832 | 29,082 | 442,744 |
| Direct for export. | 209 | - 2 | 838 | 24 | 7 | 172 | 92 | 1,344 |
| Country points in other provinces ${ }^{1}$ $\qquad$ | - | - | - | 1,227 | 11,058 | 14,539 | 199 | 27,023 |
| Total Inward Move-ment-2 |  |  |  |  |  |  |  |  |
| Cattle. | 527 | 4,789 | 152,088 | 26,338 | 64,022 | 147,470 | 1,603 | 396,837 |
| Calves. | 159 | 1,084 | 161,743 | 4,934 | 13,303 | 54,315 | 1,064 | 236,602 |
| Sheep and lam | 7 | 1,824 | 31,165 | 2,269 | 1,501 | 7,912 | 398 | 45,076 |
| 1962 |  |  |  |  |  |  |  |  |
| Cattle | 46,765 | 122,260 | 845,168 | 220,073 | 507,887 | 875,932 | 86,446 | 2,704,531 |
| Totals to stockyar | 4,390 | 70,998 | 440,177 | 137,496 | 312,915 | 487,960 | 10,498 | 1,464,434 |
| Direct to packers. | 40,428 | 49,587 | 364,083 | 80,548 | 126,029 | 330,208 | 38,497 | 1,029,380 |
| Direct for export. | 1,373 | 1,675 | 40,873 | 1,844 | 57,822 | 51,810 | 27,300 | 182,697 |
| Country points in other provinces ${ }^{1}$ $\qquad$ | 574 | - | 35 | 185 | 11,121 | 5,954 | 10,151 | 28,020 |
| Calves | 22,879 | 312,834 | 236,819 | 93,182 | 214,450 | 238,888 | 18,414 | 1,137,466 |
| Totals to stockyards | 5,653 | 88,708 | 98,081 | 65,649 | 141,366 | 140,943 | 4,116 | 544,516 |
| Direct to packers. | 13,885 | 211,542 | 121,109 | 25,342 | 13,393 | 48,166 | 6,284 | 439,721 |
| Direct for export. | 201 | 12,584 | 17,588 | 1,982 | 19,734 | 2,183 | 681 | 54,953 |
| Country points in other provinces ${ }^{1}$ | 3,140 | - | 41 | 209 | 39,957 | 47,596 | 7,333 | 98,276 |
| Hogs | 172,292 | 1,336,739 | 2,402,217 | 467,086 | 512,908 | 1,674,672 | 32,050 | 6,597,964 |
| Totals to stockyar |  | 74,331 | 319,556 | 75,276 | 58,233 | 151,146 | 28 | 678,570 |
| Direct to packers. | 171,614 | 1,262,407 | 2,079,878 | 391,804 | 454,622 | 1,523,031 | 32,019 | 5,915,375 |
| Direct for export. | 678 | 1 | 2,783 | 6 | 53 | 495 | 3 | 4,019 |
| Sheep and Lambs. | 38,664 | 70,770 | 157,070 | 35,815 | 69,058 | 205,401 | 31,271 | 608,049 |
| Totals to stockyards | 962 | 5,920 | 67,812 | 13,443 | 21,513 | 37,223 | 698 | 147,576 |
| Direct to packers. | 37,684 | 64,836 | 88,483 | 22,322 | 36,280 | 144,451 | 30,391 | 424,447 |
| Direct for export........ | 18 | 14 | 775 | - | 1,061 | 16,662 | 72 | 18,602 |
| Country points in other provinces ${ }^{1}$ | - | - | - | 50 | 10,204 | 7,060 | 110 | 17,424 |
| Total Inward Move-ment- |  |  |  |  |  |  |  |  |
| Cattle. | 180 | 1,931 | 112,247 | 29,765 | 56,306 | 172,231 | 2,959 | 375,619 |
| Calves. | 89 | 938 | 167,963 | 5,306 | 14,421 | 62,750 | 1,035 | 252,502 |
| Sheep and lamb | - | 564 | 17,316 | 2,457 | 1,483 | 8,169 | 733 | 30,722 |

${ }^{1}$ Livestock billed through stockyards to country points outside province of origin. $\quad{ }^{2}$ Movement to farms from stockyards and plants on through-billings from country points in one province to country points in another province.

## Section 3.-Warehousing and Cold Storage*

The presentation of warehousing statistics is difficult because it is not an easy matter to define clearly what are to be regarded as stocks in storage. However, if the strict economic definition of warehousing is adopted, then this term should be restricted to those facilities that add the utility of 'time' to the 'form' utilities that are the product of the extraction and manufacturing industries. Because the warehouses established in close connection with retail trade are more often than not convenient places for the temporary storage of goods in process of transfer from the manufacturer or wholesaler to the consumer, they are not, in the strict economic sense, services that add the utility of 'time' to commodities already worked up into 'form'. Separate statistics of the latter branch of storage are not available.

[^265]The statistics of warehousing are gathered together under this Section. Subsection 1 presents statistics of the licensed storage of grain. Subsection 2 deals with cold storage facilities without which perishable foods such as meats, dairy products, fish and fruits could not be exchanged or distributed on a wide scale; it includes also figures of stocks of food on hand. Subsection 3 deals with the storage of petroleum and its products, and Subsection 4 with public warehouses and customs warehouses. The facilities that specialize in the storage of tobacco and alcoholic liquors are analysed in Subsection 5. These bonded warehouses, as they are called, are under the strict surveillance of Federal Government excise officers, who supervise all movements into and from such places of storage.

## Subsection 1.-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 $652,112,000$ bu. at Dec. 1, 1961 and represented an increase of $7,156,000$ bu. over capacity at Dec. 1, 1960 . Although the capacity of western country elevators declined by 575,000 bu., capacity at the Lakehead was expanded by $6,800,000$ bu. and relatively small increases were recorded at interior, private and mill elevators and at lower Lake and St. Lawrence ports.

The system was generally congested at the beginning of 1961-62 but this congestion was relieved, especially during the latter months of the crop year, as a result of heavy export shipments and the prairie drought which caused farmers to hold back grain that might otherwise have been delivered before the end of the crop year. As indicated in Table 28, only 56.3 p.c. of the licensed storage capacity was occupied at July 31, 1962 as compared with 74.9 p.c. a year earlier.

## 28.-Licensed Grain Storage Capacity and Grain in Store, Crop Years 1960-61 and 1961-62

| Crop Year and Storage Position | Licensed Storage Capacity | Canadian GraininLicensed Storage |  |  | Proportion of Licensed Storage Capacity Occupied |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\underset{1960}{ }{ }_{\substack{\text { Dec. } \\ \hline}}$ | $\begin{gathered} \text { Nov. } 30 \text {, } \\ 1960 \end{gathered}$ | $\underset{1961}{\text { Mar. 29, }}$ | $\begin{aligned} & \text { July } 31, ~ \\ & 1961 \end{aligned}$ | $\begin{gathered} \text { Nov. } 30, \\ 1960 \end{gathered}$ | $\underset{1961}{\text { Mar. } 29,}$ | $\begin{gathered} \text { July } 31, \\ 1961 \end{gathered}$ |
| 1960-61 | '000 bu. | '000 bu. | '000 bu. | '000 bu. | p.c. | p.c. | p.c. |
| Western country | 374,033 | 303,124 | 304,312 | 288,648 | 81.0 | 81.4 | 77.2 |
| Interior, private and m | 20,514 | 10,218 | 9,732 | 10,423 | 49.8 | 47.4 | 50.8 |
| Interior, terminals. | 18,100 | 12,756 | 11,741 | 11,751 | 70.5 | 64.9 | 64.9 |
| Pacific coast. | 24,906 | 12,222 | 15,546 | 13,553 | 49.1 | 62.4 | 54.4 |
| Churchill. | 5,000 | 4,837 | 4,837 | 4,224 | 96.7 | 96.7 | 84.5 |
| Fort William-Port Arthur............. | 91,967 | 60,685 | 84,742 | 74,281 | 66.0 | 92.1 | 80.8 |
| Georgian Bay and upper Lake ports.. | 36,566 | 32,903 | 11,272 | 30,938 | 90.0 | 30.8 | 84.6 |
| Lower Lake and upper St. Lawrence ports. | 21,460 | 16,264 | 9,468 | 14,384 | 75.8 | 44.1 | 67.0 |
| Lower St. Lawrence ports...... | 45,180 | 34,154 | 20,043 | 30,261 | 75.6 | 44.4 | 67.0 |
| Maritime ports (excl. Newfoundland). | 7,229 | 6,101 | 3,199 | 4,433 | 84.4 | 44.3 | 61.3 |
| Totals, 1960-61. | 644,956 | 493,265 | 474,894 | 482,896 | 76.5 | 73.6 | 74.9 |
|  | $\underset{1961}{\text { Dec. }^{1},}$ | $\underset{1961}{\text { Nov. } 29,}$ | $\begin{gathered} \text { Mar. } 28, \\ 1962 \end{gathered}$ | $\begin{gathered} \text { July } 31, \\ 1962 \end{gathered}$ | $\underset{1961}{\mathrm{Nov.} 29,}$ | $\underset{1962}{\text { Mar. } 28,}$ | $\begin{gathered} \text { July 31, } \\ 1962 \end{gathered}$ |
| 1961-62 | '000 bu. | '000 bu. | '000 bu. | '000 bu. | p.c. | p.c. | p.c. |
| Western country.. | 373,458 | 250,771 | 193,420 | 194,611 | 67.1 | 51.8 | 52.1 |
| Interior, private and mill. | 20,926 | 10,608 | 10,471 | 9,065 | 50.7 | 50.0 | 43.3 |
| Interior, terminals....... | 18,100 24,906 | 13,538 14,058 | 12,680 11,365 | 9,093 13,614 | 74.8 56.4 | 70.1 45.6 | 50.2 54.7 |
| Churchill.... | 5,000 | 4,829 | 4,829 | 4,400 | 96.6 | 96.6 | 88.0 |
| Fort William-Port Arthur | 98,767 | 53,258 | 80,935 | 75,509 | 54.0 | 81.9 | 76.5 |
| Georgian Bay and upper Lake ports.. | 36,566 | 27,819 | 23,342 | 19,764 | 76.1 | 63.8 | 54.1 |
| Lower Lake and upper St. Lawrence ports. | 21,480 | 11,032 | 9,952 | 10,816 | 51.4 | 46.3 | 50.4 |
| Lower St. Lawrence ports..... | 45,680 | 33,386 | 21,080 | 26,803 | 73.1 | 46.1 | 58.7 |
| Maritime ports (excl. Newfoundland). | 7,229 | 6,497 | 2,536 | 3,534 | 89.9 | 35.1 | 48.9 |
| Totals, 1961-62. | 652,112 | 425,795 | 370,608 | 367,208 | 65.3 | 56.8 | 56.3 |

## Subsection 2.-Cold Storage and Storage of Foods

Cold Storage Warehouses.-Under the Cold Storage Act (RSC 1952, c. 52), as amended (RSC 1952, c. 313), subsidies are granted by the Federal Government to encourage the construction and equipment of cold storage warehouses open to the public. The Act is administered by the Department of Agriculture.

There are five classifications of cold storage warehouses in Canada: (1) public warehouses that store foods and food products and where the entire space is open to the public; (2) semi-public, or those that store foods and where part of the space is retained for the products of the owner and the remainder is available to the public; (3) private, or those that store foods and food products and allot no space to the public, a classification that includes refrigerated space in connection with abattoirs, creameries, dairies, cheese factories and wholesale and retail distributing warehouses; (4) locker plant, where the total space is occupied by lockers for rental to the public and where food and food products may be cut, processed, chilled and frozen for storage in lockers; and (5) bait depots, where space is used solely or principally for the freezing and storing of bait for the use of fishermen.

No hard and fast rule can be laid down for distinguishing between public and private warehouses. In general, those owned and operated by firms trading in the goods stored in the warehouse are considered as private, although most of these places rent space to the public when it is not required for their own purposes.

The figures in Tables 29 and 30, compiled by the Department of Agriculture, give some idea of the cold storage warehouse capacity in Canada, but it must be explained that it is not possible to secure completely accurate information on this subject and that the figures are approximations only.
29.-Cold Storage Warehouses, by Province, Year Ended Mar. 31, 1963
Nore.-Figures are approximations only.

| Province | Subsidized Public Warehouses |  |  |  | All Warehouses |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | Refrigerated Space | Approved Cost | Approved Subsidy | No. | Refrigerated Space |
|  |  | cu. ft. | \$ | \$ |  | cu. ft. |
| Newfoundland... | 2 | 44,078 | 201, 960 | 67,320 | 71 | 2,481,809 |
| Prince Edward Island | 12 | 358,037 | 351,409 | 110,300 | 24 | 599,204 |
| Nova Scotia. | 27 | 5,430,089 | 4,544,841 | 1,372,014 | 194 | 7,445, 051 |
| New Brunswick. | 16 | 2,173,499 | 2,347,527 | 748,178 | 96 | 3,271,083 |
| Quebec. | 64 | 6,716,355 | 6,551,002 | 2,093,678 | 399 | 26,712,504 |
| Ontario. | 95 | 14,863,239 | 12,678,799 | 3,993,738 | 970 | 43, 856,128 |
| Manitoba. | 13 | 3,403,721 | 2,443,996 | 737,443 | 298 | 11,664,914 |
| Saskatchewan. | 24 | 1,243,886 | 1,912,526 | 612,939 | 326 | 5,690,044 |
| Alberta. | 9 | 1,447,845 | 2,153,657 | 701,608 | 307 | 8,548,136 |
| British Columbia. | 80 | 24,771,702 | 10,766,212 | 3,267,407 | 415 | 36,770,938 |
| Totals... | 342 | 60,452,451 | 43,951,929 | 13,704,625 | 3,100 | 147,039,811 |

# 30.-Cold Storage Warehouses and Refrigerated Space, by Province and Type, as at Mar. 31, 1963 

Note.-Figures are subject to revision.

| Province | Public and Semi-public |  | Private |  | Bait Depots |  | Locker Plants |  | All Warehouses |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | Space | No. | Space | No. | Space | No. | Space | No. | Space |
|  |  | cu. ft. |  | cu. ft. |  | $\mathrm{cu} . \mathrm{ft}$. |  | cu. ft. |  | cu. ft. |
| Newfoundland. | , | 262,980 | 41 | 1,792,109 | 27 | 426,720 | - | - | 71 | 2,481,809 |
| Prince Edward Island. . | 13 | - 340,337 | 10 | 257,902 | 1 |  | - | - | 24 | 599, 204 |
| Nova Scotia. | 36 | 5, 173, 407 | 140 | 2,214,547 | 17 | 50,937 | 1 | 6,160 | 194 | 7,445,051 |
| New Brunswick | 25 | 2,549,328 | 71 | 721,755 | - |  | - |  | 96 | 3,271,083 |
| Quebec. | 151 | 17,367,136 | 237 | 9,296,614 | - | - | 11 | 48,754 | 399 | 26,712,504 |
| Ontario | 227 | 26, 856, 501 | 535 | 15, 205,363 | - |  | 208 | 1,794, 264 | 970 | 43, 856, 128 |
| Manitoba | 17 | 5.402, 662 | 194 | 5,475,704 | - | - | 87 | 786,548 | 298 | 11,664,914 |
| Saskatchewan | 14 | 1,333,565 | 113 | 2, 819, 968 | - | - | 199 | 1,536,511 | 326 | 5,690,044 |
| Alberta | 19 | 1,777,141 | 165 | 5, 800, 056 |  |  | 123 | 1,970,939 | 307 | 8,548,136 |
| British Columbia | 89 | 27,467,668 | 232 | 8,197, 353 | - | - | 94 | 1,105,917 | 415 | 36,770,938 |
| Totals | 594 | 88,530,725 | ,738 | 51,781,371 | 45 | 478,622 | 723 | 6,249,093 | 3,100 | 147,039,811 |

31.-Stocks of Food Commodities in Dairy Factories and Cold Storage Warehouses, as at Jan. 1, 1961 and 1962

| Year and Item | As at Jan. 1 | $\underset{\text { Muring }}{\text { Minimum }}$ | Date at which Minimum Occurred | $\begin{gathered} \text { Maximum } \\ \text { during } \\ \text { Year } \end{gathered}$ | Date at which Maximum Occurred | TwelveMonth Average |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1961 |  |  |  |  |  |  |
| Butter, creamery, dairy and whey ${ }^{1}$ | 113,977 | 83,302 |  | 158,506 | Oct. | 120,706 |
| Cheese, cheddar ${ }^{1}$. $\ldots . . . . . .$. . | 55,766 | 43,080 | Apr. 1 | 71,802 | Oct. 1 | 56,795 |
| Evaporated whole milk | 43,549 | 24,078 | Apr. 1 | 81,070 | Oct. 1 | 52,492 |
| Skim milk powder. | 23,204 | 20,440 | Mar. 1 | 53,703 | Nov. 1 | 34,657 |
|  | 51 |  | Dec. 1 | 5 71 | July 1 | 54 |
| Eggs, frozen............... ' 000 lb . | 5,820 | 3,208 | Dec. | 5,820 | Jan. | 4,885 |
| Poultry, dressed and eviscerated ${ }^{1}$ | 27,143 | 17,202 | June | 65,792 | Dec. | 28,546 |
| Pork, fresh.................. " | 4,506 | 4,506 | Jan. 1 | 6,742 | Nov. 1 | 5,479 |
| Pork, frozen | 12,130 | 10,242 | Oct. 1 | 26,843 | May 1 | 17,058 |
| Pork, cured and in cure | 6,317 | 6,317 | Jan. 1 | 8,964 | Dec. 1 | 7,780 |
| Lard. | 5,949 | 4,256 | Nov. 1 | 7,351 | Apr. | 5,671 |
| Beef, fresh | 11,807 | 11,807 | Jan. 1 | 14,445 | Oct. | 13,223 |
| Beef, frozen. | 18,116 | 13,980 | Sept. 1 | 20,872 | Dec. | 16,098 |
| Beef, cured, | 307 | 307 | Jan. 1 | 766 | Oct. | 555 |
| Veal. | 5,284 | 3,180 | Apr. 1 | 5,660 | Dec. 1 | 4,521 |
| Mutton and lamb | 3,314 | 1,327 | Aug. 1 | 5,356 | Dec. 1 | ${ }_{2}^{2,635}$ |
| Apples, fresh................ '000 bu. | 4,827 | 275 | June 1 | 9,714 | Nov. 1 | 2,515 |
| Fruit, frozen............... ' 0000 lb . | 29,490 | 17,219 | June 1 | 42,866 | Oct. 1 | 24,983 |
| Fruit, in preservatives...... , " | 9,555 | 6,167 | June 1 | 11,389 | Dec. 1 | 8,561 7,465 |
| Potatoes................... ' 000 cwt. | 13,898 | 3,240 | June | 20,807 | Nov. | 7,465 |
| 1962 |  |  |  |  |  |  |
| Butter, creamery, dairy and whey ${ }^{1}$. | 127,057 | 78,254 | Apr. | 158,149 | Nov. | 119,372 |
| Cheese, cheddar ${ }^{1}$............ "* | 63,993 | 48, 195 | June 1 | 63,993 | Jan. 1 | 56, 394 |
| Evaporated whole milk.... | 60,169 | 25,198 | May 1 | 66,368 | Oct. 1 | 47,390 |
| Skim milk powder........... | 29,875 | 20,753 | Apr. 1 | 59, 208 | Nov. 1 | 36,399 69 |
|  |  | 42 2,954 | $\begin{array}{ll}\text { Dec. } & 1 \\ \text { Jan. } & 1\end{array}$ | 128 7,660 | June Aug. 1 | 5,673 |
| ${ }_{\text {Pgoltry, dren }}$ dressed and evis- ${ }^{\text {end }}$ | 2,954 | 2,954 | Jan. 1 | 7,600 |  |  |
|  | 43,073 5,360 | 18,354 4,511 | Aug. Aug. 1 | 62,608 6,847 | Dec. Apr. | 33,553 5,593 |
| Pork, frozen | 15,357 | 8,042 | Oct. 1 | 25,178 | June | 17,105 |
| Pork, cured and in cure..... | 6,341 | 6,341 | Jan. 1 | 9,725 | Apr. 1 | 7,420 |
| Lard, .................. | 6,921 | 3,497 | Oct. 1 | 6,921 |  | 5,117 12801 |
| Beef, fresh | 12,847 | 11, 198 | July 1 | 14,764 20,338 | Feb. ${ }^{1}$ | 14,379 |
| Beef, frozen................. | 20,338 375 | 9,119 | Sept. Jan. 1 | 20, ${ }^{238}$ | Jan. June 1 | 14, 449 |
| Beef, cured, etc................ | 375 3,991 | 375 2,559 | Jan.  <br> Apr. 1 | $\begin{array}{r}\text { 5, } \\ \hline, 186\end{array}$ | June ${ }^{\text {Dec. }} 1$ | 3,564 |
| Mutton and lamb | 5,401 | 1,327 | July 1 | 5,401 | Jan. 1 | 2,499 |
| Apples, fresh................ '000 bu. | 6,061 | 382 | June 1 | 11,196 | Nov. ${ }^{1}$ | - 33, ${ }^{3} \mathbf{5 1 3}$ |
| Fruit, frozen................ ' 000 lb lb. | $\begin{array}{r}37,189 \\ 11 \\ \hline\end{array}$ | 23,416 7.958 | $\begin{array}{ll}\text { June } & 1 \\ \text { July } & 1\end{array}$ | 41,460 12,452 | Dec. ${ }^{\text {Dec. }} 1$ | 30,995 9 |
| Fruit, in preservatives...... Potatoes................ | -17,432 | 3,936 | June | 21,578 | Nov. 1 | 8,816 |

${ }^{1}$ Includes amounts in transit.

Cold Storage Holdings of Fish.-Normally, stocks of frozen fish decrease gradually during the early months of the year and reach a low point at the beginning of April or May when fishing activity is at its lowest ebb; during subsequent months they increase and reach a peak at the beginning of October or November. In 1962, stocks followed the usual seasonal trend but were, on the average, slightly lower than in 1961.

The three main items in the production of frozen fish in Canada are groundfish fillets, Pacific salmon and halibut. The production of frozen groundfish fillets on the Atlantic Coast reached an all-time high of $164,000,000 \mathrm{lb}$. in $1962,22,000,000 \mathrm{lb}$. more than in 1961. Demand for these products in the domestic and United States market was good so that year-end stocks were only slightly higher than the year before. At the beginning of the year, stocks of frozen Pacific salmon were much lower than at the beginning of 1961 but production increased by about $3,000,000 \mathrm{lb}$. and exports did not keep pace, with the result that stocks were higher in the last few months of the year. The 1962 production of frozen Pacific dressed halibut, at $17,500,000 \mathrm{lb}$., was about the same as in 1961 and prices were high. Demand was good in the United States market and stocks were, on the average, below those of 1961 .

## 32.-Storage Stocks of Fish, by Month and by Type, 1961 and 1962

Nors.-Stock totals are as at the beginning of each month; stocks of the individual products are monthly averages.

| Month | 1961 | 1962 ${ }^{\text {p }}$ | Group and Product | 1961 | 1962 ${ }^{\text {p }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | '000,000 lb. |  | Frozen, Fresh Seafish ${ }^{1}$. . . . . . . . . . . . . . . . . . . . | '000,000 lb. |  |
| Jan. 1... | 55.0 50.4 |  |  | 42.1 | 40.7 |
| Feb. 1.. | 44.2 | 38.8 | Salmon, Pacific, dressed and filleted. | 5.0 | 4.7 |
| Mar. 1. | 34.4 | 30.7 | Halibut, Pacific, dressed. | 7.2 | 6.5 |
| Apr. | 28.0 | 23.0 | Cod, Atlantic, filleted. | 9.9 | 12.4 |
| May 1. | 29.9 | 23.3 | Frozen, Freshwater Fish ${ }^{1}$. . . . . . . . . . . . . . . . . . | 6.4 | 7.0 |
|  |  |  |  |  |  |
| June 1.. | 36.9 | 30.9 | Tullibee, round or dressed. | 1.80.1 | 0.2 |
|  |  |  |  |  |  |
| July 1.. | 48.7 | 48.0 | Pickerel (yellow and blue), dressed and filleted | 1.3 | 0.7 |
| Aug. 1... | 62.5 | 66.1 | Sauger, dressed and filleted.................. | 0.9 | 0.3 |
| Sept. 1... | 70.5 | 72.1 |  | 1.8 | 2.0 |
| Oct. 1.. | 69.8 | 75.5 | Cod, Atlantic, filleted....................... | 0.7 | 1.0 |
| Nov. 1. | 64.1 | 71.0 | Sea herring, dressed <br> Haddock, dressed | 0.5 | 0.5 |
| Dec. 1. | 60.2 | 67.1 |  | 0.2 | 0.2 |
| Averages.. | 50.3 | 49.7 | Haddock, dressed | 50.3 | 49.7 |

${ }^{1}$ Includes other items not listed.

## Subsection 3.-Storage of Petroleum and Petroleum Products

Bulk storage plants for petroleum and petroleum products are established at convenient distributing centres, often on a waterfront so that full advantage may be taken of the lower cost of water-borne traffic. From these centres the goods are transferred by boat, rail or truck to smaller distributing depots or directly to retail outlets. The principal refining and distributing centres are located at or near Halifax, Saint John, Quebec, Montreal, Ottawa, Toronto, Sarnia, Fort William, Regina, Calgary, Turner Valley, Edmonton and Vancouver.

## 33.-Petroleum and Petroleum Products in Storage as at Jan. 1, 1960-62

(Barrels of 35 Imperial gallons)

| Product | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: |
|  | bbl. | bbl. | bbl. |
| Crude oil. | 9,001,8511 | 9,865,8061 | 10,094,314 |
| Natural gas liquids. | 32,6891 | 186,1421 | -126,812 |
| Liquefied petroleum gas | 277,377 | 164,828 | 149,132 |
| Petrochemical feed stocks | 41,893 | 27,975 | 123,815 |
| Naphtha specialties. | 407,034 | 459,148 | 471,213 |
| Aviation gasoline | 1,430,675 | 1,074,822 | 902,869 |
| Motor gasoline. | 19,178,603 | 18,577,565 | 20,593,875 |
| Aviation turbo-fuel | 1,237,957 | 1,483,803 | 1,568,787 |
| Kerosene, stove oil and tractor fuel | 5,439,609 | 5,539,036 | 6,508,370 |
| Diesel fuel.................... | 6,096,810 | 6,866,470 | 5,991,180 |
| Light fuel oil (Nos. 2 and 3) | 17,284,700 | 17,589,340 | 20,955,047 |
| Heavy fuel oil (Nos. 4, 5 and 6) | 5,762,987 | 6,521,209 | 7, 299,747 |
| Asphalt............. | 1,350,151 | 1,501,845 | 1,638,612 |
| Coke.. | 56,858 | 1,90,805 | 1,79,943 |
| Lubricating oil and grease | 1,503,929 | 1,612,843 | 1,609, 287 |
| Wax and candles. | 24,119 | 18,264 | 24,409 |
| Still gas. | 570 | 1, 1,381 | 782 |
| Unfinished products. | 5,442,328 | 5,979,438 | 6,869,457 |

${ }^{1}$ At refineries only.

## Subsection 4.-Warehousing of General Merchandise and Refrigerated Goods

Public Warehouses.-The summary statistics of the warehousing industry in Canada presented in Table 34 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.
34.-Summary Statistics of Warehousing of General Merchandise and Refrigerated Goods, 1958-61

| Item | $1958{ }^{1}$ | 19591 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: |
| Companies reporting. .............................. No. Investment in land, warehouses, etc.. | 213 $63,958,833$ | $\stackrel{204}{204}$ | 111 $64,896,124$ | $\begin{array}{r} 108 \\ 68,178,081 \end{array}$ |
| Warehousing Facilities- <br> General merchandise. <br> Refrigerated goods. | $\begin{aligned} & 75,295,788^{2} \\ & 30,960,505 \end{aligned}$ | $\begin{aligned} & 7,995,721^{3} \\ & 32,550,680 \end{aligned}$ | $\begin{aligned} & 50,485,820 \\ & 30,653,893 \end{aligned}$ | $\begin{aligned} & 55,527,385 \\ & 32,058,659 \end{aligned}$ |
|  | $16,064,998$ $13,051,872$ $11,359,192$ | $17,841,405$ $15,499,509$ $14,748,085$ | $\begin{array}{r} 16,335,325 \\ 9,883,741 \\ 6,028,315 \end{array}$ | $\begin{array}{r} 15,931,824 \\ 8,953,590 \\ 6,547,492 \end{array}$ |
| Total Revenue........................ \$ | 40,476,062 | 48,088,999 | 32,247,381 | 31,432,906 |
| Operating expenses......................... \$ | 36,624,592 | 43,262,593 | 29,496,885 | 29,314,749 |
| Net Operating Revenue.............. \$ | 3,851,470 | 4,826,406 | 2,750,496 | 2,118,157 |
| Employees, average................................ No. <br> Salaries and wages. | $\begin{array}{r} 5,683 \\ 18,813,722 \end{array}$ | $\begin{array}{r} 6,441 \\ 22,880,612 \end{array}$ | $\begin{array}{r} 3,734 \\ 15,418,560 \end{array}$ | $\begin{array}{r} 3,560 \\ 14,573,924 \end{array}$ |
| Motor Vehicles- <br> Trucks. <br> Tractors <br> Trailers and semi-trailers......................... " | 1,428 329 427 | 1,570 353 477 | 969 173 228 | 783 158 221 |

[^266]Customs Warehouses.-Warehouses for the storage of in-bond goods are known as customs warehouses and are divided into three categories. (1) Those occupied by the Federal Government, some of which are used for examination and appraisal of imported goods and others, known as Queen's warehouses, used for the storage of unclaimed, abandoned, seized or forfeited goods. (2) Bonded warehouses operated and owned by a person other than the Crown and used for the storage and safekeeping of imported goods after entry and conforming to one of the following: (a) an entire building or part of a building completely separated from the remainder of the building by adequate partitions or walls and devoted to the safekeeping of imported goods consigned or sold to the warehouse keeper or other persons; (b) a yard, shed or other suitable enclosure or area devoted to the safekeeping of imported goods too large or too heavy for lodging in a Class 2(a) warehouse; and (c) a farm, yard or other suitable enclosure devoted to the safekeeping of horses, sheep and cattle for feeding and pasturage. (3) Sufferance warehouses for the landing, storage, safekeeping, transfer, examination, delivery and forwarding of imported goods before entry and conforming to one of the following: (a) a warehouse operated or provided by railway, express, airline and shipping companies; (b) warehouses for in-bond goods arriving by commercial motor vehicle; and (c) all sufferance warehouses not described under ( $a$ ) or (b).

## Subsection 5.-Bonded Warehousing and Storage of Wines

Bonded Warehousing.-The Excise Duty Branch of the Department of National Revenue considers any premises licensed under the Excise Act to be a warehouse, whether for storage of raw materials to produce finished tobacco or cigar products or for spirits or malt used for brewing. Practically the total production of spirits is placed in bonded warehouses and only a small part of the output of beer is retained in storage. Wine, unlike spirits and beer, is not secured under bond. All imports of alcoholic beverages must go through bonded warehouses before being released to Provincial Liquor Commissions or Boards, or other agencies authorized by the Commissions or Boards to take alcoholic beverages out of bond. Similarly, tobacco, cigars and cigarettes that are not stamped and duty paid are secured in bond. In addition to these warehouses, there are those in which no manufacturing or production is carried on but which are used solely for the storage of goods upon which duty has not been paid. Goods are stored in these warehouses usually for the purpose of rapid distribution and for delivery as ships' stores.

Table 35 shows the quantities of distilled liquor, tobacco, cigars and cigarettes in bond in recent years. In addition, the year-end inventories of beer in breweries amount to some $30,000,000$ gal.
35.-Distilled Liquor, Tobacco, Cigars and Cigarettes in Bond, Quarterly 1958-62

| Item and Quarter |  | 1958 | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Distilled Liquor- |  |  |  |  |  |  |
| March | 000 pf. gal. | 123,289 | 126,052 | 135,656 | 143,076 | 151,183 |
| June. |  | 125,661 | 130,082 | 137,554 | 146,072 | 153,663 |
| September | " | 125,579 | 130,907 | 137,743 | 146,614 | 153,697 |
| December | " | 126,057 | 132,054 | 139,070 | 147,659 | 150,695 |
| Tobacco, Unmanufactured- |  |  |  |  |  |  |
| March | '000 ${ }^{\prime}$ lb. | 197, 282 | 204,836 | 224,622 | 246,367 | 227,245 |
| June. |  | 187, 174 | 213,529 | 191,142 | 228,044 | 239,170 |
| September | " | 162,040 | 179,611 | 158,357 | 197,726 r | 206,080 |
| December | " | 150,965 | 178,078 | 179,170 | 188,633 | 187,791 |
| Cigars- |  |  |  |  |  |  |
| March. | '000 | 2,727 | 1,977 | 1,300 | 1,393 | 1,734 |
| June. . |  | 1,150 | 349 | 156 | 115 | 154 |
| September | " | 980 | 237 | 195 | 129 | 172 |
| December | " | 530 | 119 | 124 | 156 | 177 |
| Cigarettes at 3 lb. or under- |  |  |  |  |  |  |
| March........................ | '000 | 4,410 | 5,195 | 9,505 | 4,874 | 7,384 |
| June... | " | 5,341 |  | 3,235 | 7,968 | 9,177 |
| Deptember | " | 5,531 6,696 | 3,139 5,738 | 6,805 3,443 | 6,018 3,376 | 5,692 |

${ }^{1}$ Excludes Newfoundland.

Beverage spirits, as shown in Table 36, refer to spirits released for consumption but not to industrial alcohol; malt used is the total malt used to produce malt beer; tobacco includes all types of manufactured tobacco products and snuff.

## 36.-Beverage Spirits, Malt, Tobacco and Tobacco Products Taken Out of Bond and Destined for Consumption, 1953-62

| Year | Beverage Spirits | Malt Used | Cigars | Cigarettes | Tobacco |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | pf. gal. | lb . | '000 | '000 | '000 lb. |
| 1953. | 12,445,166 | 381,508,232 | 235,587 | 21,001,492 | 28,732 |
| 1954. | 11,946,178 | 370, 228,106 | 244,248 | 22,113,102 | 26,846 |
| 1955. | 11,847,649 | 372,693,929 | 252,633 | 24,576,087 | 26,000 |
| 1956. | 13,733,393 | 386,064,673 | 255,570 | 26,997,705 | 23,272 |
| 1957. | 14,544,797 | 404,697, 177 | 292,650 | 30,149,746 | 22,338 |
| 1958. | 15,777,160 | 385,628,053 | 323,124 | 32,404,186 | 23,332 |
| 1959. | 16,173,426 | 399, 626,852 | 311, 277 | 33, 822,125 | 23,911 |
| 1960. | 16,501,382 | 417,348,530 | 332,324 | 34,289,354 | 23,988 |
| 1961. | 16,979,177 | 420, 884,488 | 336,693 | 36,699,203 | 24,027 |
| 1962. | . | 444,744,348 | 351,566 | 38,682,886 | 24,461 |

Storage of Wines.-The wine industry is confined to a few localities such as the Niagara Peninsula in Ontario and the Okanagan Valley in British Columbia. Firms manufacturing native wines are not bonded, as far as the Federal Government is concerned, nor is wine in storage for maturing placed in bond. The only goods warehoused in bond in connection with wineries are sugar supplies and supplies of grape spirit distilled by the distilleries and held by the wineries for fortifying wines.
37.-Native Wine Produced and Placed in Storage for Maturing, 1952-61

| Year | Ontario |  | Other Provinces |  | Totals |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | gal. | \$ | gal. | \$ | gal. | \$ |
| 1952. | 4,383,358 | 2,764,750 | 552,694 | 440, 864 | 4,936,052 | 3,205,614 |
| 1953. | 3,562,498 | 2,237,316 | 572,692 | 430,574 | 4,135,190 | 2,667,890 |
| 1954. | 4,414,981 | 2,688,060 | 640,183 | 510,464 | 5,055, 164 | 3,198,524 |
| 1955. | 5,059,418 | 3,059, 868 | 624,670 | 480,491 | 5,684,088 | 3,540,359 |
| 1956. | 4,945,429 | 2,880,176 | 528,447 | 415,763 | 5,473,876 | 3,295,939 |
| 1957. | 4,746,998 | 3,151,865 | 656,510 | 437,243 | 5,403,508 | 3,589,108 |
| 1958. | 6,593,607 | 3,810,707 | 822,398 | 635, 609 | 7,416,005 | 4,446,316 |
| 1959 | 6,078,805 | 3,623,075 | 954,626 | 754,565 | 7,033,431 | 4,377,640 |
| 1960. | 7,262,953 | 4,619,610 | 829,675 | 785,815 | $8,092,628$ | 5,405,425 |
| 1961. | 7,048,122 | 4,313,406 | 1,005,541 | 750,845 | 8,053,663 | 5,064,251 |

## Section 4.-Co-operative Organizations

Canadian co-operative activities continued to be dominated by marketing and purchasing associations which did a volume of business, including other revenue, amounting to $\$ 1,430,197,000$ during the year ended July 31, 1961. Other revenue, which included payment for services provided by the co-operatives such as grinding, chopping, trucking and revenue for rent, interest dividends and commissions, accounted for $\$ 18,617,000$.

Marketing and purchasing associations reported a membership of $1,324,270$ during 1961, although this number includes some duplication since many individuals belong to more than one co-operative. The number of associations decreased from 1,934 in 1960
to 1,914 in 1961, mostly through amalgamations. The number of places of business declined from 5,537 in 1960 to 5,473 in 1961. Total sales of farm products were recorded at $\$ 1,019,819,000$. Grain and seed sales were valued at $\$ 427,190,000$ and represented 42 p.c. of the total sales of farm products by co-operatives; next in importance were livestock sales valued at $\$ 270,469,000$ and dairy products sales valued at $\$ 228,550,000$. Sales of eggs and poultry and fruit and vegetables, which accounted for most of the remainder, were valued at $\$ 44,640,000$ and $\$ 33,581,000$, respectively.

On the provincial level, Saskatchewan recorded the greatest value of farm products marketed co-operatively. Sales in that province amounted to $\$ 289,762,000$ and grain and seed sales accounted for 66 p.c. of that amount. Other provinces sharing substantially in the sales of farm products by co-operatives were Ontario with $\$ 173,046,000$, Alberta with $\$ 169,008,000$, Quebec with $\$ 119,976,000$, Manitoba with $\$ 105,173,000$ and British Columbia with $\$ 59,342,000$. Leading provinces for co-operative sales of merchandise and supplies were: Quebec with $\$ 90,050,000$, Saskatchewan with $\$ 82,750,000$ and Ontario with $\$ 73,880,000$. Members' equity in marketing and purchasing co-operatives increased by $\$ 14,800,000$ in 1961 ; no change was recorded in liabilities to the public.

Wholesale co-operatives are federations of local co-operatives which act as central marketing agencies for farm products and as wholesalers of farm supplies, machinery and consumer goods. The wholesale associations had assets amounting to $\$ 100,610,000$ in 1961, of which members' equity represented 37 p.c. Total sales of supplies and farm products by these associations amounted to $\$ 293,773,000$ an increase of 11 p.c. over the 1960 total.

In addition to the above-mentioned associations, there were 882 service co-operatives in 1961 providing a wide range of functions such as housing, rural electrification, medical insurance, transportation, grazing, custom grinding, seed cleaning, operation of farm machinery and restaurant operation. These associations had a total membership of 294,249 and assets amounting to $\$ 110,066,000$.

Data for marketing and purchasing co-operatives do not include fishermen's cooperatives. Co-operatives in this category were found in all provinces except Manitoba in 1961. They reported a total membership of 9,593 , sales of fish amounting to $\$ 16,480,000$ and sales of supplies amounting to $\$ 3,982,000$.
38.-Summary Statistics of Co-operative Marketing and Purchasing Associations, Crop Years Ended July 31, 1952-61

| Year | Associations | $\begin{aligned} & \text { Places } \\ & \text { of } \\ & \text { Business } \end{aligned}$ | Shareholders or Members | Sales of Farm Products | $\begin{gathered} \text { Sales } \\ \text { of } \\ \text { Supplies } \end{gathered}$ | Total Business ${ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | \$'000 | \$'000 | \$'000 |
| 1952. | 2,194 | 5,470 | 1,163,803 | 840,114 | 234,848 | 1,085,855 |
| 1953. | 2,221 | 4,987 | 1,195,985 | 874,698 | 245,630 | 1,147,590 |
| 1954. | 2,086 | 4,510 | 1,196,426 | 733,012 | 234,583 | 986,298 |
| 1955. | 1,949 | 5,016 | 1,199,808 | 704,047 | 228,446 | 941,378 |
| 1956. | 2,041 | 5,171 | 1,255,788 | 823,389 | 258,752 | 1,092,516 |
| 1957. | 2,022 | 5,023 | 1,363,470 | 817,601 | 283,730 | 1,116,002 |
| 1958. | 2,002 | 5,135 | 1,321,304 | 898,168 | 296,743 | 1,209,805 |
| 1959. | 1,982 | 5,267 | 1,290,462 | 963,330 | 332,943 | 1,315,167 |
| 1960. | 1,934 | 5,537 | 1,319,187 | 973,958 | 368,090 | 1,362,596 |
| 1961. | 1,914 | 5,473 | 1,324,270 | 1,019,819 | 391,761 | 1,430,197 |

[^267]
## 39.-Summary Statistics of Co-operative Marketing and Purchasing Associations, by Province, Crop Years Ended July 31, 1960 and 1961

| Province and Year | Associations | Shareholders or Members | Sales of <br> Products | Sales of Merchandise | Total Business ${ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | \$'000 | \$'000 | \$'000 |
| Newfoundland....................... ${ }_{1961}^{1960}$ | $\begin{aligned} & 48 \\ & 47 \end{aligned}$ | $\begin{aligned} & 7,257 \\ & 8,763 \end{aligned}$ | $\stackrel{2}{50}$ | $\begin{aligned} & 5,075 \\ & 5,271 \end{aligned}$ | $\begin{aligned} & 5,107 \\ & 5,527 \end{aligned}$ |
| Prince Edward Island. . . . . . . . . . . . ${ }_{1961}^{1960}$ | 21 | $\begin{aligned} & 6,194 \\ & 6,454 \end{aligned}$ | 3,557 3,309 | 4,019 4,955 | $\begin{aligned} & 7,663 \\ & 8,350 \end{aligned}$ |
| Nova Scotia. . ............................. ${ }_{1961} 1960$ | $\begin{aligned} & 91 \\ & 88 \end{aligned}$ | $\begin{aligned} & 30,415 \\ & 26,539 \end{aligned}$ | 9,020 10,987 | $\begin{aligned} & 18,923 \\ & 19,409 \end{aligned}$ | $\begin{aligned} & 28,499 \\ & 30,900 \end{aligned}$ |
| New Brunswick. ..................... ${ }_{1961}^{1960}$ | $\begin{aligned} & 55 \\ & 54 \end{aligned}$ | $\begin{aligned} & 14,029 \\ & 14,173 \end{aligned}$ | $\begin{aligned} & 9,327 \\ & 9,384 \end{aligned}$ | $\begin{aligned} & 9,066 \\ & 9,581 \end{aligned}$ | $\begin{aligned} & 18,559 \\ & 19,169 \end{aligned}$ |
| Quebec..................................... ${ }_{1961} 1960$ | $\begin{aligned} & 601 \\ & 585 \end{aligned}$ | $\begin{aligned} & 94,567 \\ & 95,572 \end{aligned}$ | $\begin{aligned} & 115,714 \\ & 119,976 \end{aligned}$ | $\begin{aligned} & 89,760 \\ & 90,050 \end{aligned}$ | $\begin{aligned} & 207,998 \\ & 212,263 \end{aligned}$ |
| Ontario..................................... 1960 | $\begin{aligned} & 280 \\ & 280 \end{aligned}$ | $\begin{aligned} & 160,157 \\ & 159,084 \end{aligned}$ | $\begin{aligned} & 184,280 \\ & 173,046 \end{aligned}$ | $\begin{aligned} & 67,031 \\ & 74,053 \end{aligned}$ | $\begin{array}{r} 255,708 \\ 251,369 \end{array}$ |
| Manitoba.................................. ${ }_{1961} 1960$ | 107 110 | $\begin{aligned} & 137,847 \\ & 145,200 \end{aligned}$ | 88,452 105,173 | 26,349 29,120 | $\begin{aligned} & 117,191 \\ & 136,729 \end{aligned}$ |
| Saskatchewan............................. 1960 | $\begin{aligned} & 447 \\ & 436 \end{aligned}$ | $\begin{aligned} & 472,305 \\ & 482,457 \end{aligned}$ | $\begin{aligned} & 260,225 \\ & 289,762 \end{aligned}$ | $\begin{aligned} & 77,124 \\ & 82,750 \end{aligned}$ | $\begin{aligned} & 343,537 \\ & 378,657 \end{aligned}$ |
| Alberta................................... ${ }_{1961}^{1960}$ | $\begin{aligned} & 169 \\ & 183 \end{aligned}$ | $\begin{aligned} & 222,795 \\ & 211,205 \end{aligned}$ | $\begin{aligned} & 162,568 \\ & 169,008 \end{aligned}$ | $\begin{gathered} 30,526,883 \end{gathered}$ | $\begin{aligned} & 194,534 \\ & 205,213 \end{aligned}$ |
| British Columbia. . . . . . . . . . . . . . ${ }_{1961}^{1960}$ | $\begin{aligned} & 110 \\ & 104 \end{aligned}$ | $\begin{aligned} & 57,356 \\ & 58,448 \end{aligned}$ | $\begin{aligned} & 65,142 \\ & 59,342 \end{aligned}$ | $\begin{aligned} & 29,446 \\ & 28,469 \end{aligned}$ | $\begin{aligned} & 96,767 \\ & 88,557 \end{aligned}$ |
| Interprovincial............................ 1960 | $\begin{aligned} & 6 \\ & 6 \end{aligned}$ | $\begin{aligned} & 116,265 \\ & 116,375 \end{aligned}$ | $\begin{aligned} & 75,671 \\ & 79,782 \end{aligned}$ | $\begin{aligned} & 10,771 \\ & 13,220 \end{aligned}$ | $\begin{aligned} & 87,033 \\ & 93,463 \end{aligned}$ |
| Totals.......................... 1960 | $\begin{aligned} & \hline 1,935 \\ & 1,914 \end{aligned}$ | $\begin{aligned} & 1,319,187 \\ & 1,324,270 \end{aligned}$ | $\begin{array}{r} 973,958 \\ 1,019,819 \end{array}$ | $\begin{aligned} & 368,090 \\ & 391,761 \end{aligned}$ | $\begin{aligned} & 1,362,596 \\ & 1,430,197 \end{aligned}$ |

${ }^{1}$ Includes other revenue.

## 40.-Products Handled by Marketing and Purchasing Co-operatives, Crop Years Ended July 31, 1960 and 1961

| Product | 1960 |  | 1961 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Associations ${ }^{1}$ | Value of Sales | Associations ${ }^{1}$ | Value of Sales |
|  | No. | \$'000 | No. | \$'000 |
| Marketing. | 972 | 973,958 | 947 | 1,019,819 |
| Dairy products. | 407 | 220,598 | 394 | 229,664 |
| Fruit and vegetables. | 130 | 41,245 | 123 | 33,581 |
| Grain and seed...... | 107 | 377, 720 | 89 | 427,190 |
| Livestock. | 338 | 276,873 | 357 | 270,469 |
| Eggs and poultry. | 165 | 42,201 | 156 | 44,640 |
| Lumber and wood | 44 | 3,745 | 39 | 3,027 |
| Honey... | 8 | 2,968 | 9 15 | 3,468 1,460 |
| Wool.. | 14 | 1,562 | 15 | 1,460 |
| Fur............ | 5 3 | 1.740 1,859 | ${ }_{3}^{5}$ | 2,015 |
| Tobacco........ | ${ }_{3}^{3}$ | 1,859 3,635 | 3 |  |
| Miscellaneous.. | 63 | 1 812 | 73 | 3,857 |
| Merchandising. | 1,599 | 368,090 | 1,480 | 391,761 |
| Food products. | 835 | 102,419 | 810 | 106,800 |
| Clothing and home furnishings. | 539 | 12,229 | 507 | 12,424 |
| Hardware. . . . . . . . . . . . . . . | 707 | 25,760 | 708 | 26,206 70 |
| Petroleum products and auto accessories | ${ }_{927}^{635}$ | 64,064 117,633 | ${ }_{924}^{651}$ |  |
| Feed, fertilizer and spray material............... | ${ }_{266}^{927}$ | 117,633 12,724 | ${ }_{250}^{924}$ | 123,881 15,895 |
| Machinery and equipment......ial | 523 | 12,493 | 529 | 24,710 |
| Miscellaneous...................... | 571 | 8,768 | 557 | 11,645 |
| Totals................................... | . . | 1,342,048 | . . | 1,411,580 |

[^268]
## Section 5.-Interprovincial Freight Movements*

Statistics relating to interprovincial freight movements are difficult to collect since there are no controls over, or barriers to, such trade. Provincial freight traffic statistics are available for loadings and unloadings of goods carried by rail, water, pipeline and motor transport.

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 41, however, 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 42 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 43.

[^269]41.-Railway Revenue Freight Movement, by Province, ${ }^{\boldsymbol{1}} 1960$ and 1961

| Province | Loaded |  | Received from U.S.A. Rail Connections |  | Totals Carried ${ }^{2}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1960 | 1961 | 1960 | 1961 | 1960 | 1961 |
|  | tons | tons | tons | tons | tons | tons |
| Newioundland. | 1,617,786 | 1,554,291 | - | - | 1,617,786 | 1,554,291 |
| Prince Edward Island. . | 314,672 | 313,961 | - | - | 314,672 | 313,961 |
| Nova Scotia............ | 9,714,503 | 9,805,633 |  |  | 9,714,503 | 9,805,633 |
| New Brunswick........ | 4,005,173 | 3,678,785 | 447,628 | 222,837 | 4,452,801 | 3,901,622 |
| Quebec. | 35,129,593 | 31,679,422 | 2,885,926 | 2,782,987 | 38,015,519 | 34,462,409 |
| Ontario | 39,776,080 | 39,076,958 | 19,202,046 | 16,803,026 | 58,978,126 | 55,879,984 |
| Manitoba.. | 6,541,697 | 6,475,849 | 379,866 | 342,266 | 6,921,563 | 6,818,115 |
| Saskatchewan | 12,348,813 | 13,383,237 | 151,263 | 198,252 | 12,500,076 | 13,581,489 |
| Alberta | 12,121,465 | 12,546,848 | 188,841 | 177,237 | 12,310,306 | 12,724,085 |
| British Columbia. | 11,460,148 | 11,932,667 | 1,097,557 | 1,139,998 | 12,557,705 | 13,072,665 |
| Totals............ | 133,029,930 | 130,447,651 | 24,353,127 | 21,666,603 | 157,383,057 | 152,114,254 |
|  | Unloaded |  | Delivered to U.S.A. <br> Rail Connections |  | Totals Terminated ${ }^{2}$ |  |
|  | 1960 | 1961 | 1960 | 1961 | 1960 | 1961 |
|  | tons | tons | tons | tons | tons | tons |
| Newfoundland . ${ }^{\text {a }}$...... | 1,948,860 | 1,913,959 | - | - | 1,948,860 | 1,913,959 |
| Prince Edward Island.. | 538,344 | 439,716 | - | - | 538,344 | 439,716 |
| Nova Scotia............ | $8,959,358$ | 9,566,931 |  |  | $8,959,358$ | 9,566,931 |
| New Brunswick . . . . . . . | 4,342,251 | 4,098,802 | 458,202 | 380,941 | 4,800,453 | 4,479,743 |
| Ontario................. | 35,052,159 | 30,831,648 | 4,955,133 | 4,835,231 | 40,007,292 | 35,666,879 |
| Manitoba | 47,979,184 | 47,513,931 | 20,894,190 | 18,510,987 | 68,873,374 | 66,024,918 |
| Saskatchewan........... | ${ }_{3}^{6,597,231}$ | ${ }^{5}, 5891584$ | 1,281,966 | 1 188,444 | 7,442,578 | 6,772,436 |
| Alberta.................. | 6,576,575 | 6,620,837 | 1, 30,903 | 1,481,527 | 4,607, 478 |  |
| British Columbia | 12,222,108 | 14,008,215 | 1,981,567 | 1,794,593 | 14,203,675 | 15,802,808 |
| Totals | 127,911,443 | 124,569,615 | 30,349,166 | 27,829,631 | 158,260,609 | 152,399,246 |

[^270]42．－Tonnage of Cargo Loaded and Unloaded at Canadian Ports in Interprovincial Trade， by Province， 1960 and 1961

| Year and Province of Unloading | Province of Loading |  |  |  |  |  |  |  | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Nfld． | P．E．I． | N．S． | N．B． | Que． | Ont． | Man． | $\begin{aligned} & \text { B.C. } \\ & \text { and. } \end{aligned}$ |  |
| 1960 | tons | ton | tons | tons | tons | tons | tons | tons | tons |
| Nfld． | 966,007493 | 18，356 | 871,842264,840 | 51,753112,027 | 207,63414,607 | 21,6246,497 | 二 | 148 | 2，137，364 |
| P．E．I． |  |  |  |  |  |  |  |  |  |
| N．S． | 1，041，741 | 12，698 | 275，396 | 174，457 | $\begin{aligned} & 473,194 \\ & 280,214 \end{aligned}$ | $\begin{array}{r} 122,119 \\ 16,886 \end{array}$ | 二 | 1，483 | 2，107，088 |
| N．B． | ， 512 | 63，414 | 1，902，343 | 343，727 |  |  |  |  | 1，006，572 |
| Que． | 191，750 |  |  |  | $\begin{array}{r} 280,214 \\ 5,73,438 \end{array}$ | $\begin{array}{r} 16,886 \\ 4,100,861 \end{array}$ | 4，614 | 37,0554,629 | $\begin{aligned} & 12,376,202 \\ & 12,320,270 \end{aligned}$ |
| Ont．．．． | 2，462 | － | 15，769 | － | 2，048，595 | 10，248，815 |  |  |  |
| Man．．． |  |  |  |  |  |  | 13 | 121 | ${ }^{218}$ |
| B．C．and | 692 | － | 4，387 | － | 35，561 | 571 | － | 10，389，746 | 10，430，957 |
| Totals，1960．．． | 2，203，657 | 139，455 | 3，822，371 | 852，137 | 8，792，327 | 14，523，373 | 4，627 | 10，439，188 | 40，777，135 |
| 1961 |  |  |  |  |  |  |  |  |  |
| Nfld．． | 837，113 | 30，872 | 923,591324,883 | 100,598144,499 | 236,30218,144 | 24,2226,651 | 二 | 1，193 | $2,153,891$494,240 |
| P．E．I． |  |  |  |  |  |  |  |  |  |
| N．S． | 628，770 | $\begin{aligned} & 15,270 \\ & 73,403 \end{aligned}$ | 273,710471,237 | 343,454154,931 | 419,489251,763 | $\begin{array}{r}158,653 \\ 15,683 \\ \hline\end{array}$ | － | 1544,497 | $1,839,500$976,144 |
| N．B． | 4，630 |  |  |  |  |  |  |  |  |
| Que．． | 210，582 | 39，280 | $\begin{array}{r} 2,199,595 \\ 5,199 \end{array}$ | 379，802 | $\begin{aligned} & 6,100,986 \\ & 2,318,487 \end{aligned}$ | $\begin{array}{r} 6,370,254 \\ 11,582,744 \end{array}$ | 10，108 | 17，194 | 15，327，801 |
| Ont． | ${ }^{1,229}$ | － |  |  |  |  | $\begin{array}{r} 5,635 \\ 750 \end{array}$ | 1,09917 |  |
| Man． |  |  |  | － | $\begin{array}{r} 2,318,487 \\ 129 \end{array}$ | $\stackrel{11,582,744}{-}$ |  |  | $18,786$ |
| $\begin{aligned} & \text { B.C. and } \\ & \text { N.W.T. } \end{aligned}$ |  | － | 6，115 | － | 44，329 | 730 | 2，507 | 11，638，003 | 11，691，763 |
| Totals， 1961 | 1，682，466 | 158，825 | 4，204，330 | 1，123，284 | 9，389，629 | 18，158，937 | 19，000 | 11，680，047 | 46，416，518 |

43．－Interprovincial and International Traffic by Canadian Registered Trucks， 1960 and 1961

| $\qquad$ | Atlantic Prov－ inces | Que． | Ont． | Man． | Sask． | Alta． | B．C． | $\begin{gathered} \text { Yukon } \\ \text { and } \\ \text { N.W.T. } \end{gathered}$ | United States | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | ＇000 | ＇000 tons | ＇000 tons | ＇000 tons | $\begin{aligned} & \text { '000 } \\ & \text { tons } \end{aligned}$ | $\begin{aligned} & \text { '000 } \\ & \text { tons } \end{aligned}$ | ＇000 tons | $\begin{aligned} & , 000 \\ & \text { tons } \end{aligned}$ | $\begin{aligned} & \text { '000 } \\ & \text { tons } \end{aligned}$ | $\begin{aligned} & \text { '000 } \\ & \text { tons } \end{aligned}$ |
| 1960 |  |  |  |  |  |  |  |  |  |  |
| From－ <br> Atlantic Provinces．．．．． <br> Quebec． <br> Ontario <br> Manitoba． <br> Saskatchewan <br> Alberta <br> British Columbia． <br> Yukon and Northwest <br> Territories． <br> United States |  |  |  |  |  |  |  |  |  |  |
|  | 81 | ${ }^{32}$ |  |  | － | 65 | － | 二 | ${ }_{262}^{134}$ | 171 1,508 |
|  |  | 941 | 1，091 | 119 | 21 | 117 | 17 | － | 444 | 1，668 |
|  | － | 9 | 164 | － | 131 | 40 | 4 | － | 15 | 363 |
|  | － | 1 | 4 | 171 | － | 51 | 1 | － | 7 | 235 |
|  | － | 63 | 82 | 29 | 93 | $-16$ | 215 | 55 | 12 | 549 440 |
|  | － | 1 | 12 | 5 | 4 | 166 | － | 47 | 205 | 440 |
|  |  | － |  |  |  |  |  | － | － | 19 |
|  | 38 | 268 | 437 | 32 | 7 | 26 | 186 | － | － | 994 |
| Totals，1960．．．．． | 128 | 1，315 | 1，795 | 365 | 256 | 466 | 441 | 102 | 1，079 | 5，947 |
| 1961 |  |  |  |  |  |  |  |  |  |  |
| From－ |  |  |  |  |  |  |  |  |  | 220 |
| Atlantic Provinces．．．．． | 74 | 59 |  | 6 | 1 |  |  | － | ${ }_{224}^{157}$ | 1，438 |
| Quebec．．．．．．．．．．．．．．．．． | 74 13 | － | 1，070 | 137 | 41 | 152 | 26 | 二 | 451 | 1，874 |
| Manitoba | 13 | － 5 | 202 | － | 186 | 76 | 11 | － | 13 | 493 |
| Saskatchewan． | － | 3 | 11 | 333 |  | 62 |  |  | ${ }^{6}$ | ${ }_{726} 415$ |
| Alberta． | － | 64 | 108 | 60 | 138 | － | 283 | 54 64 | 166 | 518 |
| British Columbia．． |  | － | 20 | 12 | 42 | 214 | － | 64 | 166 |  |
| Yukon and Northwest Territories． |  | － | － | － | － | 9 | 13 | － | － | 22 1,365 |
| United States．．．．．．．．．． | 34 | 315 | 584 | 27 | 1 | 23 | 381 | － | － | 1，365 |
| Totals，1961．．．．．． | 121 | 1，500 | 1，999 | 575 | 409 | 597 | 716 | 118 | 1，036 | 7，071 |

## 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 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.*-The Board of Grain Commissioners was established in 1912 under the authority of the Canada Grain Act, 1912 (RSC 1952, cc. 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 (see p. 862), 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 Cansda 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 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.

[^271]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 1 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". The Board was at first a voluntary Board, that is, farmers had the option of marketing their wheat through it or through the private grain trade. In 1943, under the War Measures Act, the Board was made a compulsory Board, and all wheat going into commercial channels was required to be marketed through it. At the end of the War, the Transitional Powers Act continued the Board as the sole marketing agency for wheat until 1947 when the Canadian Wheat Board Act was amended. The major wartime powers of the Board were coatinued in the 1947 Act. It is under provisions of this 1947 legislation (RSC 1952, c. 44 and amendments) that the Board is operating today.

The Canadian Wheat Board accomplishes its objective of orderly marketing of grain 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 his 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 inadequate 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 regulation, 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 Coast-

[^272]is 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 between the railways and the Government of Canada.

The fourth major step-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 Lakehead 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 Lakehead 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.

Western 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 part payment 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*

With the growing complexity of agricultural marketing caused by the fact that the producer is more and more becoming a specialist and produces more for marketing off the farm than for his own needs, a substantial and continuing change in the approach to marketing problems is evident.

With the exception of tobacco, little or no attempt at production control has been introduced in Canada, although in some countries this also forms part of a broad program

[^273]of market control. The methods of control might be summarized as follows, although some of those mentioned may be combined in certain operations: (1) producers may organize co-operative marketing agencies; (2) producers may establish compulsory marketing boards to bargain with groups buying the product for processing or further sale; (3) producers may establish compulsory marketing boards to direct the flow of product and bargain on price; (4) producers may request the Federal Government to establish a government marketing board; and /or (5) producers may request intervention in the pricing system through an offer by the Government either to assist in financing the orderly marketing of the product or to support the price of the product in the marketplace.

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.

There exists in Canada today considerable legislation at the federal, provincial and municipal levels which gives government agencies and farmers the power to take measures for controlling the marketing of farm products. Legislation relating to grain marketing is dealt with in Subsection 1, pp. 877-879, and an attempt is made here to cover in a general way some of the other types of legislation, with particular reference to the Agricultural Products Co-operative Marketing Act and the Agricultural Products Marketing Act. The Agricultural Stabilization Act, which provides price support for certain key products, is discussed in the Agriculture Chapter, pp. 422-423.

General Marketing Controls.-At the municipal level, many cities and towns have controls with respect to the sale of foods in certain areas or with respect to health standards. For example, most municipalities have some form of health regulation concerning milk being sold within their boundaries. This is often extended to licensing for the purpose of assuring sanitary standards on the farms where the milk originates. Similarly, zoning bylaws may not only control the areas where commercial merchandising generally can take place, but also state that public markets where fruit and vegetables and other goods are sold may operate only under fairly strict supervision of the municipality.

With respect to provincial government controls, most of the provinces enacted milk control legislation before 1940. Most 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, this minimum price is based on formulas. 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 into 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.

Thus, fluid milk controls are not only widespread but also numerous. They are generally considered to be administered in the public interest as well as in the interest of those who have regular opportunities to appear before the boards in connection with requests for price changes.

Federally, the Food and Drug Directorate of the Department of National Health and Welfare has wide control over the content of foods sold. The Department of Agriculture establishes grades or quality standards for various foods and exercises some control over size and type of packages and containers used in food preparation. The Weights and Measures Division of the Department of Trade and Commerce also exercises controls in its sphere.

The Agricultural Products Co-operative Marketing Act.-In the late 1930's, 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 Agricultural Products Co-operative Marketing Act, which covers the marketing of all agricultural products except wheat, has been used to a greater or lesser degree from time to time during the intervening years.

The purpose of this Act is to aid farmers in pooling the returns from sale of their products by guaranteeing initial payments and thus assisting in the orderly marketing of the product. The Government will 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 to be 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 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. The payment to the producer is to be made through the sales agency on a graded basis at the time of delivery of the product.

Agreements under this Act have been made with respect to the marketing of maple products, honey, onions, potatoes, cheddar cheese, apples, peaches, apricots, cherries, oats, barley, flax, rye, corn, tobacco, fox and mink pelts, and the following seeds: alfalfa, crested wheat grass, brome grass, slender wheat grass, western rye grass, timothy, red clover, alsike clover, sweet clover, creeping red fescue, meadow fescue, and peas. Thus far the Government of Canada has suffered losses under this Act only with respect to fox pelts and potatoes. This experience indicates that any service to agriculture rendered by this Act has been at relatively small expense to the taxpayers of Canada except for minor administrative expenses, most of which have been taken care of as part of the day-to-day administration of the Department of Agriculture.

The Agricultural Products Marketing Act.-Following the withdrawal of wartime powers of the Federal Government, the Agricultural Products Marketing Act of 1949 was enacted to provide delegation for like powers to those established for marketing boards within a province for the purposes of interprovincial and export trade. A Supreme Court judgment in January 1952 cleared the validity of the Agricultural Products Marketing Act but left some doubt with respect to how licences, levies or other charges could be made by marketing boards beyond the extent of immediate administrative expenses without some approval by the Federal Government in its constitutional field of indirect taxation.

In April 1957, following a further Supreme Court judgment in respect to Ontario legislation, an amendment to the Federal Agricultural Products Marketing Act vested in the Governor in Council the right to authorize local boards to "fix, impose and collect levies or charges from persons engaged in the production or marketing of the whole or any part of any agricultural product and for such purpose to classify such persons into groups and fix the levies or charges payable by the members of the different groups in different amounts, to use such levies or charges for the purposes of such board or agency, including the creation of reserves, and the payment of expenses and losses resulting from the sale or disposal of any such agricultural product, and the equalization or adjustment among producers of any agricultural product of moneys realized from the sale thereof during such period or periods of time as the board or agency may determine".

There are at present 76 such marketing boards organized in Canada, 60 p.c. of which are in the Province of Quebec and 22 p.c. in Ontario; all other provinces with the exception of Newfoundland have one or more boards.

The annual statistical report prepared by the Economics Division of the Department of Agriculture in relation to these boards indicates that over one sixth of the farm cash income in Canada in 1961 was received from sales made under the control of provincial marketing board plans, including the following commodities: seed corn, potatoes, other vegetables, sugar beets, tobacco, hogs, certain dairy products, fruits, wool, honey, white beans, maple products, pulpwood, wheat and soybeans. As at May 31, 1963, 38 of these provincial boards had received an extension of powers for purposes of interprovincial and export trade from the Federal Government. Five boards had received authority with regard to eight commodities to collect levies in excess of administrative expenses.

The Agricultural Products Marketing Act does not give the local or provincial marketing board any greater control over agencies outside the province than is possible through the control of the commodity by the board and whatever contractual arrangements it may make with such agencies outside the province. It does make it possible, however, for marketing boards to give groups within a province complete marketing control over any commodity produced in that province, or any area of that province which may be defined.

## 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 which 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 lessen "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. While 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 likely to lessen competition unduly in respect of

[^274]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 Canadian competitors or on domestic consumers.

Sects. 2 and 33 make it an offence to participate in a merger which 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.

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 Act provides for a Director who is responsible for investigating combines and other restrictive practices, and a Commission (the Restrictive Trade Practices Commission) which is responsible for appraising the evidence submitted to it by the Director and the parties under investigation, and for making a report to the Minister. 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 hearing, the Commission prepares and submits a report to the Minister, ordinarily required to be published within thirty days.

The Act also provides for general inquiries into restraints of trade which, while not forbidden or punishable, may affect the public interest. It further provides in Sect. 31
that 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. By virtue of the 1960 amendments, 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. The amendment conferring jurisdiction on the Exchequer Court came into force on Dec. 1, 1960.

In the years 1957-62 the following reports of inquiries under the legislation have been published:-
(1) The Sugar Industry in Western Canada and a Proposed Merger of Sugar Companies.
(2) Manufacture, Distribution and Sale of Metal Culverts and Related Products.
(3) Purchase of Pulpwood in Certain Districts in Eastern Canada.
(4) Manufacture, Distribution and Sale of Yeast.
(5) Production, Distribution and Sale of Zinc Oxide.
(6) Wholesale Trade in Cigarettes and Confectionery in the Edmonton District.
(7) Study of Certain Discriminatory Pricing Practices in the Grocery Trade.
(8) Manufacture, Distribution and Sale of Ammunition in Canada.
(9) Distribution and Sale of Electrical Construction Materials and Equipment in Ontario.
(10) Sale and Distribution of Surgical Rubber Gloves and Certain Other Surgical Supplies.
(11) The Sugar Industry in Eastern Canada.
(12) Alleged Attempts at Resale Price Maintenance in the Distribution and Sale of Gasoline in the Toronto Area.
(13) Manufacture, Distribution and Sale of Specialty Bags and Related Products.
(14) Automobile Insurance in Canada.
(15) Distribution and Sale of Coal in Sault Ste. Marie, Ontario.
(16) Production and Supply of Newspapers in the City of Vancouver and Elsewhere in the Province of British Columbia.
(17) Manufacture, Distribution and Sale of Transparent Packaging Products and Related Products.
(18) Manufacture, Distribution, Supply and Sale of Belts.
(19) Distribution and Sale of Gasoline in the Toronto Area (Alleged Price DiscriminationSupertest Petroleum Corporation, Limited).
(20) Distribution and Sale of Gasoline in the Toronto Area (Alleged Price DiscriminationThe British American Oil Company Limited).
(21) Distribution and Sale of Gasoline in the Toronto Area (Alleged Price DiscriminationTexaco Canada Limited).
(22) Alleged Attempts at Resale Price Maintenance in the Distribution and Sale of Cameras and Related Products (Arrow Photographic Equipment Limited).
(23) Meat Packing Industry and the Acquisition of Wilsil Limited and Calgary Packers Limited by Canada Packers Limited.
(24) Alleged Attempts at Resale Price Maintenance in the Distribution and Sale of Cameras and Related Products (Garlick Films Limited).
(25) Distribution and Sale of Automotive Oils, Greases, Anti-Freeze, Additives, Tires, Batteries, Accessories and Related Products.
(26) Manufacture, Distribution and Sale of Paperboard Shipping Containers and Related Products.
(27) The Acquisition of the Common Shares of Hendershot Paper Products Limited by Canadian International Paper Company.
(28) The Acquisition by Bathurst Power \& Paper Company Limited of Wilson Boxes, Limited.
(29) Manufacture, Distribution and Sale of Evaporated Milk and Related Products.
(30) Distribution and Sale of Electric Appliances, Electric Shavers and Accessory Products (Sunbeam Corporation (Canada) Limited).
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 Justice, 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, 1962, provincial government liquor control authorities operated 950 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, 1961 and 1962

Note.-Figures include revenue collected directly by the provincial and territorial governments as well as revenue of the liquor authorities, but exclude revenue resulting from a general retail sales tax on alcoholic beverages levied by eight provinces.


[^275]Specified revenue of the Government of Canada from alcoholic beverages comprising excise duties, excise taxes, customs duties and certain fees and licences in that connection are shown in Table 2.

# 2.-Specified Revenue of the Federal Government from Alcoholic Beverages, Years Ended Mar. 31, 1958-62 

Note.-Figures exclude revenue from the general sales tax which is not available by commodities.

| Nature of Levy | 1958 | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| On Spirits . . . . . | 120,279 | 125,901 | 132,240 | 139,823 | 143,616 |
| Excise duty | 83,653 | 96,551 | 102,354 | 108,502 | 113,689 |
| Licences....... | 7 36,619 | 7 29,343 | -2979 | - ${ }^{8}$ | ${ }^{8}$ |
| On Beer. |  |  |  |  |  |
| Excise duty. | 88,226 | 83,058 | 90,873 | 91,165 | 93,257 |
| Beer licences.. |  |  | 90,704 | 90,971 | 93, ${ }^{\text {a }}$ |
| Import duty. | 190 | 182 | 166 | 191 | 203 |
| On Wine. | 4,170 | 4,699 | 4,686 | 4,920 | 5,223 |
| Excise taxes. | 2,744 | 3,140 | 3,026 | 3,224 | 3,350 |
| Import duty. | 1,426 | 1,469 | 1,660 | 1,696 | 1,873 |
| Totals ${ }^{1}$. | 212,868 | 213,753 | 227,799 | 235,908 | 242,096 |

${ }^{1}$ Drawbacks and refunds of duties and taxes have not_been deducted.
Value of Sales of Alcoholic Beverages.-The figures in Table 3 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, 1960-62

| Province or Territory | Spirits |  |  | Wines |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1960 | 1961 | 1962 | 1960 | 1961 | 1962 |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Newfoundland. | 5,602 | 5,662 | 5,911 | 541 | 574 | 571 |
| Prince Edward Island. | 2,470 | 2,609 | 2,763 | 185 | 234 | 266 |
| Nova Scotia. | 15,362 | 15,899 | 16,923 | 2,452 | 2,564 | 2,771 |
| New Brunswick | 11,120 | 11,738 | 12,379 | 2,062 | 2,154 | 2,380 |
| Quebec.. | 86,873 | 87,635 | 95,406 | 14,972 | 15,737 | 17,642 |
| Ontario. | 155,557 | 163,454 | 170,302 | 19,356 | 20,669 | 21,909 |
| Manitoba. | 21,240 | 21,885 | 22,500 | 2,614 | 2,716 | 2,832 |
| Saskatchewan | 18,278 | 18,412 | 18,154 | 2,549 | 2,851 | 2,915 |
| Alberta. | 33,444 | 35,034 | 37,011 | 3,135 | 3,639 | 3,911 |
| British Columbia | 51,227 | 52,359 | 53,890 | 4,971 | 5,520 | 5,951 |
| Yukon Territory. | 968 | 985 | 1,020 | 96 | 111 | 123 |
| Northwest Territories | 788 | 790 | 792 | 61 | 74 | 84 |
| Canada............... | 402,929 | 416,462 | 437,051 | 52,994 | 56,843 | 61,355 |
|  | Beer |  |  | Totals |  |  |
|  | 1960 | 1961 | 1962 | 1960 | 1961 | 1962 |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Newfoundland. | 10,287 | 10,700 | 11,547 | 16,430 | 16,936 | 18,029 |
| Prince Edward Issland. | 1,298 | 1,467 | 1,615 | 3,953 | 4,310 | 4,644 |
| Nova Scotia. | 14,811 | 15,551 | 16,248 | 32,625 | 34,014 | 35,942 |
| New Brunswick | 105,448 | -106,052 | 107, 936 | 207,293 | 209,424 | 220,984 |
| Ontario.. | 175,298 | 176, 744 | 179,388 | 350, 211 | 360,867 | 371,599 |
| Manitoba | 26,691 | 28,655 | 30,065 | 50,545 | 53,256 | 55,397 |
| Saskatchewan | 22,831 | 25, 242 | 24,177 | 43,658 | 46,505 | 45, 246 |
| Alberta. | 32,763 | 33,610 | 34,877 | 69,342 | 72,283 | 75,799 |
| British Columbia. | 40,112 | 41,477 | 43,172 | 96,310 | 99,356 | 103,013 |
| Yukon Territory..... | 1,109 | 1,241 | 1,146 | 2,173 1,505 | 2,337 1,600 | 2,289 1,765 |
| Northwest Territories. | 656 | 736 | 889 | 1,505 | 1,600 |  |
| Canada. | 441,019 | 451,829 | 462,187 | 896,942 | 925,134 | 960,593 |

## Section 4.-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 Trade and Commerce, consists of a Chairman, a Vice-Chairman and three other members.

The Act was given Royal Assent on July 18, 1959, the members were appointed by Order in Council on Aug. 10, 1959 and the Act came into force by proclamation on Nov. 2, 1959. The Act supersedes the Pipe Lines Act, formerly administered by the Board of Transport Commissioners for Canada, and the Exportation of Power and Fluids and Importation of Gas Act, formerly administered by the Standards Branch of the Department of Trade and Commerce. Provision was made in the new Act for the continuation or re-definition of authorizations issued under the two previous Acts, and in 1960 the Act was amended to extend to Dec. 31, 1961 the duration of licences to export power issued under the Exportation of Power and Fluids and Importation of Gas Act unless earlier replaced by a licence issued under the National Energy Board Act.

While the Board continued during 1962 (its third year of operations) to give detailed attention to the implementation of the National Oil Policy (announced by the Minister of Trade and Commerce on Feb. 1, 1961), it expanded its activities in each of the other areas of responsibility assigned to it by statute and Joutlined ${ }^{\top}$ below.

The National Oil Policy sought the co-operation of the oil industry in achieving a series of target levels of Canadian production of oil and natural gas liquids to attain an average daily output of $640,000 \mathrm{bbl}$. in 1961 and $800,000 \mathrm{bbl}$. per day in 1963. These targets were to be achieved by the increased use of Canadian oil in domestic markets west of the Ottawa Valley and by some expansion of export sales, largely in existing markets that could be reached through established pipelines. Under the policy, importers of crude oil and petroleum products were required to report their imports to the National Energy Board which, in turn, was required to evaluate the contribution of individual companies to the production targets and to report periodically on the progress and development of the program. Although no specific target was established for the year 1962, production of crude petroleum and natural gas liquids by the end of that year reached approximately $732,000 \mathrm{bbl}$. per day, an increase of over 12 p.c. for 1962 and one comparing favourably with the rate of growth during 1961. In 1962 as compared with 1961, a significantly greater proportion of the production gain was attributable to growth in the domestic markets. Moreover, with the exception of minor volumes for special purposes, imports of crude oil into Ontario in 1962 were virtually eliminated, while imports and transfers of products of foreign origin into Canada west of the Ottawa Valley were further reduced. As a result of the National Oil Policy, the rate of growth of imports of crude petroleum into

[^276]Canada, east of the Ottawa Valley, declined and these imports became more closely related to increased demand for petroleum products in the Province of Quebec and the Maritime Provinces.

During 1962, the Board held eleven public hearings and, with the approval of the Governor in Council, issued thereafter five certificates respecting facilities of three gas pipelines, one oil pipeline and an international power line, as well as six export licences respecting electric power and energy (four) and natural gas (two).

The projects certified covered two applications of Trans-Canada Pipe Lines Limited in respect of certain additional compressor stations and facilities and other works at thirteen points in Saskatchewan, Manitoba and Ontario to be connected with its existing pipeline of the Northern Ontario Pipe Line Crown Corporation, and the conversion of certain compressor stations on the prairies to enable the use of propane as an alternative to natural gas; an application of Petroleum Transmission Company to construct a 577 -mile $6 \frac{5}{8}$-inch diameter pipeline extending from Alberta to Winnipeg for the transmission of propane and butanes; an application of Interprovincial Pipe Line Co. to construct 41 miles of 34 -inch diameter oil pipe to loop four sections of existing line in Manitoba; and an application of the Consolidated Mining and Smelting Company of Canada Limited to construct a 14.2 -mile international power line to connect its Waneta station on the Pend D'Oreille River with the Bonneville Power Administration near Nelway, B.C.

The exports licensed by the Board included the following applicants in respect of electric power and energy: B.C. Power Commission, Southern Canada Power Company Limited, Consolidated Mining and Smelting Co., and Ontario-Minnesota Pulp and Paper Company Limited; and the following in respect of natural gas (butanes by pipeline): Shell Oil Company of Canada Limited and Texaco Exploration Company.

In addition to issuing the above certificates and licences, the Board issued eighteen exemption orders for gas and oil pipeline facilities under Sect. 49 of the Act which empowers it to approve the construction of pipelines or extensions not exceeding 25 miles and of miscellaneous facilities by exercising its discretion to exempt such construction from the provisions relating to certificate proceedings. Four of these exemption orders concerned the construction of 57 miles of 34 -inch diameter gas pipeline by Trans-Canada Pipe Lines Limited to parallel its existing system at four prairie vicinities, while three others related to construction by Westcoast Transmission Company Limited of 27 miles of various diameters of gas pipeline and of an addition to a compressor station. Four of the nine exemption orders governing oil pipelines authorized construction by the Interprovincial Pipe Line Company of additions to pump station facilities and to its pipeline at numerous points throughout its system, while another four provided for construction by Westspur Pipe Line Company of some 8,880 feet of pipeline and of additional works at Midale and other points in southern Saskatchewan.

During the year, the Board concerned itself also with requirements of the National Energy Board Act respecting the protection of the public safety, such as those providing for control of crossings by pipelines of various other utilities and vice versa, and those providing that no pipeline shall be opened for the transmission of hydrocarbons without leave of the Board. Under the former, 295 crossing orders were processed. Under the latter, 28 applications were reviewed as to adequacy of pipeline testing and safety devices. Seventy other orders were issued on applications received under other sections of the Act.

Pursuant to its obligations (under Part II of the Act) to review matters relating to energy, and to its responsibilities (under Part VI of the Act) relating to exports of gas and electricity, the Board continued the preparation of detailed supply and demand forecasts and the development of its statistical records. Liaison was established with the Dominion Bureau of Statistics with a view to assisting in the improvement of energy statistics.

The Board participated in arrangements for studies of a national power grid, and in feasibility studies of certain large potential hydro-electric developments. It is currently participating in the work of Canadian Standards Association Committees to establish a Canadian code for the design, construction and operation of oil and gas pipelines, and for aluminum pressure piping.

Activities were intensified in the emergency planning field in conjunction with the Emergency Supply Planning Branch of the Department of Defence Production. The Board also strengthened its liaison with such international organizations as the Organization for Economic Co-operation and Development.

## Section 5.-Miscellaneous Aids or Controls

Trade Standards.-The Standards Branch of the Department of Trade and Commerce consolidates under one Director the administration of the Electricity Inspection Act, the Gas Inspection Act, the Precious Metals Marking Act, the Weights and Measures Act, and the National Trade Mark and True Labelling 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 exemplified in the National Trade Mark Garment Sizing Regulations which were passed on Mar. 16, 1961. In addition, where manufacturers descriptively label 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. The Act 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 1962 more than 725,000 prepackaged articles were checked for weight or measure. The number of inspections of devices made was 494,326 compared with 500,737 in 1961. The more important inspections comprised the following: weighing machines including scales of all kinds, 237,950; measuring machines for liquids, 122,306; weights, 128,647; and other measures, 5,423 . Total expenditure was $\$ 1,235,233$ in 1962 compared with $\$ 1,215,510$ in 1961 and total revenue was $\$ 1,031,209$ compared with $\$ 1,081,603$.

Electricity and Gas Inspection.-Responsibilities of the Standards Branch under the Electricity 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 21 districts for administration of the two Acts and staff numbers 195. During the year ended Mar. 31, 1962, 1,223,552 electricity and gas meters were tested as compared with $1,071,835$ in the preceding year. Revenue derived from the testing amounted to $\$ 968,979$ and expenditure to $\$ 1,074,548$.
4.-Electricity and Gas Meter Registrations, 1952-61

| Year | ElectricityMeters | Gas Meters |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Manufactured Gas | $\begin{gathered} \text { Natural } \\ \text { Gas } \end{gathered}$ | Petroleum Gas | Total |
|  | No. | No. | No. | No. | No. |
| 1952. | 3,779,868 | 599,140 | 277,248 | 1,270 | 877,6631 |
| 1953. | 3,968,020 | 593,698 | 298,166 | 429 | 892,2971 |
| 1954. | 4,175,534 | 420,432 | 486,768 | 532 | 907,7361 |
| 1955. | 4,380,889 | 416,338 | 507,875 | 3,147 | 927,3641 |
| 1956. | 4,571,391 | 350,558 | 599,633 | 4,843 | 955,034 |
| 1957. | 4,748,636 | 67,726 | 943,783 | 4,570 | 1,016,079 |
| 1958. | 4,941,667 | 35,967 | 1,069,892 | 5,101 | 1,110,960 |
| 1959. | 5,157,495 | 32,799 | 1,162,678 | 4,266 | 1,199,743 |
| 1960 | 5,317,704 | 25,041 | 1,232,215 | 12,109 | 1,269, 365 |
| 1961. | 5,491,388 | 18,841 | 1,314,057 | 14,772 | 1,347,670 |

${ }^{1}$ Includes five acetylene meters in 1952 and four in 1953, 1954 and 1955.
Patents.*-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.
5.-Patents Applied for, Granted, etc., Years Ended Mar. 31, 1958-62

| Item |  | 1958 | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Applications for patents. | No. | 22,257 | 22,912 | 24,292 | 24,529 | 25,447 |
| Patents granted..... |  | 16,261 | 18,293 | 22,021 | 22,014 | 21,659 |
| Granted to Canadians | " | 1,488 | 1,515 | 1,903 | 2,036 | 1,844 |
| Caveats granted. |  | 242 | 296 | 291 | 281 | 226 |
| Assignments. | " | 19,744 | 20, 208 | 22,015 | 22,587 | 24,161 |
| Fees received, net. | \$ | 1,438,218 | 1,559,705 | 1,793,685 | 1,806, 279 | 1,858,965 |

The number of Canadian patents granted increased fairly steadily each year from 4,522 at the beginning of the century to 21,659 in the year ended Mar 31, 1962. Roughly, 68 p.c. of the patents granted resulted from inventions made by residents of the United States, 6 p.c. by residents of Britain and other Commonwealth countries and 6 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

[^277]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 now 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.

## 6.-Copyrights, Industrial Designs and Timber Marks Registered, Years Ended Mar. 31, 1958-62

| Item | 1958 | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Copyrights registered. . . . . . . . . . . . . . . . . No. | 5,052 | 5,331 | 5,513 | 6,381 | 6,479 |
| Industrial designs registered................ "/ | 665 | 684 | 790 | 795 | 684 |
| Timber marks registered.................... | 3 | 7 |  |  | 1 |
| Assignments registered..................... " | 735 | 640 | 1,037 | 1,017 | 1,213 |
| Fees received, net......................... | 21,986 | 23,440 | 24,614 | 27,446 | 28,634 |

Trade Marks.*-The Trade Marks Office, a Branch of the Department of the Secretary of State, 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, 1954, 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 advertisment 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, 1958-62

| Item | 1958 | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Trade marks registered.................. No. | 3,769 | 3,992 | 3,818 | 4,524 | 4,438 |
| Trade mark registrations assigned........... " | 3,078 | 2,642 | 2,541 | 3,115 | 3,335 |
| Trade mark registrations renewed.......... " | 3,434 | 1,117 | 1,481 | 1,748 | 1,961 |
| Certified copies prepared. | 1,069 | ,906 | 1,368 | 1,407 | 1,412 |
| Fees received, net........................ \$ | 273,558 | 268,437 | 302,164 | 305,036 | 336,212 |

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,

[^278]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. During the year a change was made so that Eastern Canadian coals were made competitive with imported residual oils in the Maritimes and the Province of Quebec. This assistance is authorized from year to year by Parliamentary vote and payments are administered in accordance with regulations established by Orders in Council.

## 8.-Expenditure for Coal Subventions, by Province, 1958-62

Nore.-Tonnages 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 | 1958 | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Nova Scotia............................. ton | 2,370,131 | 2,154,034 | 2,048,073 | 2,323,684 | 2,191,938 |
| \$ | 8,352,014 | 11, 822,776 | 12,950,733 | 14,208,2071 | 14,589,764 |
| New Brunswick........................... ton | 120,963 | 137,613 | 173,063 | 146,201 | 114,186 |
| \$ | 193,996 | 253,557 | 324,922 | 227,129 | 221, 984 |
| Saskatchewan............................. ton | 297,892 | 111,006 | 79,377 | 104,807 | 82,511 |
| \$ | 268,479 | 96,751 | 64,248 | 83,161 | 62,359 |
|  | 216,825 | 130,956 | 51,884 | 38,171 | 57,539 |
| Alderta | 666, 452 | 401, 820 | 151,685 | 96,680 | 150,595 |
| British Columbia and Alberta export....... ton | 21,533 | 192,857 | -633,913 | 719,840 | -634,855 |
| $\$$ | 68,982 | 845,895 | 2,852,608 | 3,239,279 | 2,408,653 |
| Totals........................... . ton | 3,027,344 | 2,726,466 | 2,986,310 | 3,332, 03 | 3,081,029 |
| \$ | 9,549,923 | 13,420,799 | 16,344,196 | 17,854,4561 | 17,433,355 |

[^279]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 bituminous 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 1958-62 were as follows:-


## PART III.-BANKRUPTCIES AND COMMERCIAL 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 heading 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. 893). The figures of assets and liabilities are estimates made by the debtor and, because they are not made uniformly, should be accepted with reservations.

Administration of Bankrupt Estates.*-Federal insolvency legislation comprises the Bankruptcy Act 1949 (RSC 1952, c. 14), the Farmers' Creditors Arrangement Act 1943 (RSC 1952, c. 111). the Companies' Creditors Arrangement Act and, to some extent, the Winding-Up Act. The two Arrangement Acts are designed to avert failure and neither series of statistics therefore includes proposals or arrangements under these Acts. When such proposals or arrangements are rejected by the creditors or fail in their purpose, the proceedings may then come under the Bankruptcy Act, the bankruptcy provisions of the Farmers Creditors Arrangement Act or, in certain circumstances, the Winding-Up Act. There are no provisions in the Companies' Creditors Arrangement Act for the liquidation or winding-up of insolvent companies.

## 1.-Assets, Liabilities, Assets Realized and Cost of Administration under the Bankruptcy Act, by Province, 1961

| Province | Bankruptcies tnder General Provisions of the Act ${ }^{1}$ |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Estates Closed | Assets as Estimated by Debtors | Liabilities as Estimated by Debtors | Total <br> Realization | CostofAdminis- <br> tration | Paid to Creditors |
|  | No. | \$ | \$ | \$ | \$ | \$ |
| Vewioundland. | 6 | 45,148 | 293,529 | 24,172 | 13,778 | 10,394 |
| Tova Scotia. | 15 | 282,608 | 521,816 | 127, 806 | 28,173 | 99,633 |
| New Brunswick | 7 | 144,511 | 210,263 | 24,577 | 5,796 | 18,781 |
| Prince Edward Island | 1 | 1,425 | 10,344 | 900 | 171 | 729 |
| Quebec......... | 1,995 | 22,053,035 | 45, 894, 399 | 8,105,639 | 2,438, 899 | 5,666,740 |
| Ontario. | 759 | 17,003,012 | 29,497,315 | 4,356,235 | 1,627, 575 | 2, 728,660 |
| Manitoba.. | 33 | 966,656 | 2,526,873 | 287,857 | 76,160 | 211,697 |
| Saskatchewan | 36 | 312,152 | 814,686 | 121,773 | 32,139 | 89,634 |
| Alberta. | 30 | 800,215 | 1,364, $£ 24$ | 301,835 | 78,549 | 223,286 |
| British Columbia | 68 | 1,693,641 | 3,112,908 | 492,753 | 154,608 | 338,145 |
| Totals. | 2,950 | 43,302,433 | 84,246,957 | 13,843,547 | 4,455,848 | 9,387,699 |
|  | Proposals Under Section 2i (1)(a) of the Act |  |  |  |  |  |
|  | Proposals Completed |  | Unsecured Lisbilities as Estimated by Debtors |  | Paid to <br> Unsecured Creditors |  |
|  | No. |  | \$ |  | \$ |  |
| Newfoundland. | - |  | 157,663 |  | 38,677 |  |
| Nova Scotia.... | 1 |  |  |  |  |  |
| New Brunswick |  |  | 19,605 |  | 1,500 |  |
| Quebec................ |  | - | 3,379,429 |  | 1,054,195 |  |
| Ontario. | 28 |  | 2,879,084$\ldots$ |  | 815,767 |  |
| Manitoba.... | - |  |  |  | ... |  |
| Alberta..... |  |  | $\cdots$ |  |  |  |
| British Columbia | 4 |  | 500,837 |  | 67\%729 |  |
| Totals | 110 |  | 6,936,618 |  | 1,977,868 ${ }^{2}$ |  |

${ }^{1}$ Includes summary administration provisions of the Bankruptcy Act.
${ }^{2}$ In addition to the amount paid to creditors by the trustee, secured creditors realized direct from their security approximately $\$ 34,797,906$.

Returns under the Bankruptcy and Winding-Up Acts. $\dagger$-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. Certain documents relating to estates administered under these Acts have been forwarded, since July 1920, to the Dominion Statistician for statistical analysis. The Bankruptcy Act of 1949 altered the administration of bankruptcies by providing for proposals from insolvent persons. Since

[^280]July 1950, agreements made under this method have not been included with the statistics of bankruptcy, so that subsequent figures are not strictly comparable with those for previous years. Table 2 shows the number of proposals in order to give a general impression of the trend. The series was revised in 1955 to cover business failures only, excluding failures of individuals such as wage-earners, salesmen and executive personnel formerly included. In Tables 2, 3 and 4 figures for the year 1955 are given on both the old and new bases.

## 2.-Bankruptcies and Insolvencies under Federal Legislation, by Province, 1953-62

Note.-Figures from 1923 are given in the corresponding table of previous Year Books beginning with the 1941 edition.

| Year | Atlantic Provinces | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. | No. | No. |
| 1953. | 30 | 1,221 | 255 | 27 | 19 | 33 | 72 | 1,657 |
| 1954. | 45 | 1,645 | 414 | 27 | 30 | 44 | 73 | 2,278 |
| 1955. | 37 | 1,789 | 436 | 27 | 39 | 44 | 76 | 2,448 |
| 19551. | 36 | 1,180 | 406 | 27 | 37 | 42 | 67 | 1,795 |
| 1956. | 37 | 1,265 | 507 | 23 | 34 | 41 | 60 | 1,967 |
| 1957. | 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 | 914 | 34 | 28 | 46 | 120 | 2,828 |
| 1961. | 47 | 1,450 | 932 | 39 | 25 | 62 | 104 | 2,659 |
| 1962. | 33 | 1,694 | 1,177 | 47 | 36 | 94 | 109 | 3,190 |
| Proposals- |  |  |  |  |  |  |  |  |
| 1953........ | 1 | 158 | 9 29 | 2 |  | 1 | 1 | 171 |
| 1955. | 7 | 466 | 36 | 2 | 1 | 1 | 5 | 518 |
| 1956. |  | 738 | 49 | 2 | - | - | 14 | 812 |
| 1957. | 4 | 479 | 38 | 1 | 1 | 1 | 10 | 534 |
| 1958. | 5 | 395 | 44 | 1 | 1 | 1 | 11 | 458 |
| 1959. | 3 | 419 | 63 | 2 | 1 | 3 | 12 | 503 |
| 1960. | 9 | 480 | 96 | 3 | , | 2 | 11 | 601 |
| 1961. | 11 | 482 | 80 | 1 | 2 | 1 | 13 | 590 |
| 1962.. | 4 | 479 | 92 | - | - | 3 | 14 | 592 |

${ }^{1}$ New series not strictly comparable with previous figures; see text above.

## 3.-Bankruptcies and Insolvencies under Federal Legislation, by Branch of Business, 1953-62

Note.-Figures from 1924 are given in the corresponding table of previous Year Books beginning with the 1942 edition.

| Year | Agricul- ture, Forestry, Fishing, Trapping and Mining | Manu-facturing | Con-struction | Transportation, Communications and Storage | Trade | Finance and Public Utilities | Service | $\left\lvert\, \begin{gathered} \text { Not } \\ \text { Classified } \end{gathered}\right.$ | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| 1953. | 53 | 359 | 124 | 52 | 650 | 30 | 286 | 103 | 1,657 |
| 1954. | 80 | 416 | 135 | 67 | 973 | 41 | 408 | 158 | 2,278 |
| 1955. | 68 | 305 | 287 | 116 | 882 | 44 | 454 | 292 | 2,448 |
| 19551. | 66 | 290 | 309 | 68 | 772 | 14 | 250 | 26 | 1,795 |
| 1956. | 58 | 342 | 375 | 83 | 782 | 28 | ${ }_{244}^{246}$ | 53 74 | ${ }_{2}^{1,213}$ |
| 1957. | 80 | 366 | 372 | 109 | 928 | 40 | 244 | 74 | $\stackrel{2,125}{ }$ |
| 1958. | 67 | 356 | 367 | 105 | 882 | 42 | ${ }_{307}^{295}$ | $-11$ | 2,229 |
| 1959. | 81 | 374 | 449 | 76 | 906 1.29 | 36 65 | 307 363 | 二 | 2,828 |
| 1960. | 100 86 | 323 <br> 285 | 619 470 | 1129 | 1,229 1,234 | 65 69 | 363 402 | 二 | 2,659 |
| 1962........ | 93 | 326 | 573 | 143 | 1,496 | 82 | 477 | - | 3,190 |

[^281]4.-Estimated Liabilities of Bankruptcies and Insolvencies, 1953-62

| Year | Atlantic Provinces | Quebec | Ontario | Prairie Provinces | British Columbia | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| 1953. | 1,692 | 18,022 | 8,270 | 2,841 | 1,993 | 32,818 |
| 1954. | 1,029 | 30,825 | 15,036 | 4,675 | 1,577 | 53,142 |
| 1955. | 1,855 | 33,927 | 16,324 | 4,196 | 2,837 | 59,138 |
| 19551. | 2,248 | 28,746 | 16,299 | 3,939 | 2,548 | 53,776 |
| 1956. | 2,049 | 32,704 | 21,842 | 5,223 | 2,437 | 64,254 |
| 1957. | 2,508 | 37,266 | 31,349 | 5,683 | 3,056 | 79,863 |
| 1958. | 4,493 | 40,250 | 17,884 | 4,672 | 5,479 | 72,778 |
| 1959. | 2,302 | 50,034 | 34,156 | 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 | 77,725 | 55,888 | 7,210 | 7,280 | 150,669 |

${ }^{1}$ New series not strictly comparable with previous figures; see text preceding Table 2.
5.-Bankruptcies and Insolvencies, by Industry and Economic Area, 1961 and 1962

| Year and Industry | Atlantic Provinces | Quebec | Ontario | Prairie Provinces | British Columbia | Totals | Total Liabilities |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. | \$'000 |
| 1961 |  |  |  |  |  |  |  |
| Agriculture, Forestry, Fishing, Trapping and Mining | 3 | 45 | 25 | 5 | 8 | 86 | 7,892 |
| Manufacturing . . . . . . . . . . . . . . . . | 4 | 164 | 98 | 1 | 15 | 285 | 18,696 |
| Foods and beverages............... | - | 22 | 8 | 1 | 2 | 33 | 1,639 |
| Tertiles............................. | - | 2 | 1 | - |  | 3 | 149 |
| Clothing......... | - | 31 | ${ }^{6}$ | - | 10 | 37 | 2,799 |
| Wood products...................... | 2 | 37 | 20 | 1 | 10 | 70 | 4,127 |
| Paper products and printing industries. | 1 | 16 | 14 | - | - | 31 | 798 |
| Iron and steel, transportation equipment, electrical apparatus and nonferrous metals | 1 | 25 | 35 | 1 | 3 | 65 | 7,201 |
| Chemical products................... | - | 3 | 1 | - | - | 4 | 7,619 |
| Other industries...................... | - | 28 | 13 | 1 | - | 42 | 1,364 |
| Construction....... | 6 | 232 | 185 | 31 | 16 | 470 | 23,665 |
| General contractors.................. | 2 | 85 | 85 | 16 | 7 | 195 | 13,535 |
| Special trade contractors............ | 4 | 147 | 100 | 15 |  | 275 | 10,130 |
| Transportation, Communications and Storage | 2 | 60 | 37 | 8 | 6 | 113 | 3,240 |
| Trade | 30 | 652 | 442 | 65 | 45 | 1,234 | 46,286 |
| Food. | 5 | 128 | 73 | 6 | 3 | 1,215 | 5,225 |
| General merchandise. | 3 | 25 | 13 | 3 | 1 | 45 | 3,355 |
| Automotive products. | 7 | 150 | 107 | 27 | 12 | 303 | 10,259 |
| Clothing and shoes........ | 1 | 87 | 58 | 4 | 8 | 158 | 5,798 |
| Hardware and building materials... | 8 | 57 | 52 | 10 | 10 | 137 | 7,714 |
| Furniture, appliances and radios.... | - 4 | 98 | 68 | 5 | 3 | 178 | 7,535 |
| Other.................................... | $-2$ | 101 | 4 67 | 1 | $\stackrel{2}{6}$ | 13 185 | ${ }^{629}$ |
| Finance and Public Utilities | 2 | 44 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Service........ | - | 253 | 128 | 12 | 9 | 402 | 11,614 |
| Community | - | 11 | 5 | - | - | 16 | 231 |
| Business................................ | - | 7 | 4 | - | 2 | 13 | 325 |
| Personal. |  | 173 | 18 8 8 | 2 |  | 59 | 1,762 |
| Other.. | - | +23 | 85 16 | 8 | ${ }_{3}^{4}$ | 270 44 | 8,489 807 |
| Totals, 1961.................. | 47 | 1,450 | 932 | 126 | 104 | 2,659 | 116,520 |

## 5.-Bankruptcies and Insolvencies, by Industry and Economic Area, 1961 and 1962-

concluded

| Year and Industry | Atlantic Provinces | Quebec | Ontario | Prairie Provinces | British Columbia | Totals | Total Liabilities |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. | \$'000 |
| 1962 |  |  |  |  |  |  |  |
| Agriculture, Forestry, Fishing, Trapping and Mining. . ......... | 4 | 52 | 31 | 3 | 3 | 93 | 5,457 |
| Manufacturing. . . . . . . . . . . . . . . . . . . | 2 | 189 | 111 | 10 | 14 | 326 | 28,870 |
| Foods and beverages................. | 1 | 14 | 18 | 3 | 2 | 38 | 2,486 |
| Textiles.................... . . . . . . . . . | - | 3 | 2 | - | - | 5 | 240 |
| Clothing.... . . . . . . . . . . . . . . . . . . . . | - | 35 | 8 | 1 | 1 | 45 | 3,266 |
| Wood products..................... . | - | 51 | 24 | 2 | 6 | 83 | 6,373 |
| Paper products and printing industries. | - | 23 | 16 | - | 3 | 42 | 5,079 |
| Iron and steel, transportation equipment, electrical apparatus and nonferrous metals | 1 | 28 | 29 | 3 | 2 | 63 | 9,010 |
| Chemical products................... | - | 1 | 2 | 3 | 2 | 63 3 | 110 |
| Other industries............. . . . . . . . | - | 34 | 12 | 1 | - | 47 | 2,305 |
| Construction. | 4 | 291 | 222 | 38 | 18 | 573 | 27,589 |
| General contractors................ | 2 | 111 | 104 | 18 | 9 | 244 | 16,769 |
| Special trade contractors........... | 2 | 180 | 118 | 20 | 9 | 329 | 10,820 |
| Transportation, Communications and Storage | 2 | 79 | 43 | 11 | 8 | 143 | 5,968 |
| Trade | 18 | 750 | 578 | 93 | 57 | 1,496 | 52,926 |
| Food. | 2 | 153 | 59 | 14 | 9 | 237 | 8,825 |
| General merchandise. | 3 | 25 | 22 | 6 | - | 56 | 4,170 |
| Automotive products. | 6 | 197 | 149 | 27 | 7 | 386 | 8,478 |
| Clothing and shoes................. | 2 | 92 | 88 | 5 | 11 | 198 | 5,471 |
| Hardware and building materials... | 2 | 71 | 61 | 18 | 13 | 165 | 9,826 |
| Furniture, appliances and radios.... | 1 | 75 | 82 | 14 | 7 | 179 | 5,876 |
| Drugs................................ | - | 6 | 5 | 1 | - | 12 | , 369 |
| Other........................ . . . . . . . . . | 2 | 131 | 112 | 8 | 10 | 263 | 9,911 |
| Finance and Public Utilities. . . . . . | - | 46 | 30 | 4 | 2 | 82 | 13,384 |
| Service. | 3 | 287 | 162 | 18 | 7 | 477 | 16,475 |
| Community | - | 12 | 6 | - | 1 | 19 | 552 |
| Recreational. | - | 18 | 11 | 1 | 1 | 31 | 1,741 |
| Business. | 1 | 42 | 16 | 2 | - | 61 | 3,217 |
| Personal. | 2 | 194 | 115 | 13 | 4 | 328 | 10,233 |
| Other..... . . . . . . . . . . . . . . . . . . . . . . . . | - | 21 | 14 | 2 | 1 | 38 | 732 |
| Totals, 1962.. | 33 | 1,694 | 1,17\% | 177 | 109 | 3,190 | 150,669 |

## PART IV.-PRICES*

## Section 1.-Index Numbers of Wholesale Prices

The term "wholesale prices" refers in this Section 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: studies 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 studies in changes of physical volume. They are also used by business firms abroad in connection with sales and purchases in Canada.

[^282]General Wholesale Index.-The general wholesale index includes prices mainly of manufacturers but also included are 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. In the general wholesale index, prices are grouped according to a commodity classification scheme based on chief component material similarities. In addition, indexes classified according to degree of manufacture are available. In Table 1, the general wholesale index is presented for the period 1935-62. The general 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 1953-62, the general wholesale price index and two of its integral classifications-raw and partly manufactured goods, and fully and chiefly manufactured goods; also presented in that table 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 1953-62 in Tables 3 and 4, respectively. More specific indexes 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.

The DBS has introduced a new system of wholesale price indexes called Industry Selling Price Indexes $1956=100$, referring exclusively to manufacturing industries and including 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.

The general wholesale index rose 2.9 p.c. from 233.3 in 1961 to 240.0 in 1962 and thus continued its annual increases which began in 1954.

## 1.-General Wholesale Index Annual Averages, 1935-62

( $1935-39=100$ )

| Year | Average | Year | Average | Year | Average | Year | Average |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1935. | 94.4 | 1942. | 123.0 | 1949. | 198.3 | 1956. | 225.6 |
| 1936. | 96.8 | 1943. | 127.9 | 1950 | 211.2 | 1957. | 227.4 |
| 1937. | 107.7 | 1944. | 130.6 | 1951. | 240.2 | 1958 | 227.8 |
| 1938. | 102.0 | 1945. | 132.1 | 1952. | 226.0 | 1959. | 230.6 |
| 1939. | 99.2 | 1946. | 138.9 | 1953. | 220.7 | 1960. | 230.9 |
| 1940 | 108.0 | 1947. | 163.3 | 1954. | 217.0 | 1961 | 233.3 |
| 1941 | 116.4 | 1948 | 193.4 | 1955 | 218.9 | 1962 | 240.0 |

The raw and partly manufactured goods index increased 5.3 p.c. from 212.6 in 1961 to 223.8 in 1962 and thus exceeded the increase of 1.8 p.c. shown by the fully and chiefly manufactured goods index.
2.-Annual Index Numbers of Wholesale Price Groups, 1953-62
$(1935-39=100)$

| Year | General Wholessale Index | Raw and Partly Manufac tured Goods | Fully and Chiefly Manufactured Goods | Industrial Materials | Canadian Farm Products |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Field | Animal | Total |
| 1953. | 220.7 | 207.0 | 228.8 | 232.3 | 179.4 | 263.8 | 221.6 |
| 1954. | 217.0 | 204.8 | 224.2 | 223.7 | 170.9 | 256.2 | 213.6 |
| 1955. | 218.9 | 209.7 | 224.5 | 236.0 | 180.1 | 245.1 | 212.6 |
| 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 | 223.9 |
| 1960. | 230.9 | 209.6 | 242.2 | 240.4 | 189.1 | 264.1 | 226.6 |
| 1981. | 233.3 | 212.6 | 244.5 | 243.2 | 191.7 | 270.0 | 230.9 |
| 1962......... | 240.0 | 223.8 | 249.0 | 248.0 | 185.1 p | 286.0 p | 235.6p |

The indexes of building materials* showed little change over the year 1962. The non-residential index (1949=100) advanced almost steadily during the year and, at 132.9 in December, was up from 131.2 a year earlier; the annual index was 131.9 compared with 131.1 for 1961. The residential building materials index (1935-39=100, arithmetically converted to the base 1949=100 for comparability with the non-residential index) moved up from 128.2 in December 1961 to 130.0 in December 1962; the composite for the year was 1.4 points higher than in 1961.

[^283]
## 3.-Annual Price Index Numbers of Non-residential Building Materials, 1953-62

( $1949=100$ )

| Year | Composite Index | Principal Components |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Steel and Metal Work | Plumbing, Heating and Other Equipment | Electrical <br> Equipment and Fixtures | Aggregate, Cement and Concrete Mix |  | Blocks, Brick and Stone | Tile |
| Group weight as a percentage of TOTAL.............. | ... | 20.1 | 21.4 | 11.5 | 11.1 | 10.5 | 9.1 | 3.8 |
| 1953............... | 124.4 | 134.7 | 119.2 | 119.6 | 120.2 | 127.8 | 125.9 | 117.1 |
| 1954................ | 121.8 | 128.2 | 115.2 | 117.6 | 120.9 | 124.5 | 127.0 | 120.6 |
| 1955................ | 123.4 | 129.9 | 118.0 | 121.3 | 120.3 | 127.6 | 127.0 | 120.3 |
| 1956................. | 128.0 | 139.0 | 123.4 | 123.6 | 117.0 | 131.5 | 130.3 | 120.8 |
| 1957................. | 130.0 | 147.7 | 124.1 | 118.4 | 119.4 | 128.7 | 134.0 | 118.5 |
| 1958. | 129.8 | 150.9 | 123.8 | 114.0 | 119.6 | 126.8 | 135.7 | 118.2 |
| 1959. | 131.7 | 152.6 | 126.0 | 119.2 | 118.6 | 131.3 | 137.4 | 118.3 |
| 1960................. | 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 |

4.-Annual Price Index Numbers of Residential Building Materials, 1953-62
( $1949=100$ )

| Year | Composite Index | Principal Components |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Cement, Sand and Gravel | Brick, and Stone | Lumber and its Products | Lath, <br> Plaster and Insulation | Roofing Mate rial | Paint and Glass | Plumb <br> ing and <br> Heat- <br> ing <br> Equip- <br> ment | Electrical Equipment and Fix tures | 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 |
| 1953. | 123.9 | 119.5 | 136.3 | 127.5 | 108.8 | 114.8 | 113.5 | 116.0 | 121.9 | 131.4 |
| 1954. | 121.7 | 119.1 | 137.4 | 124.3 | 109.1 | 122.5 | 116.3 | 112.5 | 119.8 | 129.7 |
| 1955 | 124.3 | 117.6 | 138.7 | 127.1 | 106.1 | 128.3 | 122.3 | 115.0 | 132.2 | 131.8 |
| 1956. | 128.5 | 117.9 | 144.9 | 130.5 | 110.8 | 136.3 | 126.3 | 120.9 | 140.5 | ${ }_{145} 13.5$ |
| 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 | 123.5 | 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 | 149.8 149.4 |
| 1962 . | 129.7 | 120.5 | 143.6 | 130.4 | 126.2 | 112.0 | 132.9 | 128.6 | 114.0 | 149.4 |

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, 1959-61
(1958=100)
Source: United Nations Monthly Bulletin of Statistics, May 1963.

| Country | 1959 | 1960 | 1961 | Country | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Belgium | 100 | 101 | 100 | India. | 104 | 111 | 113 |
| Brazil..................... | 138 | 180 | 249 | Iran. | ${ }_{98}^{99}$ | 102 | 102 |
| Britain. | 101 191 | 101 | 100 102 | Korea, Republic of............ | 102 | ${ }_{113}$ | ${ }_{134}$ |
| Chile.. | 130 | 137 | 138 | Netherlands.................. | 101 | 99 | 98 |
| Denmark. | 100 | 100 | 102 | New Zealand. | 102 | 102 | 102 |
| Dominican Republic (St. |  |  |  | Norway. | 100 | 101 | 102 |
| Domingo.......... | 105 | 107 | 110 | Sweden....j | 100 98 | 103 99 | ${ }_{99}^{105}$ |
| Germany, Federal Republic |  |  |  | Turkey | 120 | 126 | 130 |
|  | 99 | 100 | 102 104 | United Arab Republic....... | 100 | 100 | 102 |
| Greece.. | 101 | 103 | 104 | United States............... | 100 | 100 | 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 "basket" 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.


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. During 1959, the upward movement in the index was far less marked than in the preceding years. For the year as a whole, the average level of consumer prices increased by 1.1 p.c. as compared with increases of 2.6 p.c. and 3.2 p.c. in 1958 and 1957, respectively. The most significant change in the pattern of price movement occurred in food prices which were fractionally lower on average in 1959. This was in marked contrast to increases of 3.0 p.c. in 1958 and 4.6 p.c. in 1957.

During 1960, consumer prices continued to reflect the relative stability of the previous year with an over-all price rise of 1.2 p.c. compared with an increase of 1.1 p.c. in 1959 over the year 1958. Changes in six of the seven component groups were quite similar; each of the six was at a higher level compared with 1959 , the increases ranging from 0.9 p.c. for food to 1.8 p.c. for recreation and reading. The health and personal care component, which in the past has risen faster than any of the other components, again experienced the largest gain in 1960 , rising 2.9 p.c. above the 1959 level.

In 1961, the index ranged narrowly from a low of 128.9 in February to a high of 129.7 in November. Two factors in price movement during the year were (1) the introduction of the 3-p.c. sales tax in Ontario in September, which was taken into account, and (2) the change in the exchange rate of the Canadian dollar. Although the latter was considered likely to result in higher prices on imported goods and ultimately in higher consumer prices, no evidence of this was available up to December 1961 as the index stood at just about the same level as in December 1960.

Relative price stability continued throughout 1962 for the fourth consecutive year. The annual average of 130.7 was 1.2 p.c. higher than the 1961 figure of 129.2. Increases of 1.8 p.c. and 1.9 p.c. in the food, and health and personal care groups were the largest of the year. Lesser upward movements occurred in the other components with the exception of transportation, in which a slight decline was noted.

## 7.-Consumer Price Index Numbers, 1953-62

( $1949=100$ )

| Year | Food | Housing | Clothing | Transportation |  | Recreation and <br> Reading | Tobacco and Alcohol | Composite Index |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Group weight as a percentage of total. $\qquad$ | 27 | 32 | 11 | 12 | 7 | 5 | 6 | 100 |
| 1953....................... | 112.6 | 120.0 | 110.1 | 119.2 | 120.1 | 116.7 | 108.0 | 115.5 |
| 1954. | 112.2 | 121.6 | 109.4 | 120.0 | 124.5 | 119.5 | 107.3 | 116.2 |
| 1955. | 112.1 | 122.4 | 108.0 | 118.5 | 126.7 | 122.6 | 107.4 | 116.4 |
| 1956. | 113.4 | 124.2 | 108.6 | 123.3 | 130.0 | 125.3 | 107.7 | 118.1 |
| 1957. | 118.6 | 126.7 | 108.5 | 129.9 | 138.2 | 129.8 | 109.4 | 121.9 |
| 1958.. | 122.1 | 129.0 | 109.7 | 133.8 | 145.4 | 138.4 | 110.6 | 125.1 |
| 1959. | 121.1 | 131.4 | 109.9 | 138.4 | 150.2 | 141.7 | 114.0 | 126.5 |
| 1960.. | 122.2 | 132.7 | 110.9 | 140.3 | 154.5 | 144.3 | 115.8 | 128.0 |
| 1961. | 124.0 | 133.2 | 112.5 | 140.6 | 155.3 | 146.1 | 116.3 | 129.2 |
| 1962. | 126.2 | 134.8 | 113.5 | 140.4 | 158.3 | 147.3 | 117.8 | 130.7 |

Table 8 gives single commodity price relatives on the base $1949=100$ for a number of important items entering into the food component of the consumer price index.

## 8.-Urban Average and Relative Retail Prices of Staple Foods, 1953-62 <br> $(1949=100)$

| Year | Beef, sirloin, per lb. |  | Pork, rib chops, per lb. |  | Lard, pure, per lb. |  | $\begin{gathered} \text { Eggs, "A", } \\ \text { fresh, } \\ \text { per doz. } \end{gathered}$ |  | Milk, fresh, per qt. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Average Price | Price Relative | Average Price | Price <br> Rela- <br> tive | Average Price | Price Relative | Average Price | Price Relative | Average Price | Price <br> Rela- <br> tive |
|  | cts. |  | cts. |  | cts. |  | cts. |  | cts. |  |
| 1953. | 79.6 | 113.0 | 72.51 | $113.7{ }^{1}$ | 20.8 | 88.4 | 67.6 | 109.9 | 21.1 | 118.5 |
| 1954. | 77.0 | 109.4 | 66.4 | 116.8 | 26.3 | 112.2 | 57.1 | 92.9 | 21.1 | 118.5 |
| 1955. | 80.0 | 113.6 | 61.5 | 108.2 | 22.4 | 95.2 | 61.5 | 99.9 | 21.1 | 118.5 |
| 1956. | 81.6 | 115.9 | 64.4 | 113.2 | 21.8 | 92.9 | 63.2 | 102.7 | 21.2 | 119.1 |
| 1957... | 84.3 | 119.7 | 74.6 | 131.1 | 25.6 | 109.0 | 56.0 | 91.0 | 22.5 | 126.2 |
| 1958. | 94.4 | 134.1 | 72.5 | 127.4 | 24.3 | 103.6 | 57.9 | 94.1 | 23.2 | 130.4 |
| 1959. | 101.0 | 143.5 | 67.6 | 118.9 | 18.8 | 80.3 | 54.4 | 88.4 | 23.4 | 131.0 |
| 1960.. | 97.7 | 138.8 | 69.8 | 122.8 | 20.0 | 85.2 | 54.5 | 88.6 | 23.7 | 133.0 |
| 1961. | 97.1 | 138.0 | 72.8 | 128.0 | 23.1 | 98.2 | 56.3 | 91.5 | 23.5 | 132.0 |
| 1962. | 107.4 | 152.5 | 74.9 | 131.7 | 22.5 | 95.7 | 53.2 | 86.5 | 23.6 | 132.4 |
|  | Flour, per lb. |  | Tomatoes, canned, 28 -oz. tin |  | Potatoes, 10 lb . |  | Sugar, granulated, per lb. |  | Bread, per lb. |  |
|  | Average Price | Price Relative | Average Price | Price Relative | Average Price | Price Relative | Aver$\xrightarrow[\text { age }]{\text { Price }}$ | Price Relative | $\begin{aligned} & \text { Aver- } \\ & \text { age } \\ & \text { Price } \end{aligned}$ | Price Relative |
|  | cts. |  | cts. |  | cts. |  | cts. |  | cts. |  |
| 1953. | 7.6 | 108.9 | 24.4 | 121.8 | 39.0 | 111.8 | 10.0 | 107.8 | 12.3 | 121.5 |
| 1954. | 7.7 | 110.2 | 21.5 | 107.4 | 37.5 | 107.6 | 9.4 | 101.8 | 12.8 | 126.8 |
| 1955. | 7.4 | 106.4 | 26.3 | 131.3 | 46.8 | 134.5 | 9.2 | 99.7 | 12.8 | 126.4 |
| 1956.. | 7.6 | 108.8 | 27.3 | 136.1 | 49.7 | 142.6 | 9.3 | 100.4 | 13.3 | 131.6 |
| 1957. | 7.9 | 113.3 | 29.1 | 144.8 | 42.1 | 120.8 | 12.3 | 133.1 | 14.3 | 141.4 |
| 1958. | 8.0 | 114.3 | 26.6 | 132.2 | 45.7 | 131.2 | 10.6 | 114.4 | 14.8 | 146.3 |
| 1959. | 8.4 | 119.9 | 27.3 | 136.1 | 48.9 | 140.3 | 9.4 | 101.4 | 15.2 | 150.9 |
| 1960.. | 8.8 | 125.5 | 27.8 | 138.2 | 58.0 | 166.5 | 9.4 | 101.7 | 15.6 | 154.5 |
| 1961. | 9.0 | 128.9 | 27.0 | 134.5 | 47.8 | 137.2 | 9.6 | 103.8 | 15.9 | 157.6 |
| 1962.. | 9.8 | 141.0 | 26.6 | 132.7 | 47.3 | 135.9 | 9.5 | 103.4 | 16.4 | 162.2 |

[^284]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 comparison. 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, 1953-62

$(1949=100)$

| Year | $\begin{gathered} \text { St., } \\ \text { John', } \\ \text { Nfld. } \\ (1951 \\ =100) \end{gathered}$ | $\begin{aligned} & \text { Halifax, } \\ & \text { N.S. } \end{aligned}$ | Saint <br> John, <br> N.B. | Montreal, Que. | Ottawa, Ont. | Toronto, Ont. | Winni- <br> peg, <br> Man. | Saska-toonRegina, Sask. | Edmon-ton-Calgary, Alta. | Vancouver, B.C. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1953. | 102.2 | 113.2 | 115.3 | 116.3 | 115.0 | 116.8 | 114.4 | 113.1 | 114.0 | 116.1 |
| 1954. | 102.8 | 114.1 | 116.6 | 116.8 | 116.2 | 118.3 | 115.3 | 114.2 | 114.9 | 117.4 |
| 1955. | 104.2 | 114.8 | 117.7 | 116.9 | 117.2 | 118.8 | 115.9 | 114.6 | 114.6 | 117.9 |
| 1956. | 106.8 | 116.1 | 118.8 | 118.4 | 119.2 | 120.6 | 117.2 | 115.8 | 115.7 | 119.6 |
| 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 |

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 1959, 1960 and 1961. 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, 1959-61 <br> $(1958=100)$

Source: United Nations Monthly Bulletin of Statistics, May 1963.

| Country | 1959 | 1960 | 1961 | Country | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Belgium. | 101 | 102 | 103 | Iran. | 111 | 122 | 126 |
| Brazil (São Paulo). | 137 | 185 | 256 | Israel......................... | 101 | 104 | 111 |
| Britain............. | 101 | 102 | 105 | Korea, Republic of (Seoul)... | 103 | 112 | 121 |
| Canada. | 101 | 102 | 103 | Netherlands. | 102 | 103 | 105 |
| Chile (Santiago) | 139 | 155 | 167 | New Zealand | 104 | 105 | 106 |
| Denmark........ | 102 | 103 | 107 | Norway. | 102 | 102 | 105 |
| Dominican Republi |  |  |  | Sweden. | 101 | 105 | 107 |
| Domingo)... | 100 | 96 110 | $\stackrel{93}{114}$ | Switzerland | 99 | 101 | 103 |
| France (Paris) ...... | 106 | 110 | 114 | Turkey (Istanbul)........... | 127 | 134 | 138 |
| Republic of....... | 101 | 102 | 105 | United Arab Republic |  |  |  |
| Greece.. | 102 | 102 | 103 | (Cairo)..................... | 100 | 102 | 103 |
| India... | 104 | 106 | 108 | United States................ | 101 | 102 | 103 |

## Section 3.-Consumer Expenditure Surveys

A continuing program of surveys of family income and expenditure in urban areas was begun in 1953 and surveys have been conducted since then at two-year intervals. The primary purpose of these surveys has been to collect information for reviewing and revising, if necessary, the weights of the consumer price index. The surveys have therefore been restricted to cover only those families which were comparable in family 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 three survey periods covering 1953, 1955 and 1957, 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, 1957, (Catalogue No. 62-516) and City Family Expenditure, 1957 (Catalogue No. 62-517).

Summary results of the 1959 surveys appear in the 1962 Year Book at pp. 934937 where tables are given showing how expenditure patterns varied among families grouped by income levels, and the average dollar expenditure per family and per person for major items. 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. Results of these surveys were not yet available at the time of printing.

## 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, 67.2; utilities, 18.5 ; and finance, 14.3. 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.

[^285]11．－Investors Index Numbers of Common Stocks，by Month， 1961 to Mid－1963

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## 12.-Index Numbers of Common Stock Supplementary Indexes, by Month, 1961 to Mid-1963

| $(1956=100)$ |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Year and Month | Primary Oils and Gas | Uraniums | Year and Month | Primary Oils and Gas | Uraniums |
| 1961 |  |  | 1962-concluded |  |  |
| January....... | 46.4 | 65.2 | April... | 67.8 | 81.2 |
| February...... | 55.0 | 65.8 | May..... | 62.2 | 79.7 |
| March.... | 60.0 | 68.6 | June... | 53.5 | 70.6 |
| April.. | 59.9 | 70.0 | July. | 52.6 | 70.5 |
| May......... | 60.2 | 71.6 | August...... | 59.2 | 73.9 |
| June.......... | 58.2 | 71.5 | September.. | 59.8 | 76.6 |
| July... | 53.8 | 71.8 | October.... | 61.1 | 74.6 |
| August. | 58.1 | 73.5 | November. | 63.9 | 77.6 |
| September. . | 58.6 | 72.8 | December. | 65.1 | 81.6 |
| October..... | 59.5 | 76.0 |  |  |  |
| November.. | 66.7 | 78.9 |  |  |  |
| December............... | 72.4 | 75.3 | 1963 |  |  |
|  |  |  | January..... | 65.9 | 86.8 |
| 1962 |  |  | February.. | 62.4 | 91.7 |
|  |  |  | March....... | 63.4 | 89.5 |
| January.... | 69.4 | 75.9 | April.... | 67.9 | 92.4 |
| February... | 73.9 72.6 | 78.2 79.6 | May.. | 68.7 64.3 | 97.5 |
| March..... | 72.6 | 79.6 | June.. | 64.3 | 96.1 |

13.-Index Numbers of Prices of Mining Stocks, by Month, 1959 to Mid-1963
$(1956=100)$

| Year and Month | Golds | Base Metals | Composite | Year and Month | Golds | Base Metals | Composite |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1959 |  |  |  | 1961-concluded |  |  |  |
| January | 112.9 | 78.6 | 90.7 | April. | 95.1 | 81.2 | 86.1 |
| February | 113.1 | 79.9 | 91.7 | May. | 97.1 | 87.2 | 90.7 |
| March. | 113.6 | 81.7 | 93.0 | June. | 97.4 | 86.4 | 90.3 |
| April. | 112.8 | 74.9 | 88.3 | July. | 101.8 | 92.1 | 95.5 |
| May.. | 114.8 | 72.2 | 87.3 | August.... | 112.5 | 93.6 | 100.3 |
| June. | 114.8 | 72.0 | 87.2 | September | 109.9 | 89.7 | 96.9 |
| July. | 115.2 | 73.3 | 88.1 | October. | 108.8 | 90.2 | 96.8 |
| August.... | 113.6 | 73.3 | 87.6 | November | 113.5 | 95.9 | 102.1 |
| September | 108.2 | 66.7 | 81.4 | December. | 112.9 | 97.7 | 103.1 |
| October. | 109.1 | 67.0 | 81.9 |  |  |  |  |
| November | 109.0 | 67.5 | 82.2 | 1962 |  |  |  |
| December. | 108.6 | 68.0 | 82.4 | 1962 |  |  |  |
|  |  |  |  | January. | 112.3 | 98.0 | 103.1 |
| 1960 |  |  |  | February. | 109.8 | 96.0 | 100.9 |
|  |  |  |  | March. | 109.4 | 95.4 | 100.4 |
| January | 108.7 | 69.9 | 83.6 | April. | 107.5 | 94.7 | 99.2 |
| Februar | 108.2 | 65.4 | 80.6 | May.. | 116.8 | 91.7 | 100.6 |
| March. | 108.8 | 61.2 | 78.1 | June. | 123.5 | 84.2 | 98.1 |
| April. | 103.4 | 61.9 | 76.6 | July.... | 123.8 | 82.8 | 97.3 |
| May. | 89.4 | 62.2 | 71.8 | August. | 116.4 | 83.7 | 95.3 |
| June. | 85.6 | 62.3 | 70.5 | September | 114.0 | 80.4 | 92.3 |
| July.. | 85.4 | 61.8 | 70.2 | October... | 108.9 | 74.8 | 86.9 |
| August. | 94.2 | 63.2 | 74.2 | November. | 105.4 | 79.0 | 88.4 |
| September | 97.0 | 64.7 | 76.1 | December. | 102.5 | 81.0 | 88.6 |
| October. | 105.4 | 63.4 | 78.3 |  |  |  |  |
| November | 107.1 | 65.8 | 80.4 |  |  |  |  |
| December. | 103.0 | 66.3 | 79.3 | 1963 |  |  |  |
|  |  |  |  | January. . | 105.3 | 84.9 | 92.1 |
| 1961 |  |  |  | February. | 111.6 | 82.7 | 92.9 |
| January |  |  |  | March.. | 109.6 | 83.7 | 92.9 |
| February | 100.1 | 70.0 71.0 | 84.4 81.3 |  | 107.8 | 85 | 93.2 |
| March... | 95.5 | 75.8 | 82.8 | June. | 107.6 | 85.0 81.5 | 92.5 90.8 |

## 14.-Index Numbers of Preferred Stocks, by Month, 1954 to Mid-1963

( $1956=100$ )
Note.-Figures for 1927-45 are given in the 1948-49 Year Book, p. 958, and for 1946-53 in the 1956 edition, p. 1045.

| Year | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Yearly Av. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1954. | 97.8 | 98.4 | 99.5 | 101.1 | 102.1 | 102.7 | 103.1 | 104.1 | 104.3 | 104.8 | 105.5 | 105.5 | 102.4 |
| 1955. | 105.7 | 105.9 | 106.0 | 105.5 | 106.0 | 107.0 | 108.0 | 108.2 | 107.7 | 107.8 | 106.9 | 104.6 | 106.6 |
| 1956 | 105.6 | 105.5 | 104.5 | 102.9 | 100.9 | 100.0 | 100.8 | 99.9 | 97.3 | 95.5 | 94.5 | 92.9 | 100.0 |
| 1957. | 93.8 | 94.1 | 93.1 | 92.3 | 92.1 | 90.7 | 90.3 | 89.9 | 88.6 | 87.9 | 88.8 | 90.9 | 91.0 |
| 1958. | 92.7 | 94.1 | 94.8 | 95.4 | 97.2 | 98.6 | 97.7 | 98.3 | 98.6 | 97.9 | 97.9 | 96.1 | 96.6 |
| 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. | 95.0 | 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 | 99.3 | 96.6 | 97.0 | 97.3 | 96.8 | 98.1 | 99.3 | 99.3 |
| 1963. | 102.0 | 101.5 | 101.2 | 101.9 | 103.9 | 103.5 | .. | .. | .. | .. | .. | .. | .. |

## CHAPTER XX.-FOREIGN TRADE

## CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing $p .1$ 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 Sections 3 and 4 of Chapter XXII. Following Part I, which is a review of Canada's commodity trade during 1962-63, Part II gives detailed statistics of that trade. Part III 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 IV contains a review of the extent of travel between Canada and other countries in 1962 with estimates of the amount of money expended for this purpose. The Canadian balance of international payments and Canada's international investment position is covered in Chapter XXII.

## PART I.-CANADIAN MERCHANDISE EXPORTS AND IMPORTS IN 1962-63*

The year 1962 was one of continued buoyancy both in Canada and in most areas abroad; this was reflected in a further substantial growth in Canadian merchandise exports and imports. Exports rose for the eighth successive year, bringing the aggregate increase in value since 1954 to 62 p.c. The rise in value of exports in 1962 of 8 p.c. from $\$ 452,000,000$ to $\$ 6,348,000,000$ was a little smaller than the 9 -p.c. or $\$ 509,000,000$ increase in 1961 . Apart from the consequences of changes in international prices, exports were subject in both years to the lower foreign exchange value of the Canadian dollar; on a physical volume basis, the increases were about 4 p.c. and 9 p.c., respectively. The record of 1962 exports by principal commodity groupings reveals some diverse trends and varied motivating factors. In only a few instances, e.g., grains and uranium, were exports in 1962 substantially lower than in 1961. The decrease in grains was attributable to a drop in sales to Eastern Europe and, more generally, to smaller available supplies of coarse

[^286]grains. Uranium exports continued the decline that had been in progress for several years as a result of the stretch-out in the United States purchasing program. In a number of items, exports tended to be rather stagnant; newsprint exports to the United States and Britain showed little change while those to other overseas countries suffered a drop, and, in aggregate, base metals, chemicals and fertilizers remained about the same as in 1961.
1.-Canadian Merchandise Exports, by Main Commodities or Groupings, 1954 and 1960-62
(Millions of dollars)


On the other hand, exports of lumber and wood pulp, miscellaneous farm and fish products, iron ore, aluminum, oil and gas and manufactured goods all rose substantially. Lumber and wood pulp responded to improved conditions in the United States and iron ore in particular to the recovery in the scale of steel operations and the availability of new sources in Canada. Oil and gas exports, which advanced from $\$ 196,000,000$ in 1961 to $\$ 305,000,000$ in 1962 , reflected stronger U.S. market conditions, and the fact that this was the first full year of operation of new gas transmission facilities to the United States. While the lower foreign exchange value of the Canadian dollar undoubtedly created a favourable environment for prosecuting export opportunities, it seems likely that the main increases in exports of raw and semi-manufactured materials were attributable primarily to other factors, particularly in those large areas where prices are quoted in U.S. dollars. Yet, on the other hand, in the increase in manufactured and miscellaneous products from $\$ 719,000,000$ in 1961 to $\$ 902,000,000$ in 1962 , accounting for almost 40 p.c. of the total increase, the change in the exchange rate during the year plus previous reductions in the external value of the Canadian dollar provided an effective improvement in the Canadian competitive position in a wide range of goods. The increase in manufactured and miscellaneous goods in 1962, though distributed over a wide range of products, was most pronounced in aircraft and machinery and equipment.

Following the War, with heavy exports connected with postwar reconstruction, the share of Canada's exports going overseas was half or better. Later, throughout most of the 1950 's, the overseas portion fell to an average of around 40 p.c. In 1960 and 1961 it rose to 44 p.c. and 46 p.c., respectively, as a result of heavier shipments abroad of a number of items, particularly wheat. In 1962 exports to the United States rose by $\$ 530,000,000$ or by more than the over-all increase and, as a result, the overseas share fell back to around 41 p.c. This was attributable to the drop in wheat exports to Eastern Europe, as previously noted, and lower overseas exports of newsprint, primary iron and steel, aluminum and other base metals. Primarily, however, it was attributable to the fact that the strongest growth occurred in items such as oil and gas, iron ore, lumber and pulp and certain manufactured items, the natural markets for which are predominantly in the United States. Only in manufactured and miscellaneous goods were Britain's and other overseas markets strong. Exports to Japan fell off somewhat in 1962 but Japan remained Canada's third largest customer. Exports to Germany and Belgium were lower in 1962 but were offset by increases to Italy and the Netherlands. Elsewhere, lower exports to India, Pakistan and Hong Kong were counterbalanced by sharply higher exports to Australia.

The following charts indicate that, while exports showed an irregular but upward trend during 1962, imports moved in a much less consistent fashion when shown on a seasonally adjusted basis. They rose sharply and steadily during the first half of the year and fell off equally sharply and by a greater degree in the final months of the year. The increase of $\$ 487,000,000$ in 1962 was substantially greater than in 1961. Largely as a result of the drop in the foreign exchange value of the Canadian dollar, the 8-p.c. increase in value was only about 3 p.c. in terms of physical volume compared with 2 p.c. in 1961. While 1962 imports were almost 14 p.c. higher in value than in the previous peak year (1959), the increase in physical volume was scarcely 4 p.c.



From Table 2, which classifies imports on a functional basis, it may be seen that the increases in 1962 were well spread over industrial materials, investment goods and consumer goods.
2.-Imports into Canada classified by End-Use, 1960-62

| Item | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: |
| Fuels and lubricants. | 478 | 473 | 487 |
| Industrial Materials- |  |  |  |
| Textile and fur materials. | 353 | 378 | 422 |
| Metal materials... | 423 | 448 | 529 |
| Chemical materials. | 291 | 318 | 346 |
| Other. | 388 | 408 | 430 |
| Totals, Industrial Materials. | 1,455 | 1,552 | 1,727 |
| Investment Goods- |  |  |  |
| Machinery and parts. | 940 | 968 | 1,093 |
| Electrical machinery. | 233 | 234 | ${ }^{302}$ |
| Aircraft, transport equipment and parts. | 270 | 406 | 365 |
| Construction materials, structural steel and pipe. | 232 | 216 | 221 |
| Totals, Investment Goods. | 1,675 | 1,824 | 1,981 |
| Consumer Goods- |  |  |  |
| Foods, beverages and tobacco................ | 572 | 618 |  |
| Clothing, household textiles and leather goods......... | 151 | 149 439 | 120 |
| Passenger autos, engines and parts and finished vehicles.......... Household durables and semi-durables...................... | 488 223 | 439 227 | 539 203 |
| Other manufactured goods............. | 395 | 433 | 492 |
| Totals, Consumer Goods. | 1,829 | 1,866 | 2,004 |
| Special items... | 46 | 53 | 60 |
| Totals, Imports...... | 5,483 | 5,771 | 6,258 |

Imports of fuels and lubricants, although a little higher than in the two previous years, continued steady and well below previous peaks, reflecting the increasing share of consumption of domestic fuels in Canada. Greater reliance on expanded domestic sources is also in evidence in structural materials and pipe, in automobiles and in clothing, textiles and leather and consumer durables and semi-durables.

During 1962 imports were not only subject to the deterrent effect of the cumulative fall in the foreign exchange value of the Canadian dollar-some 11 p.c. from the levels of the late 1950's-but in June import surcharges were imposed at the time of the foreign exchange crisis, ranging from 5 p.c. to 15 p.c. and covering approximately half of total imports. Some surcharges covering imports valued at approximately $\$ 500,000,000$ in 1961 were removed in October and November 1962 and the remainder in February and March of 1963.

The increase in imports in 1962 also came mainly from the United States. Imports from Britain fell off slightly, while imports from other overseas countries, continuing their upward trend, rose by $\$ 107,000,000$. The sources of these increases were widely dispersed over all areas. The share of imports coming from the United States has fluctuated a little above or below 70 p.c. for many years. Since 1954 when it reached its highest point in the 1950 's (almost 73 p.c.), the United States proportion fell fractionally but consecutively to 67 p.c. in 1961. In 1962, however, the trend was reversed and it rose to 68.7 p.c. or about the same as in 1958.

The first merchandise export surplus since 1953 occurred in 1961 when it amounted to $\$ 125,000,000$; this was in marked contrast to the import surpluses of previous years iranging from $\$ 100,000,000$ to more than $\$ 700,000,000$. In 1962 the greater increase in mports over exports reduced the surplus to $\$ 90,000,000$.

The trade returns for the first eight months of 1963 show a continuation of the improvement in exports. Total exports were about 7 p.c. higher than in the same period of 1962. Imports, on the other hand, were about the same as in the corresponding period of the previous year, although the latter months were higher than the abnormally low first quarter. In the first half of 1963, details available for exports indicate the increase to have been predominantly in lumber, aluminum, copper and nickel and manufactured and miscellaneous goods.

From January to August, inclusive, the over-all trade balance shifted from a deficit of $\$ 98,000,000$ in 1962 to a surplus of $\$ 175,000,000$ in 1963 . The share of exports going to countries other than the United States recovered to 44 p.c. Imports from both Britain and the United States were lower than a year previously, while those from other countries were somewhat higher.

## PART II.-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 in the Dominion Bureau of Statistics from the various customs ports in Canada (except for exports of electric energy, which are based on data received from the National Energy Board). Record is kept of value and, whenever possible, of quantity. In considering these 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.

[^287]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.
"Imports" or "imports entered for consumption" include all goods that enter Canada and are cleared through customs for domestic sale or use, i.e., imports on which all duties are paid and which have passed from customs control into the possession of the importer. Goods re-exported without being cleared for domestic consumption are not included. It should be noted that the fact that imports have been "entered for consumption" does not necessarily imply that the goods will all be consumed in Canada but only that consumption can take place without further customs formalities.

The most important exclusions from export totals are: gold, goods shipped to $\mathrm{Ca}-$ nadian 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.

The most important exclusions from import totals are: gold, goods for use of the United States Armed Forces stationed at treaty bases in Canada, Canadian-owned 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' effects, private donations and gifts, tourist purchases exempt from duty, and goods imported for foreign armed forces or diplomats stationed in Canada.

From Jan. 1, 1960, a new category was established in both export and import statistics 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 do 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 Industrial Classification developed in 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, Beverages and Tobacco; Crude Materials, Inedible; Fabricated Materials, Inedible; End Products, Inedible; and Special Transactions-Trade.

As part of the change to the new classification, the commodity detail shown in export statistics has been modernized by eliminating statistics on many 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.

It is expected that a similar new commodity classification will be introduced for import statistics in 1964.

Valuation.-Exports are normally valued f.o.b. point of consignment from Canada, i.e., at the actual amount received or to be received by the exporter in Canadian dollars, exclusive of inland freight, ocean freight, insurance, handling and other charges.

Imports are normally valued f.o.b. point of consignment to Canada, i.e., excluding inland freight, ocean freight, insurance, handling and export or import duties. The statistical value of imports is usually the value as determined for customs duty purposes, which is basically the fair market value at which equivalent goods would be sold for home use in the country from which the imports were received; the customs value of imports usually corresponds to the invoice value of the goods. From Jan. 1, 1959, the statistical value of imports on which dumping duty has been collected is considered to be the value of the goods as declared by the importer, i.e., the value for duty less the amount of the dumping duty. This change was introduced to conform with the principle that trade statistics should show, whenever possible, the actual amount paid for imports; previously the statistical value of such imports was considered to be the value for duty.

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, in force since 1946, 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, which formerly related to Commonwealth countries only, now include trade with other countries entitled to Preferential rates of duty (the Republic of Ireland and the Republic of South Africa). These totals are now described as "Commonwealth and Preferential".

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 geographical classification of trade, 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 6, 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), 1948-62

Nore.-Figures have been revised to cover the adjustment for "Special Transactions-Non-Trade"; see p. 912.

| Year | Exports |  |  | Imports |  |  | Balance of Trade: Excess of Exports ( + ) Imports (-) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Domestic | Re-exports | Total | Dutiable | Free | Total |  |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| 1948. | 3,052,090 | 34,441 | 3,086,531 | 1,382,203 | 1,236,074 | 2,618,276 | + 468,254 |
| 1949 | 2,974,969 | 29,428 | 3,004, 397 | 1,444,124 | 1,269, 902 | 2,714,025 | + 290,372 |
| 1950. | 3,104,016 | 38,620 | 3,142,636 | 1,621,534 | 1,503,697 | 3,125, 231 | + 17,406 |
| 1951. | 3,897,082 | 48, 847 | 3,945,929 | 2,174,304 | 1,830,635 | 4,004,939 | - 59,011 |
| 1952. | 4,282,361 | 54,814 | 4,337,175 | 2,162,882 | 1,753,535 | 3,916,418 | + 420,757 |
| 1953. | 4,097,111 | 55,158 | 4,152,269 | 2,417,960 | 1,829,848 | 4,247, 808 | - 95,539 |
| 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 | 4,833,777 | 3,292,516 | 2,254, 435 | 5,546, 951 | - 713,175 |
| 1957. | 4,788,880 | 95,261 | 4,884,141 | 3,223,197 | 2,250,149 | 5,473,346 | - 589,205 |
| 1958. | 4,791,436 | 102,907 | 4,894,343 | 2,952,707 | 2,097,785 | 5,050,492 | - 156,150 |
| 1959. | 5,021,672 | 118,628 | 5,140,300 | 3,143,065 | 2,365,856 | 5,508,921 | - 368,621 |
| 1960. | 5,255,575 | 131,217 | 5,386,792 | 3,048,583 | 2,434,112 | 5,482,695 | - 95,003 |
| 1961 r | 5,754,986 | 140,229 | 5,895,215 | 3,115,408 | 2,653,170 | 5,768,578 | +126,637 |
| 1962. | 6,178,523 | 169,190 | 6,347,713 | 3,479,930 | 2,777,884 | 6,257,814 | + 89,899 |

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 physical 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, 1955-62

Nore.-Since Mar. 21, 1956, mines not receiving aid under the Emergency Gold Mining Assistance Act have been allowed to sell their gold to private residents and non-residents, either for export or for safe-keeping in Canada. Such sales, commencing in April 1956, are included in the figures of new gold production available for export.
(Millions of dollars)

| Month | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| January. | 11.5 | 12.5 | 13.6 | 14.7 | 11.7 | 14.5 | 14.1 | 9.8 |
| February | 14.7 | 12.7 | 12.4 | 17.7 | 16.1 | 15.0 | 14.2 | 18.1 |
| March. | 12.2 | 12.4 | 11.7 | 11.1 | 9.8 | 14.3 | 12.8 | 14.6 |
| April. | 10.9 | 12.3 | 10.7 | 10.7 | 14.1 | 9.4 | 13.3 | 10.3 |
| May. | 15.0 | 13.4 | 15.1 | 12.9 | 12.9 | 12.4 | 15.2 13.9 | 17.6 13.6 |
| June.. | 13.3 | 12.8 108 | 5.0 12.7 | 14.7 13.6 | 13.8 11.4 | 13.3 11.7 | 13.9 12.7 | 13.6 11.5 |
| July.... | 11.9 13.1 | 10.8 14.0 | 12.7 3.4 | 13.6 11.4 | 11.4 11.1 | 114.4 | 14.8 | 16.2 |
| Septembe | 12.2 | 12.1 | 9.9 | 12.6 | 10.3 | 15.7 | 13.1 | 11.6 |
| October. | 11.7 | 12.1 | 16.0 | 13.9 | 9.4 | 12.3 | $11.1{ }^{\text {r }}$ | 13.6 |
| November | 15.0 | 12.0 | 16.1 | 11.4 | 12.6 | 11.7 | 16.3 10.7 | 16.7 11.7 |
| December. | 13.4 | 10.1 | 17.1 | 12.4 | 15.1 | 16.8 | 10.7 | 11.7 |
| Totals. | 154.9 | 147.2 | 143.7 | 157.1 | 148.3 | 161.5 | 162.2 ${ }^{\text {r }}$ | 165.0 |

## 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, 1946-62

| Item and Year | Britain |  | Other Commonwealth and Preferential Countries |  | United States ${ }^{1}$ |  | Other Countries |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Value | $\begin{gathered} \text { P.C. } \\ \text { of } \\ \text { Total } \end{gathered}$ | 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 | P.C. <br> of <br> Total |
|  | \$'000 |  | \$'000 |  | \$'000 |  | \$'000 |  |
| Domestic Exports |  |  |  |  |  |  |  |  |
| 1946.................. | 594,138 | 26.1 | 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.. | 683,249 | 22.4 | 337,880 | 11.1 | 1,498,552 | 49.1 | 532,409 | 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 | 417,763 | 13.4 |
| 1951. | 630,124 | 16.2 | 260,889 | 6.7 | 2,296,235 | 58.9 | 709,834 | 18.2 |
| 1952. | 744,461 | 17.4 | 283,809 | 6.6 | 2,302,673 | 53.8 | 951,418 | 22.2 |
| 1953. | 662,785 | 16.2 | 244,745 | 6.0 | 2,413,318 | 58.9 | 776,263 | 18.9 |
| 1954. | 651,033 | 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 | 59.8 | 694,426 | 16.3 |
| 1956.. | 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 | 2,846,646 | 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 | 17.3 |
| 1960.. | 915,290 | 17.4 | 333,815 | 6.4 | 2,932,171 | 55.8 | 1,074,300 r | 20.4 |
| 1961 r... | 909,344 | 15.8 | 328,854 | 5.7 | 3,107,176 | 54.0 | 1,409,612 | 24.5 |
| 1962. | 909,041 | 14.7 | 331,004 | 5.4 | 3,608,439 | 58.4 | 1,330,040 | 21.5 |
| Imports |  |  |  |  |  |  |  |  |
| 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 |
| 1949. | 302,420 | 11.1 | 186,306 | 6.9 | 1,915,227 | 70.6 | 310,072 | 11.4 |
| 1950. | 400,811 | 12.8 | 241,124 | 7.7 | 2,089,531 | 66.9 | 393,765 | 12.6 |
| 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 | 16.9 |
| 1961 r.. | 618,221 | 10.7 | 292,155 | 5.1 | 3,863,968 | 67.0 | 994,233 | 17.2 |
| 1962. | 563,062 | 9.0 | 318,501 | 5.1 | 4,299,539 | 68.7 | 1,076,711 | 17.2 |

## 4.-Trade of Canada, by Leading Countries, 1960-62

| Rank in- |  |  | Item and Country | 1960 | 1961 r | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1960 | $1961{ }^{\text {r }}$ | 1962 |  |  |  |  |
|  |  |  | Domestic Exports | \$'000 | \$'000 | \$'000 |
| 1 | 1 | 1 | United States..................................... | 2,932,171 | 3,107,176 | 3,608,439 |
| 2 | 2 | 2 | Britain. | 915,290 | -909, 344 | ,909,041 |
| 3 | 3 | 3 | Japan.. | 178, 859 | 231,574 | 214,535 |
| 4 | 4 | 4 | Germany, Federal Republic | 165,597 | 188,694 | 177,688 |
| 31 | 5 | 5 | China, Communist. ................................... | 8,737 | 125,448 | 147,438 |
| 5 | ${ }^{6}$ | 8 | Australia............................................. | 98,862 | 78,628 | 104,965 |
| 9 8 | 110 | 7 8 | Netherlands............................................... | 62,554 68,393 | 61,297 | 76,940 74,521 |
| 10 | 9 | 8 | Italy.... | 68,393 61,595 | 67,688 69,744 | 74,521 69,054 |
| 7 | 7 | 10 | Belgium and Luxembourg | 69,131 | 76,055 | 68, 169 |
| ${ }^{6}$ | 8 | 11 | France. | 72,907 | 71,923 | 57,561 |
| 14 | 16 | 12 | Venezuela | 35,345 | 34,978 | 42,328 |
| 12 | 13 | 13 | Mexico. | 38,023 | 38,529 | 41,267 |
| 11 | 14 | 14 | Republic of South Africa | 52,655 | 37,819 | 37,525 |
| 22 | 15 | 15 | Poland.. | 16,665 | 36,819 | 37,391 |
| 13 | 12 | 16 | India. | 36,814 | 43,330 | 29,633 |
| 19 | 21 | 17 | Brazil. | 19,755 | 30,076 | 28,481 |
| 16 | 18 | 18 | New Zealand | 23,858 | 31,125 | 26,784 |
| 15 | 23 | 19 | Switzerland | 26,404 | 22,422 | 23,891 |
| 20 | 20 | 20 | Argentina. | 19,364 | 30,893 | 22,546 |
| 21 | 26 | 21 | Jamaica.. | 18,056 | 19,077 | 21,891 |
| 23 | 25 | 22 | Colombia. | 16,590 | 19,525 | 19,887 |
| 24 | 30 | 23 | Philippines. | 14,809 | 15,645 | 18,545 |
| 18 | 29 | 24 | Sweden... | 20,906 | 17,654 | 18,230 |
| 29 | 33 | 25 | Spain. | 10,243 | 12,803 | 15,416 |
| 26 | 27 | 26 | Trinidad and Tobago | 12,971 | 18,398 | 14,817 |
| 17 | 24 | 27 | Hong Kong...... | 21,665 | 19,604 | 14,283 |
| 37 | 36 | 28 | Chile....... | 6,575 | 8,225 | 13,278 |
| 28 | 32 | 29 | Puerto Rico | 11,172 | 13,109 | 12,711 |
| 25 | 19 | 30 | Cuba. <br> Totals, 30 Leading Countries. <br> Grand Totals, Domestic Exports <br> Imports | 13,038 | 31,104 | 10,878 |
|  |  |  |  | 5,049,004 | 5,468,706 | 5,958,133 |
|  |  |  |  | 5,255,575 | 5,754,986 | 6,178,523 |
|  |  |  |  |  |  |  |
| 1 | 1 | 1 | United States | 3,686,625 | 3,863,968 | 4,299,539 |
| 2 | 2 | 2 | Britain.............................................. | 588,932 | 618,221 | 563,062 |
| 3 | 3 | 3 | Venezuela.................................................... | 195, 189 | 216,640 | 224,275 |
| 4 | 4 | 4 | Germany, Federal Republic........................... | 126,988 | 136,530 | 141,199 |
| 5 | 5 |  | Japan.............................................. | 110, 382 | 116,607 |  |
| 6 | 6 7 | 6 7 | France................................................ | 50,121 42,843 | 54,280 49,140 | 56,160 51,859 |
| 8 | 8 | 8 | Belgium and Luxembo | 41,401 | 44,780 | 48,682 |
| 11 | 11 | 8 | Australia... | 35,508 | 36,649 | 45,216 |
| 15 | 13 | 10 | India.................................................. | 29,352 | 33,465 | 43,479 |
| 10 | 9 | 11 | Saudi Arabia. | 37,402 | 41,393 | 40, 551 |
| 9 | 10 | 12 | Jamaica. . | 37,688 | 38,511 | 39,721 |
| 13 | 12 | 13 | Netherlands. | 31,456 | 33,493 | 37,048 |
| 12 | 14 | 14 | Netherlands Antilles | 32,521 30,740 | 31,137 21,622 | 35,856 31,736 |
| 14 | 20 15 | 15 16 | Iran..................................................... | 30,740 24,883 | 21,622 29,081 | 31,736 31,600 |
| 18 | 16 | 17 | Switzerland ................................................ | 24,343 | 26,102 | 28,040 |
| 16 | 18 | 18 | Malaya and Singapore. ............................... | 28,120 | 23,597 | 27,740 |
| 21 | 17 | 19 | Sweden................................................ | 20,409 | 24,221 | 25,873 |
| 20 | 22 | 20 | Mexico. | 21,007 | 18,193 |  |
| 22 | 19 | $\stackrel{21}{21}$ | British Guiana....................................... | 18,921 | 23,030 | 23,375 18.889 |
| 24 | 25 27 | 22 | Hong Kong ....................................... | 15,534 11,482 | 14,143 12,202 | 18,889 |
| ${ }_{41}^{27}$ | 27 <br> 30 | 23 24 | Republic of South Africa.................................... <br> Norway | 11,482 4,248 | 12,202 8,965 | 16,952 16,109 |
| 41 26 | 30 26 | $\stackrel{24}{25}$ | Norway <br> Colombia. | 4,248 12,784 | 8,905 13,023 | 15,658 |
| 23 | 23 | 26 | Ceylon. | 15,556 | 16,516 | 14,763 |
| 25 | 24 | 27 | Trinidad and Tobago. | 14,512 | 14,375 | 14,100 |
| 30 | 28 | 28 | Denmark............. | 9,962 |  |  |
| 19 | 29 | 30 | New Zealan | 10,099 22,303 | 10,546 20,225 | 12,05 10,034 |
|  | 21 |  | Kuwait. | 22,303 |  |  |
|  |  |  | Totals, 30 Leading Countries | 5,331,309 | 5,602,305 | 6,076,602 |
|  |  |  | Grand Totals, Imports. . | 5,482,695 | 5,768,578 | 6,257,814 |

5.-Value of Domestic Exports, by Geographic Region and Country, 1955-62

| Region and Country | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 r | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | §'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Western E |  |  |  |  |  |  |  |  |
| Britain... | 767,642 | 811,113 | 720,898 | 771,576 | 785, 802 | 915,290 | 909,344 | 909,041 |
| Gibraltar | 282 | . 239 | ${ }^{272}$ | 8214 | ${ }^{182}$ | 7200 | , 291 | 149 |
| Ireland.... | 12,757 | 10,106 | 8,379 | 8,690 | 8,156 | 7,706 | 11,588 | 10,329 |
| Malta and Gozo | 3,926 | 4,056 | 2,743 | 1,506 | 2,142 | 2,299 | 2,924 | 2,217 |
| Austria. | 5,943 | 4,920 | 6,441 | 7,457 | 8,260 | 7,745 | 7,877 | 7,316 |
| Belgium and Luxembourg | 53,314 | 57,789 | 60,194 | 69,531 | 56,127 | 69,131 | 76,055 | 68,169 |
| Denmark. . . . . . . . . . . . | 3,109 | 3,467 | 3,487 | 4,859 | 5,449 | 4,978 | 4,813 | 6,087 |
| Finland | 1,707 | 1,931 | 909 | 2,312 | 2,739 | 4,355 | 6,085 | 5,240 |
| France. | 42,134 | 52,710 | 57,030 | 44,688 | 43,157 | 72,907 | 71,923 | 57,561 |
| Germany, Federal Republic | 90,526 | 133,847 | 151,508 | 201, 134 | 129,345 | 165,597 | 188,694 | 177,688 |
| Greece................... | 4,153 | 2,402 | 4,022 | 4,576 | 3,798 | 5,546 | 4,995 | 9,235 |
| Iceland | 504 | 284 | 268 | 310 | ${ }^{279}$ | 243 | 219 | ${ }^{287}$ |
| Italy. | 27,423 | 37,559 | 62,685 | 29,718 | 31,717 | 68,393 | 67,688 | 74,521 |
| Netherlan | 47,500 | 54,371 57,609 | 69,553 55,491 | 74,721 <br> 55 | 53,849 62,308 | 62,554 | 61,297 <br> 69 | 76,940 69,054 |
| Portug | - 2,813 | 1,894 | 2,788 | -5,553 | 3,251 | 3,336 | 4,718 | 2,563 |
| Spain | 4,139 | 5,013 | 5,875 | 6,675 | 6,168 | 10,243 | 12,803 | 15,416 |
| Sweden | 7,587 | 7,793 | 11,964 | 10,866 | 14,879 | 20,906 | 17,654 | 18,230 |
| Switzerlan | 25,493 | 33,294 | 24,894 | 29,243 | 25,728 | 26,404 | 22,422 | 23,891 |
| Totals, Commonwealth and Preferential Countries....... | 784,606 | 825,515 | 732,292 | 781,986 | 796,281 | 925,496 | 924,147 | 921,736 |
| Totals, Other Countries. . . . . . | 363,276 | 454,884 | 517,109 | 544,492 | 447,055 | 583,932 | 616,986 | 612,198 |
| Totals, Western Europe.. | 1,147,882 | 1,280,399 | 1,249,401 | 1,326,478 | 1,243,336 | 1,509,428 | 1,541,133 | 1,533,934 |
| Eastern Europe- |  |  |  |  |  |  |  |  |
| Albania.. | - | - | ${ }^{1} 110$ | 1 | $1{ }^{1}$ | 1 | 5,845 | 3,053 |
| Bulgaria. |  | 102 | 116 | 70 | 200 | 491 | 277 | 388 |
| Czechoslovakia | 1,044 | 24,540 | 1,401 | 1,342 | 4,937 | 6,767 | 32,654 | 3,522 |
| Germany, Eastern | 2,261 | 1,458 | 25 |  |  | 994 | 17,972 | 148 |
| Hungar | 164 | 1,907 | 289 | 384 | 1,115 | 931 | 564 | 350 |
| Poland. | 3,989 | 17,903 | 16,632 | 560 | 15,631 | 16,665 | 36,819 | 37,391 |
| Romania......................... | 396 | 123 | 429 | 1,171 | 1,157 | 1,326 | 1,037 | 514 |
| Union of Soviet Socialist Republics |  |  |  |  |  |  |  |  |
| Yugoslavia.. | , 348 | 206 | 10,69 | 198 | 2,577 | 3,249 | 2,135 | 999 |
| Totals, Eastern Europe. . | 10,860 | 70,766 | 29,727 | 22,587 | 38,255 | 38,658 | 121,579 | 49,662 |
| Middle East- |  |  |  |  |  |  |  |  |
|  | 2 | 2 | 2 | 2 | 2 | 112 | 111 | 21 |
| Cyprus. | 3 | 3 | 3 | 3 | 3 | 609 | 70 | 29 |
| Kuwait. | 2 | 2 | 2 | 2 | 2 | 1,091 | 941 | 1,040 |
| Qatar. | 16 | 8 | 1 | 1 | 7 | 55 | 72 | ${ }^{215}$ |
|  |  |  |  |  |  |  |  |  |
| Ethiopia | 55 | 101 | 117 | 77 | 72 | 220 | 120 | 105 |
| Iran. | 634 | 782 | 1,700 | 1,648 | 2,242 | 2,499 | 4,457 | 5,293 |
| Iraq. | 1,167 | 654 | 1,069 | 969 | 4,311 | 2,425 | 1,374 | 1,343 |
| Israel | 4,457 | 2,648 | 4,889 | 4,501 | 4,557 | 6,184 | 8,747 | 6,232 |
| Jordan. | 11 | 35 | 56 | 73 | 72 | 131 | 308 | 145 |
| Lebanon | 1,178 | 1,162 | 924 | 2,073 | 3,182 | 3,443 | 2,484 | 2,244 |
| Libyadi | 73 | 95 | 180 | 156 | -382 | 333 | 151 | 376 |
| Somalia | ${ }_{1}^{1,236}$ | 1,940 | 1,656 | 2,017 | 2,877 | 2,905 | 2,697 | 3,257 |
| Sudan. |  | 65 | 212 | 182 | 367 | 335 | 333 | 180 |
| Syria. | 1,043 | 716 | 798 | 765 | 1,067 | 674 | 364 | 561 |
| Turkey ........................ | 1,630 | 822 | 450 | 1,400 | 1,693 | 2,014 | 1,943 | 978 |
| United Arab Republic-Egypt. . | 1,261 | 2,499 | 1,197 | 1,077 | 1,601 | 2,010 | 3,025 | 2,230 |
| Totals, Commonwealth and Preferential Countries........ | 16 | 8 | 1 | 1 | 7 | 1,927 | 1,360 | 1,920 |
| Totals, Other Countries....... | 11,750 | 11,525 | 13,254 | 14,938 | 21,617 | 23,176 | 26,013 | 22,945 |
| - | 11,766 | 11,533 | 13,254 | 14,939 | 21,624 | 25,103 | 27,373 | 24,866 |

[^288]${ }^{3}$ Included with Malta and Gozo
5.-Value of Domestic Exports, by Geographic Region and Country, 1955-62-continued

| Region and Country | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 ${ }^{\text {r }}$ | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Other A |  |  |  |  |  |  |  |  |
| Ghana. | 1,451 523 | 1,479 383 | 1,244 | 1,272 | 3,784 | 3,879 936 | $\begin{array}{r}7,798 \\ \hline 586\end{array}$ | 8,400 680 |
| Mauritius and Dependenc |  | 108 | 145 | 107 | 68 | 77 | 95 | 94 |
| Nigeria.. | 852 | 723 | 1,492 | 308 | 938 | 2,305 | 3,272 | 6,997 |
| Republic of South Africa | 55,920 | 64,565 | 48.322 | 49,960 | 51,243 | 52,655 | 37,819 | 37,525 |
| Rhodesia and Nyasaland | 4,282 | 4,640 | 4,925 | 3,894 | 2,851 | 4,088 | 3,396 | 3,367 |
| Sierra Leone. | 598 | 614 | 490 | 501 | 725 | 641 | 810 | 1,200 |
| Tanganyika. |  |  |  |  |  | 143 | 173 | 228 |
| Uganda..... | ${ }^{1} 100$ |  | 36 |  |  | 86 | ${ }^{66}$ | 137 |
|  |  |  |  |  |  |  |  |  |
| Algeria. | 2 | 2 | 2 | 2 | 2 | 4,662 | 6,064 | 2,202 |
| Angola. | 3 | 3 | 3 | 3 | 8 | 67 | 160 | 44 |
| Congo. | 3,526 | 2,774 | 2,614 | 2,926 | 2,689 | 1,310 | 980 | 889 |
| French Equatorial Africa | 2 |  |  |  | 2 | 34 135 | ${ }_{73}^{57}$ | 98 880 |
| French West Africa. | ${ }_{1}^{2}, 221$ | ${ }_{1}^{2}, 060$ | 844 | 1,008 | 2,765 | 130 | 26 | 8 |
| Gabon.. |  |  |  |  |  | 2 | 19 | 61 |
| Guinea | 2 | 2 | 2 | 2 | 2 |  | 140 | 131 |
| Ivory Co |  |  |  | ${ }^{2}$ |  |  | 26 | 10 |
| Liberia. | 2,454 | 1,781 | 1,551 | 652 | 217 | 644 | 501 | 816 |
| Morocco. | 1,786 | 2,027 | 2,128 | 1,152 1,326 | 2,012 | 3,145 | 2,023 | 2,504 |
| Mozambique | 2,041 | 2,167 | 210 | , 320 | , 305 | 279 | 241 | 197 |
| Portuguese Africa................... |  | 15 15 | 15 |  |  | ${ }_{28}$ | 40 | 118 |
|  |  | 2 | 2 |  |  | 170 | 561 | 30 |
| Totals, Commonwealth and Preferential Countries. | 63,734 | 72,610 | 57,397 | 56,529 | 60,473 | 65,010 | 54,172 | 58,790 |
| Totals, Other Countries....... | 11,294 | 10,008 | 8,086 | 7,386 | 8,406 | 11,121 | 11,385 | 8,449 |
| Totals, Other Africa. . . . . . | 75,028 | 82,619 | 65,482 | 63,915 | 68,878 | 76,130 | 65,558 | 67,239 |
|  |  |  |  |  |  |  |  |  |
| Ceylon..... | 2,652 | 7,325 | 7,563 | 6, ${ }^{\text {628 }}$ | 11,192 | 21,665 | 19,604 | 14,283 |
| Hong Kong | 24,573 | 25,614 | 28,902 | 78,994 | 53,654 | 36,814 | 42,885 | 29,633 |
| Malaya and Singapore | 3,405 | 3,889 | 3,288 | 3,223 | 3,258 | 4,660 | 5,696 | 5,453 |
| Pakistan. . | 6,109 | 10,376 | 11,308 | 15,311 | 17,317 | 11,942 | 15,315 | 10,755 |
| British East Indies, | 52 | 127 | 185 | 112 | 5 | 360 | 457 | 435 |
| Afghanistan | 19 | 14 | 87 | 24 | 67 | 159 | 55 | 25 |
| Burma. | 479 | 285 | 239 | 944 | 817 | 806 | 1,405 | 1,303 |
| Cambodia and Laos |  |  |  |  |  | 8.737 | 125,448 | 147,438 |
| China, Communis | 1,016 | 2,427 | 1,390 | 7,809 | 1,720 | 8,710 | 125,448 | 14, ${ }^{1}$ |
| Indonesia |  | 127,804 | 139,082 | 104,853 | 139,724 | 178, 859 | 231,574 | 214,535 |
| Japan. | 90,817 6,977 | 127,804 | 139,082 6,970 | 104,853 3,682 | 13,000 | 3,916 | 2,067 | 1,492 |
| Korea. |  |  | 17,516 | 14,077 | 14,863 | 14,809 | 15,645 | 18,545 |
| Philippines | 18,175 | 18,036 | 1,461 | 341 | 358 | 93 | 59 |  |
| Portuguese Asia. | 174 | 454 | 461 | 341 |  | ${ }_{3}^{385}$ | -445 | 4,387 |
| Taiwan (Republic | 1,221 | 747 | 1,641 | 1,161 | 1,692 | 2,886 | 2,219 | 4, ${ }^{\text {, }}$ |
| Thailand.... | 2,336 | 1,933 | $\begin{array}{r}\text { 2,041 } \\ \hline 996\end{array}$ | 1,288 | 1,937 385 | 2,710 | ${ }^{2}, 206$ | - 298 |
| Viet Nam. | 327 | 534 | 996 | 249 | 385 |  |  |  |
| Totals, Commonwealth and Preferential Countries....... | 44,028 | 50,335 | 54,452 | 109,127 | 90,447 | 77,920 | 87,755 | 62,566 |
| Totals, Other Countries. . . . . . | 122,413 | 156,030 | 172,011 | 136,095 | 169,324 | 216,159 | 384,622 | 393,546 |
|  | 166,441 | 206,366 | 226,463 | 245,222 | 259,771 | 294,079 | 472,376 | 456,112 |
| Oceania- |  |  | 48,662 | $52,562$ | 3,929 | 98,862 | $\begin{array}{r} 78,628 \\ 607 \end{array}$ | 104,965 |
| Australia | 58,291 | 47,582 |  |  |  |  |  | 70526,784 |
|  | 22,248 | 17,896 | 16,842 | 15,008 | 13,306 | 23,858 | 31,125 |  |
| New Zealand <br> British Oceania, n.e.s. |  |  | -113 |  |  | ${ }_{324}$ | , 191 | 296 |
| French and Netherlands Oceania. |  | 479 | 386 |  |  | 313 | 303 | 66 |
| ${ }^{1}$ Included with Kenya prior to 1960. <br> 2 Included with French Africa, n.e.s. prior to 1961 <br> with Portuguese Africa, n.e.s. prior to 1960. <br> 4 Included with Viet Nam prior to 1960. <br> Portuguese Asia prior to 1960. <br> ${ }^{6}$ Included with India. |  |  |  |  |  |  | ${ }^{3}$ Included <br> ${ }^{5}$ Included with |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

5.-Value of Domestic Exports, by Geographic Region and Country, 1955-62-concluded

| Region and Country | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 r | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Oceania-concluded <br> United States Oceania............ <br> Totals, Commonwealth and Preferential Countries........ <br> Totals, Other Countries. ...... Totals, Oceania. $\qquad$ | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
|  | 333 | 212 | 208 | 38 | 167 | 640 | 1,293 | 3,08 |
|  | 81,678 | 66,717 | 66,195 | 68,483 | 68,027 | 123,852 | 110,551 | 132,75 |
|  | 808 | 69 | 59 | 40 | 338 | 95 | 1,596 | 3 , |
|  | 82,486 | 67,408 | 66,789 | 68,89 | 68,36 | 124,80 | 112,147 | 136,20 |
| South AmericaBritish Guiana. | 908 | 4,298 | 4,969 | 14 | 4,392 | 7,428 | 5,272 | 10 |
| Falkland Islands | 274 | 11 | 3 | 53 | 216 | 169 | 24 |  |
| Argent | 6,794 | 6,130 | 14,158 | 6,428 | 7,002 | 19,364 | 30,893 | 22,546 |
| Bolivi | 1,065 | 1,480 | 934 | 414 | 324 | 323 | 353 | 363 |
| Brazil | 11,377 | 12,945 | 25,686 | 21,088 | 14,148 | 19,755 | 30,076 | 28,481 |
| Chile | 3,804 | 4,394 | 4,342 | 4,566 | 6,226 | 6,575 | 8,225 | 13,278 |
| Colom | 22,641 | 17,552 | 14,587 | 13,813 | 17,668 | 16,590 | 19,525 | 19,887 |
| Ecuador | 4,950 | 4,336 | 2,782 | 3,185 | 3,864 | 3,913 | 3,922 | 3,777 |
| French G | 2 |  |  |  |  | 2 | 15 |  |
| Paragua | 90 | 237 | 171 | 183 | 114 | 120 | 69 |  |
| Peru | 5,956 | 11, 265 | 10,031 | 11,441 | 11,632 | 8,891 | 8,188 | 8,140 |
| Surina | 971 | 1,025 | 829 | 853 | 696 | 883 | 1,224 | 866 |
| Urugus | 2,341 | 2,752 | 3,777 | 938 | 1,656 | 2,423 | 3,039 | 3,151 |
| Venezu | 30,672 | 34,203 | 39,661 | 43,480 | 45,833 | 35,345 | 34,978 | 42,328 |
| Totals, Commonwealth and Preferential Countries....... | 3,182 | 4,309 | 4,971 | 4,067 | 4,608 | 7,597 | 5,296 | 5,115 |
| Totals, Other Countries....... <br> Totals, South America | 90, | 96,31 | 116,9 | 106,3 | 109,1 | 114,18 | 140,50 | 42,86 |
|  | 93,845 | 100,62 | 121,935 | 110,45 | 113,77 | 121,78 | 145,803 | 147,978 |
| Central America and Antilles- |  |  |  |  |  |  |  |  |
| Bahamas | 2,086 | 2,218 | 2,487 | 2,541 | 3,083 | 3,357 | 3,798 | 5,010 |
| Barbados | 4,217 | 4,684 | 4,628 | 4,159 | 4,103 | 3,775 | 3,977 | 4,481 |
| Bermuda | 2,933 | 2,801 | 2,907 | 3,195 | 4,334 | 4,016 | 4,239 | 4,492 |
| British Hon | 303 | 243 | 276 | 229 | 289 | 409 | 600 | 835 |
| Jamaica. | 12,767 | 17,063 | 19,247 | 15,588 | 18,538 | 18,056 | 19,077 | 21,891 |
| Leeward and Windwa | 4,130 | 4,270 | 4,297 | 4,248 | 4,437 | 4,720 | 4,828 | 5,642 |
| Trinidad and Tobag | 12,585 | 12,456 | 11,763 | 11,548 | 12,636 | 12,971 | 18,398 | 14,817 |
| Costa R | 3,572 | 2,731 | 2,360 | 2,879 | 2,633 | 2,983 | 2,931 | 3,473 |
| Cuba | 13,883 | 15,284 | 16,846 | 17,549 | 15,222 | 13,038 | 31,104 | 10,878 |
| Dominican R | 4,153 | 4,965 | 4,991 | 5,335 | 5,137 | 5,062 | 4,469 | 8,488 |
| El Salvador | 1,793 | 2,293 | 2,412 | 2,146 | 2,567 | 2,390 | 2,436 | 3,354 |
| French West | 21 | 16 | 37 | 26 | 19 |  | 75 | 53 |
| Guatema | 2,507 | 2,997 | 3,190 | 3,645 | 2,627 | 2,106 | 2,188 | 2,705 |
| Haiti. | 2,406 | 2,888 | 2,191 | 2,079 | 1,319 | 1,529 | 1,543 | 1,277 |
| Hondurs | 580 | 856 | 1,055 | 1,201 | 946 | 1,416 | 1,061 | 899 |
| Mexico | 37,087 | 39,303 | 42,477 | 31,429 | 27,633 | 38,023 | 38,529 | 41,267 |
| Netherlan | 1,434 | 1,332 | 1,312 | 1,583 | 1,193 | 1,131 | 1,239 | 1,793 |
| Nicaragu | 1,759 | 1,396 | 1,534 | 1,886 | 1,515 | 1,319 | 1,448 | 2,135 |
| Panama. | 2,815 | 7,742 | 30,657 | 5,370 | 4,023 | 3,703 | 4,578 | 5,645 |
| Puerto Rico | 9,700 | 10,396 | 12,589 | 12,526 | 10,522 | 11,172 | 13,109 | 12,711 |
| United States Virgin Islands..... <br> Totals, Commonwealth and Preferential Countries... | 190 | 130 | 126 | 132 | 185 | 214 | 190 | 283 |
|  | 39,021 | 43,735 | 45,605 | 41,507 | 47,421 | 47,304 | 54,91 | 57,16 |
| Totals, Other Countries....... Totals, Central America and Antilles | 81,902 | 92,32 | 121,77 | 87,78 | 75,54 | 4,12 | 04,900 | 94,96 |
|  | 120,923 | 136,064 | 167,384 | 129,294 | 122,961 | 131,431 | 159,81 | 152,12 |
|  |  |  |  |  |  |  |  |  |
| St. Pierre and | 1,373 | 1,399 | 1,722 | 1,444 | 1,403 | 1,563 | 1,825 | 1,799 |
| United States ${ }^{2}$ | 2,547, 636 | 2,803,085 | 2,846,646 | 2,808,067 | 3,083, 151 | 2,932,171 | 3,107,176 | 3,608, 439 |
| Totals, North America. | 2,549,096 | 2,804,660 | 2,848,445 | 2,809,650 | 3,084,708 | 2,934,162 | 3,109,199 | 3,610,404 |
| Grand Totals, Commonwealth and Preferential Countries. . | 1,016,265 | 1,063,230 | 960,914 | 1,061,701 | 1,067,263 | 1,249,104 | 1,238,198 | 1,240,045 |
| Grand Totals, Other Countries | 3,242,063 | 3,697,212 | 3,827,966 | 3,729,735 | 3,954,409 | 4,006,470 | 4,516,788 | 4,938,479 |
| Grand Totals, All Countr | 4,258,328 | 4,760,442 | 4,788,880 | 4,791,436 | 5,021,672 | 5,255,575 | 5,754,986 | 6,178,523 |

[^289]6.-Value of Imports, by Geographic Region and Country, 1955-62

| Region and Country | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 r | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Western Europe- |  |  |  |  |  |  |  |  |
| Britain. | 393,117 | 476,371 | 507,320 | 518,505 | 588,573 | 588, 932 | 618,221 | 563,062 |
| Gibraltar | ${ }^{1} 324$ |  |  | 1.313 | 1 |  |  |  |
| Malta and Gozo | 43 | 39 | , 64 | -62 | , 174 | -22 | - 25 | 4,826 |
| Austria. | 2,547 | 3,724 | 4,239 | 4,640 | 5,707 | 6,605 | 6,636 | 7,971 |
| Belgium and Luxembourg | 28,854 | 52,379 | 43,681 | 35,759 | 44,786 | 41,401 | 44,780 | 48,682 |
| Denmark | 4,075 | 5,858 | 7,939 | 7,401 | 9,227 | 9,962 | 11,650 | 13,278 |
| Finland | 343 | 500 | 402 | 475 | 875 | 1,053 | 1,215 | 1,939 |
| France. | 24,364 | 31,719 | 34,987 | 40,007 | 56,940 | 50,121 | 54,280 | 56,160 |
| Germany, Federal Repub | 52,215 | 84,430 | 92,527 | 102,644 | 123,905 | 126,988 | 136, 530 | 141,199 |
| Greece.............. | 265 | 242 | ${ }_{399}$ | 316 | 310 | - 538 | - 545 | 1,094 |
| Iceland | 5 | 2 | 40 | 7 | 40 | 15 | 707 | 1,183 |
| Italy. | 18,307 | 24,644 | 32,536 | 32,150 | 37,656 | 42,843 | 49,140 | 51,859 |
| Netherla | 19,073 | 21,524 | 21,690 | 26,905 | 29,154 | 31,456 | 33,493 | 37,049 |
| Norway | 2,290 | 3,698 | 2,984 | 3,106 | 4,063 | 4,248 | 8,965 | 16,109 |
| Portugal | 2,130 | 2,404 | 2,750 | 3,045 | 3,116 | 3,208 | 4,917 | 5,998 |
| Spain. | 6,184 | 5,651 | 5,541 | 6,681 | 5,627 | 6,947 | 8,543 | 8,463 |
| Sweden | 11,996 | 17,135 | 15,339 | 13,939 | 18,077 | 20,409 | 24,221 | 25,873 |
| Switzerlan | 18,965 | 21,925 | 24,053 | 26,491 | 24,514 | 24,343 | 26,102 | 28,040 |
| Totals, Commonwealth and Preferential Countries....... | 393,485 | 476,781 | 508,505 | 519,881 | 590,748 | 591,054 | 622,053 | 567,924 |
| Totals, Other Countries....... | 191,613 | 275,836 | 289,106 | 303,566 | 363,996 | 370,138 | 411,722 | 444,899 |
| Totals, Western Europe.... | 585,098 | 752,617 | 797,611 | 823,446 | 954,744 | 961,191 | 1,033,775 | 1,012,823 |
| Eastern Europe- |  |  |  |  |  |  |  |  |
| Albania.. | 3 | 4 | - | - |  |  |  |  |
| Bulgaria......... | 2, 861 | - ${ }_{5}^{4}$ | $\stackrel{1}{5,013}$ | 4,908 | 6,440 | 6,654 ${ }^{6}$ | $\stackrel{24}{8,405}$ | 9,034 |
| Germany, Eastern | 572 | 779 | 707 | 948 | 901 | 877 | 970 | 881 |
| Hungary | 116 | 189 | 168 | 701 | 237 | 338 | 393 | 417 |
| Poland. | 579 | 2,159 | 1,050 | 1,131 | 1,643 | 1,871 | 3,194 | 4,790 |
| Romania. | - |  |  |  | 35 | 84 | 261 | 61 |
| Union of Soviet Socialist Republics | 619 | 1,001 | 2,789 | 1,676 | 2,278 | 3,210 | 2,746 | 1,777 |
| Yugoslavia....................... | 509 | 900 | 564 | 813 | 551 | 804 | 1,665 | 1,801 |
| Totals, Eastern Europe. . . | 5,259 | 10,683 | 10,292 | 10,185 | 12,090 | 13,844 | 17,659 | 18,793 |
| Middle East- |  |  |  |  |  |  |  |  |
| Cyprus | 3 | 3 | 3 | 3 | 3 | 180 | 194 | 151 |
| Kupait..... | 2 | 2 | 2 | 2 | 2 | 22,303 | 20,225 | 10,034 |
| Qatar.. |  |  |  |  |  | 8,434 | 8,724 | 6,273 |
| British Midde East, n.e.s. | 47 | 73 | 51 | 62 | 400 |  | 48 | 68 |
| Ethiopia | 88 | 120 | 61 | 18 | 44 | 43 | 4 | 5 |
| Iran. | 2,061 | 1,056 | 535 | 915 | 11,948 | 30,740 | 21,622 | 31,736 |
| Iraq | 1,298 | 919 | 429 | 1,556 | 1,107 | 722 | +846 | -704 |
| Israel. | 1,132 | 1,463 | 1,548 | 1,725 | 2,349 | 2,372 |  | 5,646 |
| Jordan., |  |  |  | 12 | 1 4 | ${ }_{3}^{1}$ | ${ }_{23}^{3}$ | 58 |
| Lebanon | 17,915 | 19,590 |  |  | $-{ }^{4}$ | $1{ }^{33}$ | $1{ }^{23}$ | 10 |
| Saudi Arabi | 6,983 | 24,709 | 34,315 | 68,021 | 70,725 | 37,402 | 41,393 | 40,551 |
| Somalia. |  | -97 | , | 1 | ${ }^{1} 438$ | 83 | ${ }^{1} 76$ |  |
| Sudan. | 97 | 97 | 45 | 80 | 438 | 83 | 76 | 455 |
| Syria | 1,058 | 1,350 | 238 | 200 | 183 | ${ }_{855}^{127}$ | 263 | 1,472 |
| Turkey ${ }_{\text {Unite }}$ Arab Republic- ${ }^{\text {Re........ }}$ |  | 686 145 |  | 491 179 | 886 200 |  | 474 | 1,301 |
| United Arab Republic-Egypt... | 266 | 145 | 229 | 179 | 200 | 846 | 47 |  |
| Totals, Commonwealth and Preferential Countries....... | 47 | 73 | 51 | 62 | 400 | 30,975 | 29,192 | 16,525 |
| Totals, Other Countries. | 31,639 | 50,137 | 38,232 | 73,198 | 87,887 | 73,224 | 68,668 | 81,044 |
| Totals, Middle East. | 31,686 | 50,210 | 38,284 | 73,261 | 88,286 | 104,200 | 97,861 | 97,569 |

1 Less than $\$ 500$.
prior to 1960 .
6.-Value of Imports, by Geographic Region and Country, 1955-62-continued

| Region and Country | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 r | $1962{ }^{*}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Other Africa- |  |  |  |  |  |  |  |  |
| Ghana........ | 3,773 | 4,062 | 5,989 | 2,122 | 4,103 | 3,127 | 4,691 | 7,036 |
| Kenya. | 13,146 | 7,270 | 4,970 | 5,057 | 4,261 | 2,561 | 3,629 | 3,157 |
| Mauritius and Dependencies |  | 7,758 | 10,278 | 5,918 | 7,584 | 2,100 | 5,600 | 5,215 |
| Nigeria. | 858 | 985 | 2,352 | 2,372 | 3,084 | 4,358 | 3,504 | 5,726 |
| Republic of South Africa | 6,152 | 8,321 | 6,777 | 7,914 | 6,564 | 11,482 | 12,202 | 16,952 |
| Rhodesia and Nyasaland | 469 | 715 | 1,080 | 1,373 | 966 | 981 | 1,318 | 3,272 |
| Sierra Leone |  |  |  | 2 | 1 | ${ }_{1}^{5}$ |  | 22 |
| Ugands... | 1 | 1 | 1 | 1 | 1 | 1,277 | 2,139 2,325 | 2,173 |
| British Africa, n.e.s | - | - | 2 | 2 | 2 | 5 | ${ }^{2} 5$ | 2, 7 |
| Algeria. | 3 | 8 | 8 | 8 | 8 | 161 | 162 | 509 |
| Angola. | 4 | 4 | 4 | 4 | 4 | 209 | 136 | 122 |
| Congo. | 2,673 | 2,744 | 3,337 | 1,125 | 2,258 | 1,781 | 1,314 | 1,320 |
| French Equatorial Africa |  |  |  |  |  | 185 | 27 | 23 |
| French West Africa.. | $3^{3}$ | ${ }^{3}$ | 3 | $\stackrel{3}{1}$ | $\stackrel{3}{3}$ | 270 | 1 |  |
| French Africa, n.e.s. | 3,280 | 2,095 | 2,225 | 1,749 | 2,183 | 33 | 29 | 17 |
| Gabon. |  |  |  |  |  | 3 | 658 | 1,123 |
| Guines. | 3 | 3 | 3 | 3 | 3 | 2,794 | 4,824 | ${ }^{1} 96$ |
| Ivory Cos | 3 |  |  | 3 |  | 3,19 | -788 | 244 |
| Liberis. | 214 | 440 | 7 | 147 | 39 | 8 | 144 | 40 |
| Moroceo. | 182 | 152 | 138 | 130 | 209 | 222 | 164 | 487 |
| Mozambique ..... | 128 | 370 | 39 | 24 | 18 | 1 | 30 | 139 |
| Portuguese Africa, n | 44 | 94 | 33 | 11 |  |  |  |  |
| Spanish Africa. . . |  |  |  |  | 38 | ${ }_{62}^{2}$ | $\begin{aligned} & 17 \\ & 32 \end{aligned}$ | 23 17 |
| Totals, Commonwealth and Preferential Countries....... | 24,405 | 29,130 | 31,456 | 24,759 | 26,563 | 27,729 | 35,469 | 45,772 |
| Totals, Other Countries. <br> Totals, Other Africa. | 6,562 | 5,920 | 5,799 | 3,195 | 4,715 | 5,728 | 8,327 | 4,962 |
|  | 30,967 | 35,050 | 37,254 | 27,954 | 31,278 | 33,456 | 43,796 | 50,734 |
| Other Asia- |  |  |  |  |  |  |  |  |
| Ceylon... | 15,573 | 16,540 | 14,910 | 12,863 | 15,133 | 15,556 | 16,516 | 14,763 |
| Hong Kong | 5,821 | 5,642 | 7,138 | 8,689 | 12,969 | 15,534 | 14,143 | 18,889 |
| India.. | 35,105 | 30,852 | 29,185 | 27,655 | 29,221 | 29,352 | 33,465 | 43,479 |
| Malaya and Singap | 28,790 | 28,544 | 27,313 | 19,863 | 28,644 | 28,120 | 23,597 | 27,740 |
| Pakistan. | 810 | 1,297 | 489 | 460 | 1,061 | 985 | 2,367 | 2,561 |
| British East Indies, n.e | 71 | 122 | 120 | 129 | 390 | 261 | 297 | 511 |
| Afghanistan. |  | - | - | - | - | - |  | - |
| Burma..... |  |  |  | 84 | 24 | 85 | 30 | 50 |
| Cambodia and Laos | 5 | 5 | 5 | 5 | 5 | 17 |  |  |
| Chins, Communi | 3,114 | 5,713 | 5,299 | 5,370 | 4,840 | 5,638 | 3,233 | 4,521 |
| Indonesia. | -998 | 1,141 | 951 | 211 | 147 | 529 | 290 | 173 |
| Japan. | 36,586 | 60,729 | 61,396 | 70,092 | 102,669 | 110,382 | 116,607 | 125,359 |
| Philippines | 2, ${ }^{461}$ | 2,451 |  | $\stackrel{21}{2,177}$ | 1,440 | ${ }_{1}^{404}$ | ${ }^{76}$ | 99 |
| Portuguese Asia | 2,027 | 2,451 | 3,957 | 2,177 | ${ }_{2}, 440$ | 1,966 | 1,517 | 1,447 |
| Taiwan (Republic of China) | 155 | 112 | 189 | 159 | 716 | 1,150 | 1,856 | 2,910 |
| Thailand.. | 1,100 | 1,062 | 609 | 643 | 649 | 842 | 1,882 | 1,031 |
| Viet Nam | 170 | 12 |  | 位 | 8 | 8 | 5 | 1,03 |
| Totals, Commonwealth and Preferential Countries....... | 86,170 | 82,997 | 79,155 | 69,659 | 87,418 | 89,807 | 90,384 | 107,943 |
| Totals, Other Countries <br> Totals, Other Asia | 44,620 | 71,223 | 72,448 | 78,762 | 110,728 | 121,020 | 124,202 | 135,673 |
|  | 130,790 | 154,220 | 151,603 | 148,422 | 198,146 | 210,827 | 214,586 | 243,616 |
| Oceanis- |  |  |  |  |  |  |  |  |
| Australia | 26,161 | 26,207 | 28,572 | 32,755 | 41,080 | 35,508 | 36,649 |  |
|  | 5,016 | 6,267 | 7,216 | 5,727 | 4,764 | 6,481 | 2,512 | 3,144 |
| New Zealand......... | $\underline{12,282}$ | 12, 265 | 11,707 | 11,540 | 8,594 | 10,099 | 10,546 | 12,005 |
| French and Netherlands Oceania. | - | - | 19 |  | 1 | - | 40 | - |

[^290]6.-Value of Imports, by Geographic Region and Country, 1955-62-concluded

| Region and Country | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | $1961{ }^{\text {r }}$ | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Oceania-concluded | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Totals, Commonwealth and Preferential Countries........ <br> Totals, Other Countries. <br> Totals, Oceania | - | 1 | - | - | 1 | 21 | 55 | 214 |
|  | 43,459 | 44,880 | 47,495 | 50,182 | 54,595 | 52,087 | 49,706 | 60,365 |
|  | - | 1 | 19. | 1 | 1 | 21 | 96 | 214 |
|  | 43,459 | 44,880 | 47,514 | 50,182 | 54,597 | 52,109 | 49,802 | 60,578 |
| South AmericaBritish Guiana. | 18,282 | 20,482 | 20,988 | 20,627 | 18,033 | 18,921 | 23,030 | 23,375 |
| Argentina | 4,380 | 4,525 | 4,679 | 5,357 | 3,380 | 3,611 | 3,399 | 5,649 |
| Bolivia | 15 |  | 139 | 132 | 166 | 443 | 883 | ,957 |
| Brazil | 30,692 | 34,807 | 35,276 | 27,419 | 28,479 | 24,883 | 29,081 | 31,600 |
| Chile | 248 | 1,701 | 1,597 | 823 | 870 | 747 | 1,217 | 1,117 |
| Colombi | 22,214 | 23,037 | 18,179 | 16,574 | 15,827 | 12,784 | 13,023 | 15,658 |
| Ecuador. | 5,187 | 4,496 | 4,427 | 4,962 | 7,623 | 11,018 | 7,682 | 8,611 |
| French G | -237 | 142 | 278 | 347 | 746 | 760 | -874 | - 378 |
| Peru. | 835 | 2,754 | 2,768 | 2,326 | 3,978 | 3,037 | 4,233 | 3,225 |
| Surinam | 3,642 | 3,925 | 3,899 | 2,270 | 2,872 | 4,156 | 3,482 | 4,067 |
| Uruguay | 481 | 1,156 | 808 | 820 | 657 | 987 | 1,834 | 793 |
| Venezuela | 187,226 | 208,346 | 248,069 | 209,538 | 204,582 | 195,189 | 216,640 | 224,275 |
| Totals, Commonwealth and Preferential Countries........ | 18,282 | 20,482 | 20,988 | 20,627 | 18,034 | 18,929 | 23,038 | 23,375 |
| Totals, Other | 255,158 | 284,975 | 320,119 | 270,568 | 269,180 | 257,615 | 282,349 | 296,329 |
| Totals, So | 273,439 | 305,458 | 341,106 | 291,194 | 287,213 | 276,544 | 305,387 | 319,703 |
| Central America and Antilles- |  |  |  |  |  |  |  |  |
| Bahamas | 8,263 | 197 4,610 | 145 7,602 | 146 3,735 | 233 4,709 | 2,614 2,417 | 484 4,980 | 217 3,170 |
| Bermuda | 114 | 118 | 116 | 276 | 1,291 | 701 | 224 | 136 |
| British Hon | 157 | 137 | 182 | 136 | , 92 | 91 | 701 | 629 |
| Jamaica. | 15,516 | 24,572 | 40,133 | 27,491 | 31,012 | 37,688 | 38,511 | 39,721 |
| Leeward and Windward Islands. | 2,453 | 2,191 | 2,387 | 1,761 | 1,989 | 1,496 | 1,261 | 1,686 |
| Trinidad and Tobago............ | 9,811 | 11,012 | 8,159 | 9,807 | 12,731 | 14,512 | 14,375 | 14,100 |
| Costa Rica | 5,927 | 3,890 | 8,602 | 7,127 | 4,810 | 4,345 | 4,227 | 6,259 |
| Cuba. | 9,989 | 12,257 | 13,840 | 18,836 | 12,011 | 7,243 | 5,034 | 2,803 |
| Dominican R | 1,522 | 1,345 | 1,268 | 2,659 | 1,634 | 1,586 | 1,269 | 1,912 |
| El Salvador. | 2,962 | 1,133 | 1,311 | 1,186 | 3,899 | 829 | 1,307 | 1,848 |
| French West In | +157 | ${ }_{1}^{1} 224$ | - ${ }^{1} 469$ |  | 2,718 ${ }^{7}$ | 28 3,256 | 426 2,536 | 1826 1,796 |
| Guatemala | 4,544 1,593 | 3,224 1,679 | 3,469 1,491 | 3,585 | 2,718 1,053 | 3,256 | 2,536 810 | 1,796 |
| Hondur | 1,666 | 7,079 | 4,575 | 4,903 | 2,905 | 3,352 | 7,391 | 7,617 |
| Mexico | 28,734 | 41,592 | 20,987 | 31,888 | 34,201 | 21,007 | 18,193 | 24,444 |
| Netherland | 30,699 | 38,103 | 39,259 | 39,453 | 47,120 | 32,521 | 31, 137 | 35,856 |
| Nicaragua. | 1,429 | -647 | , 555 | 2,657 | 306 | 170 | 208 | ${ }^{107}$ |
| Panama. | 9,028 | 7,580 | 7,193 | 7,478 | 8,889 | 6,066 | 6,168 | 8,321 <br> 713 |
| Puerto Rico.. <br> United States Virgin Islands | 1,089 | 1,048 | 969 | 1,433 44 | 1,780 32 | 2,904 32 | 2,359 | 2,713 |
| Totals, Commonwealth and Preferential Countries....... | 36,535 | 42,836 | 58,723 | 43,352 | 52,057 | 59,518 | 60,535 | 59,658 |
| Totals, Other Countri | 99,339 | 119,578 | 103,520 | 122,323 | 121, 365 | 84,322 | 81,067 | 94,569 |
| Totals, Central America and Antilles. | 135,874 | 162,414 | 162,244 | 165,675 | 173,422 | 143,839 | 141,603 | 154,227 |
| North AmericaGreenland St. Pierre and Miquelon........... United States ${ }^{2}$ | $\left\|\begin{array}{r} 38 \\ 3,331,143 \end{array}\right\|$ | 4,031, ${ }^{254}$ | \|r ${ }^{47}$ [887, 391 |  |  | $\begin{array}{r} 1 \\ 30 \\ 3,686,625 \\ \hline \end{array}$ | $\begin{array}{r}102 \\ 42 \\ 3,863,968 \\ \hline\end{array}$ | $\begin{array}{r} 111 \\ 118 \\ 4,299,539 \end{array}$ |
| Totals, North America | 3,331,181 | 4,031,419 | 3,887,437 | 3,460,174 | 3,709,145 | 3,686,685 | 3,864,111 | 4,299,769 |
| Grand Totals, Commonwealth and Preferential Countries. . | 602,382 | 697,179 | 746,373 | 728,521 | 829,814 | 870,099 | 910,377 | 881,563 |
| Grand Totals, Other Countries | 3,965,372 | 4,849,772 | 4,726,973 | 4,321,971 | 4,679,107 | 4,612,597 | 4,858,201 | 5,376,251 |
| Grand Totals, All Countries.. | 4,567,754 | 5,546,951 | 5,473,346 | 5,050,492 | 5,508,921 | 5,482,695 | 5,768,578 | 6,257,814 |

[^291]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 products. 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, 1960-62

| Region and Country | 1960 ${ }^{\text {r }}$ |  |  | 1961 r |  |  | 1962 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Dutiable | Free | Total | Dutiable | Free | Total | Dutiable | Free | Total |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Western Europe | 507,478 | 453,714 | 961,191 | 532,526 | 501,249 | 1,033,775 | 620,704 | 392,119 | 1,012,823 |
|  | 206,346 | 382,586 | 588,932 | 201,574 | 416,647 | 618,221 | 264,132 | 298,930 | 563,062 |
| Austria. | 6,253 | 352 | 6,605 | 6,242 | 393 | 6,636 | 7,243 | 729 | 7,971 |
| Belgium and Luxembourg. | 30,272 | 11,129 | 41,401 | 34,434 | 10,346 | 44.780 | 36,735 | 11,947 | 48,682 |
| Denmark............... | 7,303 | 2,658 | 9,962 | 8,341 | 3,306 | 11,650 | 9,241 | 4,038 | 13,278 |
| France. | 40,764 | 9,358 | 50,121 | 43,116 | 11,164 | 54,280 | 44,806 | 11,353 | 56,160 |
| Germany, Federal Republic. | 108, 818 | 18,170 | 126,988 | 115,632 | 20,898 | 136,530 | 120,197 | 21,003 | 141,199 |
| Italy.................... | 36, 882 | 5,961 | 42,843 | 42,632 | 6,509 | 49,140 | 46,227 | 5, 632 | 141,859 |
| Netherla | 24,180 | 7,276 | 31,456 | 25,557 | 7,936 | 33,493 | 27,336 | 9,713 | 37,049 |
| Norway | 2,757 | 1,491 | 4,248 | 3,340 | 5,625 | 8,965 | 5,002 | 11,107 | 16,109 |
| Spain. | 2,916 | 4,031 | 6,947 | 3,613 | 4,930 | 8,543 | 5,149 | 3,314 | 8,463 |
| Sweden | 15,930 | 4,479 | 20, 409 | 19,309 | 4,911 | 24,221 | 20,159 | 5,714 | 25,873 |
| Switzerland | 20,537 | 3,806 | 24, 343 | 21,179 | 4,923 | 26,102 | 22,635 | 5,406 | 28,040 |
| Eastern Europe. | 11,432 | 2,412 | 13,844 | 14,658 | 3,001 | 17,659 | 16,16? | 2,631 | 18,793 |
| Czechoslovakia | 6,453 | 201 | 6,654 | 7,929 | 477 | 8,405 | 8,419 | 614 | 9,033 |
| Poland | 1,806 | 65 | 1,871 | 2,745 | 450 | 3,194 | 4,387 | 402 | 4,790 |
| Middle East | 2,065 | 102,135 | 104,200 | 2,495 | 95,365 | 97,861 | 4,178 | 93,391 | 97,569 |
| Kuwait | 138 | 22,165 | 22,303 | 251 | 19,974 | 20,225 |  | 10,034 | 10,034 |
| Qatar. | - | 8,434 | 8,434 | - | 8,724 | 8,724 | - | 6,273 | 6,273 |
| Iran. | 149 | 30,591 | 30,740 | 156 | 21,465 | 21,622 | 128 | 31,608 | 31,736 |
| Israel. | 652 | 1,719 | 2,372 | 1,144 | 1,962 | 3,106 | 2,930 | 2,716 | 5,646 |
| Saudi | - | 37,402 | 37,402 |  | 41,393 | 41,393 |  | 40,551 | 40,551 |
| Other Africa | 11,723 | 21,733 | 33,456 | 16,24: | 27,549 | 43,796 | 20,163 | 30,571 | 50,734 |
| Ghana. | 2,113 | 1,014 | 3,127 | 3,206 | 1,485 | 4,691 | 3,020 | 4,017 | 7,036 |
| Nigeria.... | 2,333 | 2,025 | 4,358 | 998 | 2,506 | 3,504 | 2,444 | 3,282 | 5,726 |
| Africa. | 3,500 | 7,981 | 11,482 | 4,332 | 7,870 | 12,202 | 6,632 | 10,320 | 16,952 |
| Other Asla | 130,018 | 80,809 | 210,827 | 133,538 | 81,048 | 214,586 | 156,724 | 86,892 | 243,616 |
| Ceylon. | 725 | 14,831 | 15,556 | 513 | 16,003 | 16,516 | 6,611 | 14,152 | 14,763 |
| Hong Kong | 14,957 | 577 | 15,534 | 13,625 | 518 | 14,143 | 18,327 | 1,563 | 18,889 |
| India.................. | 7,126 | 22,225 | 29,352 | 7,429 | 26,035 | 33,465 | 16,483 | 26,996 | 43,479 |
| Malaya and Singapore.. | 1,393 | 26,727 | 28,120 | 1,570 | 22,027 | 23,597 | 1,507 | 26,233 | 27,740 |
| China, Communist. | 1,382 | 4,256 | 5,638 | 1,131 | 2,102 | 3,233 | 1,599 | 2,922 | 4,521 |
| Japan.. | 102,016 | 8,366 | 110,352 | 106,714 | 9,894 | 116,607 | 114, 035 | 11,324 | 125, 359 |
| Oceania | 29,790 | 22,318 | 52,109 | 27,782 | 22,019 | 49,302 | 39,335 | 21,243 | 60,578 |
| Australia | 18,804 | 16,704 | 35,508 | 20,379 | 16,269 | 36,649 | 30,769 | 14,447 | 45,216 |
| Fiji.......... | 6,475 |  | 6,481 | 2,506 | 5 | 2,512 | 3,132 | 12 | 3,144 |
| New Zealand. | 4,490 | 5,609 | 10,099 | 4,842 | 5,704 | 10,546 | 5,221 | 6,784 | 12,005 |
| South America | 69,834 | 206,710 | 276,544 | 75,605 | 229,781 | 305,387 | 68,754 | 250,949 |  |
| British Guiana | 8,667 | 10,254 | 18,921 | 9,835 | 13,194 | 23,030 | 7,637 | 15,738 | 23,375 |
| Brazil. | 17,792 | 7,091 | 24,883 | 19,547 | 9,534 | 29,081 | 20,330 | 11,269 | 31,600 |
| Colombia | 8,928 | 3,856 | 12,784 | 9,643 | 3,380 | 13,023 | 11,356 | 4,303 | 15,658 |
| Venezuela | 10,942 19,879 | -175,310 | 11,018 195 | 7,631 $\mathbf{2 3 , 9 6 0}$ | [ 5192 | 716,682 | 8,424 | -188 188 | 8,611 |

## 7.-Values of Dutiable and Free Imports, by Geographic Region and Leading Countries, 1960-62-concluded

| Region and Country | 1960 ${ }^{\text {r }}$ |  |  | 1961 r |  |  | 1962 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Dutiable | Free | Total | Dutiable | Free | Total | Dutiable | Free | Total |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Central America and |  |  |  |  |  |  |  |  |  |
| Jamaica.............. | 9,888 | 27,800 | 37,688 | 9,758 | 28,754 | 38,511 | 9,244 | 30,476 | 39,721 |
| Trinidad and Tobago.. | 7,298 | 7,213 | 14,512 | 7,199 | 7,175 | 14,375 | 5,519 | 8,581 | 14, 100 |
| Costa Rica........... | 4,179 | 166 | 4,345 | 4,090 | 137 | 4,227 | 6,206 | 54 | 6,259 |
| Honduras. | 3,082 | 270 | 3,352 | 7,233 | 158 | 7,391 | 7,488 | 129 | 7,617 |
| Mexico ............... | 8,006 | 13,001 | 21,007 | 7,233 | 10,960 | 18,193 | 9,097 | 15,347 | 24,444 |
| Netherlands Antilles... | 32,413 | 108 | 32,521 | 30,642 | 495 | 31,137 | 35,720 | 136 | 35,856 |
| Panama. | 5,988 | 78 | 6,066 | 6,150 | 18 | 6,168 | 8,290 | 31 | 8,321 |
| North America. . ......... <br> United States.......... <br> Totals, Commonwealth and Preferential Countries | 2,196,110 | 1,490,575 | 3,686,685 | 2,223,908 | 1,640,203 | 3,864,111 | 2,458,448 | 1,841,321 | 4,299,769 |
|  | 2,196,092 | 1,490,534 | 3,686,625 | 2,223,783 | 1,640,185 | 3,863,968 | 2,458,327 | 1,841,212 | 4,299,539 |
|  | 303,658 | 566,441 | 870,099 | 302,239 | 608,138 | 910,377 | 389,007 | 492,556 | 881,563 |
| Totals, Other Countries. | 2,744,926 | 1,867,671 | 4,612,597 | 2,813,169 | 2,045,032 | 4,858, 201 | 3,090,923 | 2,285,327 | 5,376,251 |
| Grand Totals, Imports. | 3,048,583 | 2,434,112 | 5,482,695 | 3,115,408 | 2,653,170 | 5,768,578 | 3,479,930 | 2,777,884 | 6,257,814 |

## Section 4.-Trade by Commodity

The tables in this Section provide detailed information on the composition of Canada's exports and imports, with commodities shown by sections or groups and individually.
8.-Exports classified by Section and Imports classified by Group, 1961 and 1962

Note.-For explanation of classifications, see p. 912.

| Section | Domestic Exports |  | Re-exports |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 1961 | 1962 | 1961 | 1962 |
|  | \$'000 | \$'000 | \$'000 | \$'000 |
| All Countries. | 5,754,986 | 6,178,523 | 140,229 | 169,190 |
| Live animals | 66,901 | 68,054 | 78 | ${ }_{5}^{187}$ |
| Food, feed, beverages and tobac | 1,197,803 | 1,172,135 | 5,194 | 5,815 |
| Crude materials, inedible. | 1,195,442 | 1,361,595 | 8,963 | 8,926 36019 |
| Fabricated materials, inedib | 2,777, 345 $\mathbf{5 0 5 , 5 9 1}$ | 2,907,126 | 21,775 99 | 36,019 113,568 |
| Special transactions-trade | 11,903 | 14,849 | 4,240 | 4,673 |
| Britain. | 909,344 | 909,041 | 11,869 | 10,902 |
| Live animals. | 184 | 105 |  |  |
| Food, feed, beverages and tobac | 238,240 | 270,282 | 164 | 442 |
| Crude materials, inedible | 204,539 | 172,050 | 673 1.044 | 1,056 |
| Fabricated materials, inedible | 440,073 | 435,774 30,624 | 1,044 9,676 | 9,085 |
| End products, inedible.... | 26,069 240 | $\begin{array}{r}30,624 \\ \hline 205\end{array}$ | $\begin{array}{r}1,676 \\ \\ \\ \hline 12\end{array}$ | ${ }_{35}$ |
| United States. | 3,107,176 | 3,608,439 | 107,342 | 136,226 |
| Live animals. | 61,060 | 64,422 | 73 |  |
| Food, feed, beverages and tobacco | 298, 121 | 305,780 | 4,226 | 4,434 7 |
| Crude materials, inedible........ | 694,914 | 884,041 | 7,554 | 7,399 |
| Fabricated materials, inedible | 1,760,533 |  |  | 87,695 |
| $\underset{\text { Special transactions-tra }}{\text { End }}$ | 283,707 8 8,841 | 375,905 10,243 | 73,285 3,831 | 4,371 |

${ }^{1}$ Less than $\$ 500$.
8.-Exports classified by Section and Imports classified by Group, 1961 and 1962-concluded

|  |  |
| :--- | :--- |

## 9.-Leading Domestic Exports, 1959-62

Note.-Commodities are arranged in order of value in 1962.

| Commodity | 1959 | 1960 | 1961 | 1962 | Percentage Change 1961 to 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$'000 |  |
| Newsprint paper | 722,271 | 757,930 | 761,313 | 753,060 | $-1.1$ |
| Wheat. | 441,830 | 410,453 | 663,191 | 601,518 | $-9.3$ |
| Lumber and timb | 323,717 | 346,300 | 354,866 | 396,747 | +11.8 |
| Wood pulp. | 311,253 | 325,122 | 346,661 | 369,902 | +6.7 |
| Nickel and products | 226, 857 | 251,248 | 341,934 | 322,485 | - 5.7 |
| Aluminum and produc | 232,426 | 269,420 | 250, 727 | 293,007 | +16.9 |
| Petroleum, crude and parti | 74,541 157,814 | 94,450 155,472 | 152,334 135,835 | 232,497 220 | +52.6 +62.3 |
| Copper and products | 166,067 | 223,916 | 201,803 | 210,854 | +4.5 |
| Radioactive ores and concentrates | 311,904 | 263,541 | 192,722 | 166,009 | -13.9 |
| Aircraft and parts....... | 50,229 | 50,172 | 80,126 | 146,917 | +83.4 |
| Asbestos, unmanufactured | 110,431 | 120,113 | 131,533 | 135,638 | + 3.1 |
| Machinery (non-farm) and parts | 48, 403 | 67,074 | 96,694 | 122,528 | +26.7 |
| Synthetic rubber and plostics | 78,262 | 79,220 | 80,397 | 84,885 | + 5.6 |
| shaped | 1 | 109,144 | 103,832 | 84,571 | -18.6 |
| Farm implements and machinery (except tractors) and parts. | 110,205 | 81,279 | 76,028 | 82,973 | $+9.1$ |
| Fish, fresh and frozen. | 66,523 | 68,833 | 72,528 | 78,288 | + 7.9 |
| Chemicals, organic and inorganic | 2 | 2 | 65,072 | 72,966 | +12.1 |
| Glectrical apparatus, , | 32,571 | 47,282 | 55,817 | 72,484 | +29.9 |
| Zinc and products... | 55,465 | 18,051 | + 51,689 | 72,423 | +73.7 +4.0 |
| Fertilizers and fertilizer materials | 49,390 | 52,801 | 53,554 | 60,250 | +12.5 |
| Wheat flour. | 64,903 | 62,239 | 61,076 | 57,043 | -6.6 |
| Cattle, chiefly for beef. . . . . . . . . . . . . . . . . . . . . . | 40,404 | 26,573 | 48,034 | 52,456 | +9.2 |

[^292][^293]9.-Leading Domestic Exports, 1959-62-concluded

| Commodity | 1959 | 1960 | 1961 | 1962 | Percentage Change 1961 to 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ 000 | \$ 000 | \$'000 | \$'000 |  |
| Plates, sheet and strip... . . . . . . . . . . . . . . . . . . . | 38,587 | 52,226 | 35,795 | 48,800 | +36.3 |
| Pigs, ingots, blooms and billets.................... | 32,622 | 53,349 | 52,232 | 45,878 | -12.2 |
| Plywoods and veneers. | 32,351 | 32,717 | 34,212 | 44,211 | +29.2 |
| Flaxseed.............. | 41,226 | 47,283 | 46,269 | 41,920 | -9.4 |
| Pulpwood. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 29,737 | 31,186 | 33,811 | 35,732 | +5.7 |
| Tobacco, unmanufactured........................... | 25,140 | 25,327 | 27,617 | 34,624 | +25.4 |
| Barley.... . . . . . . . . | 66,310 | 51,441 | 48,966 | 29,927 | -38.9 |
| Meats, fresh and frozen. | 30,127 | 26,600 | 29,168 | 28,059 | -3.8 |
| Abrasives, artificial, crude. . . . . . . . . . . . . . . . . . . . | 27,737 | 31,736 | 27,657 | 27,596 | - 0.2 |
| Molluscs and crustaceans. . . . . . . . . . . . . . . . . . . . . | 21,231 | 23,268 | 24,852 | 27,458 | +10.5 |
| Lead and products. . . . . . . . . . . . . . . . . . . . . . . . . | 25,531 | 26,140 | 27,830 | 26,525 | $-4.7$ |
| Platinum metals, unmanufactured.................. | 12,554 | 16,105 | 26,746 | 25,735 | -3.8 |
| Fur skins, undressed.................................... | 24,128 | 23,161 | 23,949 | 25,546 | +6.7 |
| Shingles and shakes. | 21,406 | 20,968 | 20,779 | 24,172 | +16.3 |
| Fish, cured........... | 21,791 | 22,153 | 20,678 | 21,346 | +16.3 +3.2 |
| Automobiles, passenger............................. | 16,316 | 24,261 | 16,748 | 21,233 | +26.8 |

10.-Leading Imports, 1959-62

Note.-Commodities are arranged in order of value in 1962.

| Commodity | 1959 | 1960 | 1961 | 1962 | Percentage Change 1961 to 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ 000 | \$'000 | \$'000 | \$'000 |  |
| Machinery (non-farm) and parts. | 585, 235 | 579,801 | 611,320 | 676,077 | $+10.6$ |
| Automobile parts (except engines) | 288,596 | 296,571 | 304,487 | 392,687 | $+29.0$ |
| Electrical apparatus, n.e.s.... | 269,402 | 265,260 | 257,239 | 325,316 | $+26.5$ |
| Petroleum, crude and partly refined | 277,495 | 280,071 | 291,170 | 304,898 | $+4.7$ |
| Aircraft and parts.................. | 114,025 | 167,009 | 312,552 | 259,251 | -17.1 |
| Automobiles, passenge | 199,601 | 220, 144 | 157,003 | 153,679 | -2.1 |
| Tractors and parts.... | 172,069 | 131,541 | 136,014 | 140,287 | +3.1 |
| Plastics and products | 90,092 | 97,650 | 105,417 | 119,708 | +13.6 |
| Farm implements and machinery (except tractors) and parts. | 101,752 | 97,118 | 95,680 | 113,451 | $+18.6$ |
| Engines, internal combustion, and parts, n.e.s.... | 87,446 | 81,594 | 80,040 | 113,206 | +41.4 |
| Parcels of small value.......................... | 54,514 | 53,764 | 55,094 | 85,504 | +55.2 |
| Apparel and apparel accessories...................... | 71,573 | 72,019 | 75,962 | 71,728 | $-5.6$ |
| Cotton fabrics..... . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 70,058 | 75,150 | 75,896 | 71,208 | $-6.2$ |
| Coal, bituminous. | 65,115 | 61,821 | 58,777 | 62,461 | $+6.3$ |
| Paper and products, n.e | 47,420 | 49,009 | 53,949 | 59,202 | + 9.7 |
| Fuel oils.......... | 77,903 | 66,853 | 59,789 | 59,142 | $-1.1$ |
| Plates, sheet and strip | 59,667 | 56,667 | 53,275 | 57,898 | +8.7 |
| Sugar, unrefined....... | 56,810 | 50,677 | 52,729 | 56,926 | +8.0 +187 |
| Iron ore. . . . . . . . | 27,129 | 48,370 | 47, 433 | 56,324 | +18.7 +6.7 |
|  | 50,326 | 47,314 | 52,184 | 55,655 | +6.7 |
| Bauxite and alumina for aluminum................ | 31,345 | 39,529 | 52,775 | 55,525 | +5.2 |
| Vegetables, fresh. | 43,285 | 49,326 | 47,826 | 55,455 | +16.0 |
| Cotton, raw... . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 43,079 | 43,367 | 47,313 | 54,333 | +14.8 |
| Books, printed. | 39,458 | 43,391 | 48,794 | 53,042 | +8.7 +7.3 |
| Pipes, tubes and fittings. | 55,305 | 48,405 | 46,092 | 49,458 | + 7.3 |
| Medical, optical and dental goods, n.e.s............ | 34,706 | 37,133 | 41, 201 | 45,775 | +11.1 +4.4 |
| Principal chemicals (except acids), n.e.s. . . . . . . . | 42,617 | 43,934 | 43,770 | 45,698 | +4.4 +3.4 |
| Newspapers, magazines and advertising matter... | 38,092 | 39,224 | 43,937 | 45,449 44,760 | +3.4 +12.5 |
| Logs, timber and lumber ........................ | 44,955 | 39,603 | 39,804 35,007 | 44,760 44,087 | +12.5 +25.9 |
| Rubber, crude and semi-fabricated................ | 52,063 36,517 | 42,587 34,279 | 35,007 37,911 | 44,087 43,608 | +25.9 +15.0 |
| Tools. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 36,517 14,730 | 34,279 17,609 | 37,911 27,403 | 43,608 43,503 | +58.8 +58.8 |
| Medicinal and pharmaceutical products | 32, 824 | 32,947 | 41,349 | 39,306 | $-4.9$ |
| Wool fabrics........................... | 35,668 | 35,327 | 36,339 | 38,010 | $+4.6$ |
|  | 28,058 | 32,204 | 30,261 | 37,340 | +23.4 |
| Citrus fruits, fresh | 35,316 | 36,528 | 36,839 | 36,989 | +0.4 |
| Glass, cut, pressed or blown | 24,772 | 25,366 | 31,608 | 35,268 | +11.6 +17.2 |
| Synthetic fabrics....... | 27,927 | 27, 455 | 29,326 | 34,374 34,167 | +17.2 +13.5 |
| Canadian goods returned......................... | 10,337 | 24,191 | 30,116 | 34,167 | +1.0 +2.0 |
| Cooking and heating apparatus and parts......... | 39,426 | 33,101 | 31,424 | 32,038 | + 2.0 |

Detailed Exports and Imports.-Detailed statistics of all commodities of any importance exported from Canada to all countries, to Britain and to the United States during the years 1961 and 1962 are given in Table 11; corresponding statistics for imports into Canada appear in Table 12. An explanation of the different classifications used in these tables is given on p. 912.
11.-Domestic Exports from Canada to All Countries, to Britain and to the United States, by Section and Commodity, 1961 and 1962

| Section and Commodity | All Countries |  | Britain |  | United States |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1961 | 1962 | 1961 | 1962 | 1961 | 1962 |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Live Animals. | 66,901 | 68,054 | 184 | 105 | 61,060 | 64,422 |
| Food, Feed, Beverages and Tobacco. | 1,197,803 | 1,172,135 | 238,240 | 270,282 | 298,121 | 305,780 |
| Meat, fresh, chilled or frozen. | 29,168 | 28,059 | 1,699 | 1,601 | 25,940 | 24,565 |
| Meat, other and meat preparations | 13,730 | 14,722 | , 44 | 159 | 7,373 | 7,422 |
| Fish, fresh, chilled or frozen | 72,528 | 78,288 | 3,007 | 2,208 | 67,974 | 73,688 |
| Fish, preserved except canned | 20,678 | 21,346 | 19 | 3 | 5,332 | 5,875 |
| Fish, canned | 17,453 | 19,276 | 7,829 | 9,300 | 1,477 | 1,487 |
| Shell fish | 24,852 | 27,458 | 438 | 620 | 23,575 | 25,707 |
| Dairy products, eggs and hon | 26,088 | 23,311 | 6,431 | 8,960 | 1,561 | 884 |
| Barley. | 48,966 | 29,927 | 4,775 | 11,895 | 15,418 | 4,851 |
| Wheat. | 663,191 | 601,518 | 140,533 | 140, 134 | 15,115 | 12,913 |
| Cereals, unmilled, ot | 10,235 | 17,701 | 263 | 1,983 | 3,708 | 4,806 |
| Wheat flour | 61,076 | 57,043 | 22,238 | 22,781 | 1,865 | 1,979 |
| Cereals, milled, othe | 11,886 | 12,866 |  | 10 | 6,508 | 7,703 |
| Cereal preparations | 5,063 | 6,227 | 659 | 401 | 3,913 | 5,250 |
| Fruits and fruit preparations | 13,226 | 17,691 | 4,880 | 8,090 | 6,570 | 7,470 |
| Vegetables and vegetable preparations... | 15,810 | 23,998 | 3,558 | 7,416 | 6,550 | 6,262 |
| Sugar and sugar preparations........... | 7,735 | 8,057 | 268 | 742 | 7,022 | 6,249 |
| preparations. | 11,573 | 15,342 | 2,917 | 4,001 | 3,179 | 5,784 |
| Oil seed cake and meal | 11,419 | 19,064 | 10,971 | 18,318 | 235 | 131 |
| Feeds of vegetable orig | 10,750 | 12,977 | 723 | 2,205 | 9,166 | 9,589 |
| Animal feeds, other | 9,539 | 12,938 | 1,736 | 2,433 | 5,054 | 7,396 |
| Whisky. | 80,397 | 84,885 | 251 | 305 | 76,124 | 80,639 |
| Beverages, ot | 4,414 | 4,259 | 14 | 12 | 4,221 | 4,118 |
| Tobacco. | 28,025 | 35,182 | 24,986 | 26,707 | 240 | 1,009 |
| Crude Materials, Inedible | 1,195,442 | 1,361,595 | 204,539 | 172,050 | 694,914 | 884,041 |
| Raw hides and skins. | 16,536 | 1, 14,781 | 1,566 | 887 | 4,047 | 4,335 |
| Fur skins, undressed | 23,949 | 25,546 | 5,013 | 4,696 | 17,315 | 18,172 |
| Crude animal products, | 4,057 | 6,004 | 274 | 550 | 3,435 | 5,060 |
| Seeds for sowing | 9,451 | 11,734 | 995 | 1,693 | 7,214 | 8,665 |
| Flaxseed. | 46,269 | 41,920 | 21,421 | 16,760 |  | 8,6 |
| Oil seeds, other and oil nuts and kernels. | 13,850 10,636 | 20,667 10,648 | 301 7,674 | 180 7,500 | 29 1,693 | 72 1,898 |
| Crude vegetable materials, other....... | 13,227 | 13, 856 | ${ }^{2} 210$ | +145 | 12,394 | 13,272 |
| Pulpwood. | 33,811 | 35,732 | 2,843 | 2,401 | 24, 350 | 24,346 |
| Crude wood materials, ot | 18,836 | 19,030 | 1,447 | 1,014 | 13,664 | 14,241 |
| Textile and related fibres | 10,106 | 11,718 | 1,215 | , 668 | 4,402 | 3,869 |
| Iron ores and concentrates | 142,566 | 220, 522 | 20,227 | 14,892 | 96,709 | 178,687 |
| Scrap iron and steel. | 27,338 | 12,489 | 96 | - | 7,930 | 6,159 |
| Aluminum ores, concentrates and scrap | 10,634 | 9,331 | 307 | 59 | 1,992 | 2,279 |
| Lepper in ores, concentrates and scrap. | 26,524 9,404 | 48,287 8,070 | 1,175 | 962 519 | 7,297 4,963 | 10,976 4,185 |
| Nickel in ores, concentrates and scrap. | 151,379 | 132,308 | 83,564 | 70,081 | 4,963 15,052 | 4,185 10,453 |
| Precious metals in ores concentrates and |  |  |  |  |  |  |
| $Z_{\text {inc }}^{\text {scrap in ores concentrates and }}$ | 37,296 | 34,996 | 25,209 | 22,846 | 9,393 | 9,581 |
| Radioactive ores and concentrates | 16,707 192,722 | 19,782 | ${ }_{18} 953$ | 542 | 10,849 | 16,484 |
| Metal-bearing ores, concentrates and scrap, other | 192,722 | 166,009 | 18,256 353 | 16,598 | 173,914 | 149,165 |
| Petroleum, crude.... | 152,334 | 232,497 | 353 | 217 | [ 603 | 3,259 |
| Natural gas.... | +41,689 | 22,423 |  | - | 152,334 41,689 | 232,497 |
| Coal and other crude bituminous substances. | 8,979 | 12, 9,311 | 1 | - 1 | 41,689 2,676 | 72,423 3,307 |
| Asbestos unmanufactured | 131,341 | 135,638 | 9,450 | 7,994 | 50,562 | r3,307 |
| Crude materials, inedible, other. | 42,074 | 40,506 | 1,967 | -847 | 29,912 | 33,203 |
| Fabricated Materials, Inedible . . . . . | 2,777,345 | 2,907,126 | 440,073 | 435,774 | 1,760,533 | 1,968,046 |
| Leather and leather fabricated materials | 10,959 | 2, 11,281 | 4,063 | 3,053 | 1,4,4,412 | 5,211 |
| Lumber, softwood....................... | 334,512 | 371,410 | 47, 202 | 46,499 | 248,485 | 284,285 |

[^294]11.-Domestic Exports from Canada to All Countries, to Britain and to the United States, by Section and Commodity, 1961 and 1962-continued

| Section and Commodity | All Countries |  | Britain |  | United States |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1961 | 1962 | 1961 | 1962 | 1961 | 1962 |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Fabricated Materials, Inedible-concl. |  |  |  |  |  |  |
| Lumber, hardwood. | 20,354 | 25,337 | 2,694 | 2,721 | 17,298 | 22,159 |
| Shingles and shakes | 20,779 | 24,172 | 236 | 170 | 20,362 | 23,836 |
| Sawmill products, other | 4,517 | 4,547 | 1,234 | 758 | 3,265 | 3,764 |
| Veneer. | 18,154 | 20,913 | 32 | 7 | 17,928 | 20,095 |
| Plywood | 16,037 | 23,298 | 11,549 | 16,452 | 4,071 | 5,935 |
| Wood fabricated materials, | 6,524 | 5,825 | 2,601 | 1,177 | 3,145 | 3,797 |
| Wood pulp and similar pulp. | 346, 661 | 369,902 | 31,023 | 27,723 | 268,949 | 298,166 |
| Newsprint paper. | 761,313 | 753,060 | 59,294 | 63,452 | 629,792 | 633,037 |
| Paper for printing, | 8,737 | 8,769 | 420 | 561 | 6,689 | 6,716 |
| Paperboard.. | 12,159 | 14,914 | 10,533 | 12,663 | 688 | 1,661 |
| Paper, other. | 17,348 | 20,450 | 5,733 | 8,403 | 4,450 | 5,147 |
| Yarn, thread, cord, twine | 8,797 | 7,899 | 159 | 493 | 4,205 | 4,123 |
| Broad woven and other fabrics | 14,906 | 14,613 | 7,662 | 6,244 | 883 | 634 |
| Oils, fats, waxes, extracts and derivatives | 15,759 | 14,539 | 10,168 | 6,414 | 1,595 | 1,483 |
| Chemical elements. | 7,470 | 6,855 | 2,199 | 1,497 | 3,525 | 3,927 |
| Inorganic chemicals, other | 19,643 | 21,153 | 2,989 | 3,245 | 12,124 | 14,491 |
| Organic chemicals | 37,959 | 44,957 | 8,270 | 8,321 | 22,647 | 27,236 |
| Fertilizers and fertilizer materials. | 53,554 | 60,250 | 7 | 3 | 49,659 | 57,283 |
| Synthetic and reclaimed rubber and |  |  |  |  |  |  |
| Plastics, basic shapes and forms. | 7,448 | 8,503 | 2,698 | 1,713 | 426 | 454 |
| Chemica lproducts, other. | 7,667 | 9,923 | 485 | 1,094 | 3,088 | 5,098 |
| Petroleum products and coal products. | 14,286 | 19,386 | 420 | 517 | 12,094 | 16,844 |
| Ferro-alloys. | 5,339 | 5,856 | 3,641 | 3,392 | 1,032 | 1,924 |
| Primary iron and stee | 52,232 | 45,878 | 4,083 | 4,674 | 31,077 | 35,598 |
| Castings and forgings | 8,516 | 15,384 | 41 | 156 | 7,680 | 14,267 |
| Bars and rods of steel | 11,848 | 9,448 | 3,567 | 1,756 | 2,928 | 3,694 |
| Plate, sheet and strip of stee | 35,795 | 48,800 | 3,132 | 5,430 | 9,782 | 14,785 |
| Railway track material. | 8,137 | 12,669 |  |  | 1,278 | 451 |
| Iron and steel fabricated materials, other | 9,005 | 11,599 | 402 | 157 | 5,984 | 9,351 |
| Aluminum, including alloys | 241,825 | 284, 554 | 72,415 | 82,443 | 62,268 | 102,014 |
| Copper and alloys. | 178,320 | 163,931 | 69,096 | 59,710 | 45,562 | 56,087 |
| Lead, including alloys | 18,330 | 18,269 | 5,818 | 5,975 | 9,761 | 10,059 |
| Nickel and alloys... | 191,647 | 191,556 | 20,203 | 15,587 | 140,391 | 163,403 |
| Precious metals, including alloy | 10,535 | 12,582 | 191 | 196 | 9,996 | 12,072 |
| Zinc, including alloys. | 42,244 | 41,541 | 16,687 | 16,928 | 15,690 | 17,471 |
| Non-ferrous metals and alloys, ot | 13,188 | 12,579 | 5,487 | 5,453 | 6,735 | 5,028 |
| Metal fabricated basic products. | 14,329 | 17,041 | 1,065 | 1,151 | 8,439 | 10,647 |
| Abrasive basic products. | 29,404 | 30,091 | 2,351 | 3,310 | 25,403 | 25, 129 |
| Non-metallic basic products, o | 13,703 | 13,982 | 138 | 206 | 10,651 | 10,983 |
| Electricity........... | 15,794 | 16,508 |  |  | 15,794 | 16,508 |
| Fabricated materials, oth | 7,777 | 8,327 | 486 | 690 | 2,615 | 3,113 |
| End Products, Inedible. | 505,591 | 654,763 | 26,069 | 30,624 | 283,707 | 375,905 |
| General purpose industrial machinery... | 16,995 | 22,731 | 1,238 | 1,081 | 6,918 | 8,589 2 290 |
| Drilling, excavating, mining machinery.. | 6,997 | 8,743 | 266 2,977 | 284 3,046 | 2,082 16.827 | 2,290 21,399 |
| Special industry machinery............. | 32,045 9,256 | 43,357 10,187 | 2,977 | 3,046 1,071 | 16,827 5,750 | 21,399 5,235 |
| Machinery and equipment, other. Soil preparation, seeding, fertilizing | 9,256 | 10,187 | 670 | 1,071 | 5,750 |  |
| machinery | 17,486 | 20,594 | 27 | 71 | 15,915 | 19,455 |
| Haying, harvesting and related machinery | 53,531 | 55,727 | 253 | 1,227 | 49,367 | 50,770 |
| Agricultural machinery and equipment, other | 5,252 | 6,833 | 57 | 33 | 4,757 | 6,319 |
| Tractors............................. | 9,278 | 8,324 | 34 | 239 | 5,926 | 6,143 |
| Railway and street railway rolling stock. | 6,989 | 5,902 | 8 | 12 | 1,905 | 1,048 |
| Passenger automobiles. . . . . |  | 21,233 |  | 487 |  | 14.649 |
| Road motor vehicles, other | 46,513 | 35, 844 | 996 |  |  |  |
| Ships and boats. | 13,580 | 19,319 |  | $\begin{array}{r}793 \\ 2815 \\ \hline\end{array}$ | 2,401 76,030 | r $\begin{array}{r}\text { 8,63, } \\ 1093\end{array}$ |
| Aircraft...... | 100,914 | 146,917 1,086 | 3,217 | 2,815 | 76,030 953 | 1,046 |
| Vehicles, other. . $7 . .$. | 957 5,140 | 1,086 7,630 | 75 | 8 | 2,474 | 4,440 |
| Communication and related equipment. | 35,514 | 51,789 | 392 | 1,171 | 26,163 | 39,171 |
| Heating, air conditioning and refrigeration equipment. | 5,152 | 5,877 | 1,473 | 2,123 | 1,004 | 1,630 |
| Cooking equipment for food. | 1,634 | 2,713 | 928 | 1,323 | 324 |  |
| Electric lighting, distribution and control equipment. | 14,531 | 16,280 | 602 | 1,215 | 3,741 | 5,427 |
| Measuring, controlling, laboratory, | , 97 | 32,235 | 333 | 522 | 6,894 | 16,380 |

[^295]11.-Domestic Exports from Canada to All Countries, to Britain and to the United States, by Section and Commodity, 1961 and 1962-concluded

| Section and Commodity | All Countries |  | Britain |  | United States |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1961 | 1962 | 1961 | 1962 | 1961 | 1962 |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| End Products, Inedible-concl. |  |  |  |  |  |  |
| Hand tools and miscellaneous cutlery.... | 5,402 27 | 5,543 33589 | 807 1540 | $\begin{array}{r}986 \\ \hline 807\end{array}$ | 219 | 8.256 |
| Office machines and equipment.......... | 27,740 8,038 | 33,589 9,687 | 1,540 | 1,807 | 5,476 3,577 | 8,038 4,793 |
| Apparel and apparel accessories. | 7,240 | 9,757 | 2,770 | 2,553 | 2,478 | 3,645 |
| Footwear. | 3,738 | 5,652 | 838 | 992 | 2,063 | 3,446 |
| Toys, games, sporting and recreation equipment | 6,006 | 8,057 | 317 | 478 | 4,629 | 6,065 |
| Personal and household goods, other.... | 8,307 | 8,598 | 1,052 | 840 | 3,992 | 3,826 |
| Medicinal and pharmaceutical products.. | 9,029 | 10,274 | 241 | 236 | 952 | 830 |
| Medical supplies, ophthalmic and orthopaedic appliances | 1,061 | 1,263 | 34 | 75 | 364 | 544 |
| Printed matter......................... | 5,630 | 6,940 | 499 | 450 | 4,014 | 5,083 |
| Photographic goods. | 3,934 | 4,498 | 258 | 329 | 1,529 | 2,034 |
| Firearms, ammunition, weapons and fire control equipment. | 5,872 | 10,239 | 850 | 450 | 4,279 | 9,146 |
| Containers and closures................... | 3,976 | 5,262 | 708 | 1,489 | 1,487 | 2,064 |
| End products, other. . . . . . . . . . . . . . . . | 12,876 | 12,083 | 928 | 1,235 | 7,414 | 5,253 |
| Special Transactions-Trade........... | 11,903 | 14,849 | 240 | 205 | 8,841 | 10,243 |
| Contractors' equipment and tools....... | 4,785 | 8,330 | 82 | 42 | 3,091 | 5,082 |
| Shipments under \$50 in value..... | 6,995 | 6,437 | 157 | 163 | 5,675 | 5,088 |
| Special transactions-trade, other. | 123 | 83 | 1 | 1 | 75 | 73 |
| Totals, Exports.................. | 5,754,986 | 6,178,523 | 909,344 | 909,041 | 3,107,176 | 3,608,439 |

12.-Imports into Canada for Consumption from All Countries, from Britain and from the United States, by Group and Commodity, 1961 and 1962

| Group and Commodity | All Countries |  | Britain |  | United States |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1961 | 1962 | 1961 | 1962 | 1961 | 1962 |
|  | \$'000 | \$'000 | \$'000 | \$'000 | S'000 | \$'000 |
| Agricultural and Vegetable Products (except chemicals, fibres and wood) | 703,304 | 754,749 | 39,749 | 38,184 | 388,187 | 422,750 |
| Fruits and berries, fresh or chilled.............. | 97,971 | 99,493 | 30,75 | 38,15 | 64,738 | 65,264 |
| Other fruits and fruit preparations | 72,638 | 71, 834 | 31 | 1,365 | 51,150 | 48,911 |
| Nuts, kernels and seeds for food | 12,882 | 13,425 | 1,326 | 161 | 4,232 | 4,755 |
| Vegetables, fresh or chilled | 47, 827 | 55,455 | 180 | 2 | 44,093 | 51,247 |
| Other vegetables and vegetable preparations | 16,660 | 14,638 | 11 | 194 | 12,028 | 9,758 |
| Cereals, unmilled. | 38,949 | 52,478 | 218 | 47 | 35,318 | 51,705 |
| Cereals, milled. | 1,764 | 2,044 | 61 | 2 | 1,618 | 1,894 |
| Cereal preparations | 10,292 | 7,887 | 5 | 3,661 | 4,995 | 3,286 |
| Sugar, raw. | 52,729 | 56,926 | 4,293 | - |  |  |
| Other sugar and sugar prepa | 19,806 | 17,510 |  | 5,833 | 5,709 | 4,620 |
| Coffee, green. . . | 16,604 52,184 | 18,647 55,655 | 6,961 4,106 | 3,398 6 | 1,861 4,241 | 1,592 5,881 |
| Other coffee and coffee preparations | 7,144 | 6,525 | ${ }^{1} 77$ | 27 | 7,009 | 6,412 |
| Spices, spice herbs and spice seeds. | 3,462 | 3,487 | 38 | 324 | 820 | 741 |
| Tea. | 23,995 | 22,571 | 317 | 3,576 | 303 | 298 |
| Other vegetable food produ | 7,036 | 5,319 | 3,719 | 569 | 6,086 | 4,413 |
| Animal feeds | 13,517 | 20,521 | 623 |  | 13,393 | 20,520 |
| Geverages.... | 24,797 | 26,730 | 10,404 | 11,184 | 1,146 | 1,302 |
| Gums and resi | 9,064 34,952 | 32,065 | 98 3,278 | +137 | 8,009 | 8,192 14,948 |
| Plants, shrubs, trees, vines, | $\begin{array}{r}34, \\ 8 \\ \hline\end{array}$ | 3,210 8, | 3, 18 | 3,441 | 17,461 5,136 | 14,948 |
| Rubber, raw and partially manufactured | 34,226 | 43,290 | 370 | 426 | 18,027 | 23,248 |
| Rubber tires and tubes.... | 2,083 | 10,056 | 115 | 703 | 1,818 | 7,169 |
| Other rubber, manufactured | 32,147 | 27,425 | 2,355 | 1,978 | 26, 437 | 23,746 |
| Seeds for sowing.......... | 7,740 | 7,651 | 520 | 515 | 6,000 | 5,728 |
| Tobacco....ts and kernel | 38,748 6,483 | 48,211 | 38 | 12 | 33,739 | 39,222 |
| Other vegetable non-food products | 6,483 9,401 | 7,523 | 340 247 | 397 199 | 4,560 8,260 | 4,651 8,238 |

12.-Imports into Canada for Consumption from All Countries, from Britain and from the United States, by Group and Commodity, 1961 and 1962-continued

| Group and Commodity | All Countries |  | Britain |  | United States |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1961 | 1962 | 1961 | 1962 | 1961 | 1962 |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Animals and Animal Products (except chemicals and fibres). | 152,350 | 156,054 | 13,890 | 14,251 | 93,256 | 86,165 |
| Live animals.................................. | 6,967 | 7,561 | 142 | 516 | 6,445 | 6,689 |
| Fish and fishery products | 17,760 | 19,156 | 419 | 455 | 8,381 | 7,574 |
| Furs and products....... | 23,155 | 23,141 | 4,597 | 4,605 | 14,121 | 12,240 |
| Hides and skins, ra | 11,475 | 11, 202 | 41 |  | 11,097 | 9,832 |
| Leather, unmanufacture | 10,394 | 11,489 | 5,489 | 5,774 | 3,871 | 4,239 |
| Leather, manufactured. | 2,149 | -27, 208 | 431 | 12 | 1,348 14543 | 14,428 |
| Meat, fresh, chilled or froze | 24,785 22 | 18,107 | 336 | 248 | 15,212 | 14,488 11,699 |
| Other meat and meat prepara | 12,886 | 12,353 | 119 | 119 | 6,063 | 5,181 |
| Oils, fats, greases and waxes. | 7,310 | 7,602 | 270 | 175 | 6,056 | 5,716 |
| Other animals products. | 12,680 | 15,513 | 2,045 | 1,904 | 6,118 | 7,179 |
| Fibres, Textiles and Textile Products. | 458,488 | 481,952 | 85,640 | 90,442 | 232,532 | 231,952 |
| Cotton, raw and linters. | 48,998 | 56,395 | 16 |  | 47,418 | 50,192 |
| Cotton fabrics. | 77,207 | 72,861 | 3,317 | 3,236 | 52,616 | 47, 880 |
| Other cotton prod | 21,914 | 23,066 | 3,863 | 3,795 | 12,954 | 11, 462 |
| Flax, hemp, jute and prod | 26,360 | 30, 938 | 4,368 | 4,936 | 4,417 | 4, 367 |
| Silk and products...... | 29,282 | 31,780 | 17,069 | 18,884 | 2,948 | 2,574 |
| Wool fabrics. | 36,339 | 38,010 | 26, 136 | 26, 865 | 1,715 | 2,193 |
| Other wool products | 7,380 | 10,434 | 4,670 | 6,395 | 853 | 1,090 |
| Synthetic fibre fabrics | 29,326 | 34,374 | 1,107 | 1,355 | 22,518 | 25,425 |
| Synthetic fibres and other synthetic fibre | 23,968 | 30,561 | 1,828 | 3,053 | 18,783 | 22,889 |
| Carpets, mats, other floor cover | 12,465 | 11,252 | 2,910 | 2,710 | 2,921 | 2,367 |
| Apparel and apparel accessories................ | 75, 962 | 71,728 | 12,469 | 11,564 | 24,947 | 20,158 |
| Other textile products............................ | 61,926 | 63,398 | 7,715 | 7,490 | 36,515 | 37,783 |
| Wood, Wood Products and Pap | 274,408 | 291,475 | 9,991 | 10,575 | 233,850 | 245,020 |
| Lumber and timber. | 30,806 | 31,236 | 13 | 33 | 27,984 | 27,720 |
| Other wood, unmanufactured.................. | 27,727 | 35, 017 | 132 | 301 | 19,457 | ${ }_{21}^{22,887}$ |
| Wood, manufactured........................... | 28,607 | 28,128 | 629 209 | 194 | 21, 1929 19 | 19,143 |
| Pulpboard and other fibreboard | 21,433 | 20,838 59,541 | 2,539 | 2,604 | 48,852 | 53,081 |
| Other paper........ | 35,087 | 37,290 | , 308 | 300 | 33,729 | 35,287 |
| Books and pamphlets.......................... | 48,976 | 53,224 | 4,720 | 5,383 | 37,989 | 42,154 |
| Other printed matter........................... | 27,488 | 26,200 | 1,441 | 1,263 | 24,873 | 23,633 |
| Iron and Its Products | 1,922,308 | 2,196,628 | 203,727 | 206,104 | 1,543,362 | 1,795,265 |
| Iron ore...... | 47,433 | 56,324 |  |  | 45,579 | 54,665 |
| Pigs, ingots, blooms and billets. ............... | 1,641 | 2,459 | 108 | 166 | 1,506 | 1,757 |
| Ferro-alloys.................................... | 8,099 | 8,978 | 334 | 196 | $1,8,85$ 11734 | 12,617 |
| Scrap iron. | 11,743 | 12,619 | 768 | 619 | 6,850 | 9,457 |
| Castings and forgings | 7,925 1984 | 10,416 | 2,054 | 2,360 | 6,310 | 5,643 |
| Bars and rods. | 19,843 <br> 53 | 25,457 57 | 6,084 | 2,066 | 40,422 | 46, 267 |
| Plates, sheet and strip. | 53, <br> 38 | 28, <br> 28 <br> 131 | 4,108 | 3,565 | 24,434 | 16,925 |
| Other rolling mill produc Pipes, tubes and fittings. | 46,092 | 49,458 | 9,247 | 9,743 | 27,975 | 29,573 |
| Pipes, tubes and firtings | 18,960 | 21, 321 | 6,626 | 6,546 | 6,622 | 7,212 |
| Engines, diesel and semi-diesel and parts..... | 30,281 | 39,145 | 9,610 | 9,479 | 19,318 | 27,620 |
| Engines for motor vehicles and parts.......... | 28,499 | 46,727 | 843 | 1,040 | 26,766 26,696 | +33, ${ }^{4325}$ |
| Other engines (except aircraft engines)......... | 28,207 | r 35,496 | 1,773 | 2,070 | 91,417 | 106,667 |
| Farm equipment and parts (except tractors).... | 95,680 136,014 | 113,451 140,287 | 16,349 | 17,085 | 118,544 | 121,483 |
| Tractors and parts.... | 136,014 26,443 | 140,287 35,078 | 16,349 3,457 | 17,596 | 16,637 | 24,127 |
| Hardware and cutlery. ........................ | 26,443 28,178 | 38,071 | 2,151 | 2,045 | 22, 882 | 22,934 |
| Household machinery .......... | 63,712 | 41,973 | 3,917 | 1,928 | 57, 879 | 38,906 |
| Business and printing machinery | 94,482 | 104,882 | 4,197 | 5,922 | 78,068 | ${ }_{41,576}^{86,22}$ |
| Metalworking machinery...... | 34,414 | 55,047 | 4,764 <br> 4 <br> 1944 | 8,407 1,910 | 25,837 6,197 | 7,322 |
| Pulp and paper mill machinery |  | 43, ${ }^{9} 807$ | - ${ }^{4}, 210$ | 32,230 | 321,690 | 379,623 |
| Other non-farm machinery. | $\begin{array}{r}169,974 \\ 14,885 \\ \hline\end{array}$ | 436,297 15,714 | 27, 278 | -343 | 14,059 | 14,608 |
| Stamped and coated products | - | 15,708 | 4,685 | 5,614 | 27,485 | 31,537 |
| Automobiles, freight and passenge | 183,653 | 178,955 | 64,148 | 54,874 | 71,440 | 78,174 |
| Automobile parts.............. | 304,487 | 392,687 | 8,776 | 8,767 | 292,044 | 378,896 |
| Other vehicles, chiefly of iron | 19,980 | 24,297 | 3,965 | 4,660 | 14,729 | 30, 397 |
| Cooking and heating apparatu | 31,424 8 8 | 32,038 19,786 | 1,216 | 4,471 | 5,515 | 13,781 |
| Firearms and ammunition | 8,592 119,152 | 130,221 | 10,448 | 11,275 | 100,716 | 108,530 |

12.-Imports into Canada for Consumption from All Countries, from Britain and from the United States, by Group and Commodity, 1961 and 1962-concluded

| Group and Commodity | All Countries |  | Britain |  | United States |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1961 | 1962 | 1961 | 1962 | 1961 | 1962 |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Non-ferrous Metals and Their Products. | 514,190 | 598,784 | 67,894 | 70,639 | 328,436 | 395,142 |
| Aluminum ores, concentrates and scrap. | 58,130 | 62,277 |  |  | 9,273 | 12,226 |
| Other aluminum and products..... | 27,941 | 39,592 | 3,721 | 10,206 | 22,199 | 27,748 |
| Brass and copper and products | 25,565 | 28,953 | 2,435 | 2,603 | 21,510 | 24,137 |
| Lead and products............ | 654 | ${ }^{510}$ | 119 | 114 | 246 | ${ }_{2}^{239}$ |
| Nickel and products | 10,807 | 15,894 | ${ }^{289}$ | ${ }^{17} 162$ | 5,853 | 5,876 |
| Precious metals and products (except gold)..... | 10,897 9,278 | 40,030 6,262 | 12,604 1,677 | 17,216 523 | 23,750 1,348 | 17,233 |
| Zinc and products. | 3,829 | 4,421 | 112 | 140 | 3,421 | 3,995 |
| Alloys, n.o.p. | 1,939 | 1,937 | 698 | 633 | 1,073 | 1,140 |
| Other ores or metals, non-f | 12,244 | 11,937 | 40 | 66 | 3,620 | 3,185 |
| Clocks and watches. | 11,717 | 13,065 | 1,032 | 1,594 | 2,462 | 2,653 |
| Electrical apparatus, | 265,260 | 325,316 | 36,884 | 31,953 | 199,752 | 260,872 |
| Printing materials. | 3,191 | 3,470 | 69 | 53 | 3,076 | 3,344 |
| Plumbing equipment and fittings | 9,843 | 8,900 | 1,122 | 829 | 7,513 | 6,685 |
| Other non-ferrous metals and products | 34,098 | 36,221 | 7,088 | 4,545 | 23,340 | 25,283 |
| Non-metallic Minerals and Their Products (except chemicals) | 680,880 | 710,851 | 31,122 | 32,443 | 263,987 | 273,190 |
| Asbestos and products............... | 5,272 | 4,940 | 1,279 | 965 | 3,577 | 3,397 |
| Clay and products | 44,119 | 48,542 | 14,483 | 15,644 | 24,471 | 26,608 |
| Coal. | 71,560 | 74,171 | 813 | 513 | 70,747 | 73,658 |
| Coal product | 18,399 | 15,454 | 1,708 | 1,780 | 15,957 | 13,627 |
| Glass and glassw | 67,074 | 78,720 | 6,058 | 7,497 | 43,264 | 50,426 |
| Petroleum, crude | 291,170 | 304,898 |  |  | 1,869 |  |
| Fuel oils. | 60,659 | 60,159 | 233 | 356 | 10,115 | 8,886 |
| Other petroleum prod | 41,775 | 41,383 | 92 | 248 | 33,799 | 34,607 |
| Stone and products. | 40,547 | 44,640 | 1,680 | 2,035 | 34,023 | 36,223 |
| Other non-metallic minerals and products | 40,306 | 37,944 | 4,777 | 3,405 | 26,167 | 24,817 |
| Chemicals, and Allied Products | 370,469 | 394,660 | 29,640 | 35,391 | 305,459 | 320,072 |
| Acids. | 8,198 | 8,316 | 1,441 | 1,313 | 5,293 | 4,904 |
| Drugs, medicines, pharmaceutical | 40,972 | 38,896 | 3,960 | 4,260 | 32,445 | 29,366 |
| Dyeing extracts, tanning materials | 3,929 | 2,305 | 461 | 56 | 2,246 | 1,275 |
| Explosives. | 1,440 | 1,973 | 88 | 363 | 1,086 | 1,399 |
| Fertilizers and fertilizer materials | 16,233 | 15,176 | 32 | 36 | 13,389 | 12,258 |
| Toiletries, cleaners, household chem | 1 | 12,167 |  | 672 |  | 10, 368 |
| Inorganic chemicals, n.o.p | 27,252 | 26,986 | 3,555 | 4,011 | 21,085 | 20,614 |
| Plastics materials, not shape |  | 53,205 |  | 1,325 |  | 48,626 |
| Plastic film and sheet. | 2 | 24,161 | $\stackrel{2}{2}$ | 1,555 | 2 | 20,269 |
| Plastics basic shapes and forms, n.o.p | ${ }^{2}$ | 10,181 | 2 | 299 | ${ }^{2}$ | 9,466 |
| Other plastics manufactures | 104,829 | 31,685 | 3,351 | 598 | 94,806 | 28,322 |
| Dyestuffs. |  | 14,048 |  | 1,672 |  | 7,039 |
| Pigments, lakes and toners | 24,785 | 10,531 | 6,539 | 660 | 14,083 | 9,207 |
| Paints and related | 1 | 8,040 |  | 361 |  | 7,596 |
| Other chemicals. | 142,831 | 136,990 | 10,213 | 18,211 | 121,027 | 109,363 |
| Miscellaneous Commodities | 692,181 | 672,659 | 136,568 | 65,034 | 474,900 | 529,983 |
| Films. | 19,442 | 19,081 | 3,000 | 3,126 | 13,678 | 12,716 |
| Toys and sporting goods | 20,670 | 20,757 | 2,759 | 2,685 | 10,552 | 9,868 |
| Containers, other than pap | 15,822 | 7,506 | 3,926 | 1,028 | 3,600 | 2,679 |
| Footwear | 20,953 | 21,625 | 5,436 | 5,295 | 2,438 | 2,049 |
| Reírigerators. | 26,382 | 24,647 | 3,063 | 3,206 | 23,089 | 20,740 |
| Other household and personal equip | 24,653 | 25, 362 | 1,859 | 1,968 | 14,835 | 14,693 |
| Musical instruments | 14,541 | 18,173 | 2,502 | 4,533 | 8,565 | 9,913 |
| Scientific and educational equipment | 66,765 | 72,640 | 3,474 | 3,227 | 51,394 | 56,746 |
| Aircrait complete with engines. | 4 | 4 | 4 | 4 | 4 |  |
| Aircraft parts. | 312,552 | 259,251 | 101,540 | 29,633 | 210,141 | 229,420 |
| Ships and boats | 9,266 | 6,792 | , 517 | 562 | 4,705 | 4,957 |
| Other vehicles | 9,490 | 8,785 | 185 | 116 | 9,171 | 8,551 |
| Works of art | 4,473 | 6,358 | 1,184 | 1,497 | 1,776 | 3,026 |
| Canadian goods returne | 30,116 | 34,167 | 1,608 | 1,655 | 25,038 | 28,717 |
| Other miscellaneous commer | 55,094 | 85,504 | 1,929 | 2,820 | 51,433 | 80,182 |
| Other miscellaneous commoditie | 61,962 | 62,012 | 3,586 | 3,683 | 44,484 | 45,727 |
| Totals, Imports | 5,768,578 | 6,257,814 | 618,221 | 563,062 | 3,863,968 | 4,299,539 |

${ }^{1}$ Included with "Other chemicals". with "Pigments, lakes and toners". value prior to April 1962.
${ }^{2}$ Included with "Other plastics manufactures".
' Included with "Aircraft parts".
Shipments
$\$$ pments under $\$ 50$ in

## Section 5.-Trade by Origin and Degree of Manufacture

Tables 13 and 14 classify exports and imports, respectively, according to origin, by group and degree of manufacture for the years 1959 and 1960. These were the latest figures available for this classification at the time of going to press.

## 13.-Exports according to Origin, by Group and Degree of Manufacture, 1959 and 1960

| Origin | 1959 |  |  | 1960 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\underset{\text { Countries }}{\text { All }}$ | Britain | United States | $\underset{\text { Countries }}{\text { All }}$ | Britain | United States |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$ 000 | \$'000 |
| Farm Origin |  |  |  |  |  |  |
| Canadian Farm Products-1 Field Crops- |  |  |  |  |  |  |
| Raw materials............. | 658,818 | 234, 971 | 74,904 | 621,666 | 221,038 |  |
| Partly manufactured | 10,944 |  | 5,397 | 10,938 |  | 6,234 |
| Fully or chiefly manufactured | 184,842 | 43,780 | 89,596 | 184,345 | 43,898 | 91,887 |
| Totals, Field Crops. | 854,604 | 278,751 | 169,897 | 816,948 | 264,937 | 169,128 |
| Animal Husbandry - |  |  |  |  |  |  |
| Raw materials..... | 111,567 | 3,650 | 89,159 | 92,942 | 4,972 | 68,342 |
| Partly or manufactured.......... | 113,914 60,701 | 1,671 18,314 | 7,493 14,241 | 10,817 59,479 | 2,005 | 5,432 15,170 |
| Totals, Animal Husbandry | 186,183 | 23,636 | 110,893 | 163,238 | 22,836 | 88,943 |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Partly manufactured | 24,858 | 1,671 | 12,890 | 21,755 | 2,005 | 11,666 |
| Fully or chiefly manufactured | 245,543 | 62,094 | 103,837 | 243, 823 | 59,758 | 107,057 |
| Totals, Canadian Farm Products. | 1,040.787 | 302,387 | 280,790 | 980,186 | 287,773 | 258,071 |
| Foreign Farm Products-1 |  |  |  |  |  |  |
| Field Crops- | 6 | - | 6 |  |  |  |
| Partly manufactured | 1,313 | 66 | 878 | 1,357 | 91 | 869 |
| Fully or chiefly manufactured | 21,606 | 226 | 12,670 | 22,408 | 3,853 | 8,538 |
| Totals, Field Crops. | 22,925 | 292 | 13,554 | 23,976 | 3,945 | 9,617 |
| Animal Husbandry- |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Partly manufactured. <br> Fully or chiefly manufactured | 6 | 二 | 4 | - 9 | -6 | 3 |
| Totals, Animal Husbandry. ................... | 6 | - | 4 | 9 | 6 | 3 |
| All Foreign Farm Products- |  |  |  |  |  |  |
| Raw materials....... |  | 66 | $8{ }^{6}$ | ${ }_{1}^{210}$ |  | 889 |
| Partly manufactured......... Fully or chiefly manufactured | 1,313 21,611 | 66 226 | 878 12,674 | 1,357 22,417 | 3,860 |  |
| Totals, Foreign Farm Products. | 22,931 | 292 | 13,558 | 23,985 | 3,951 | 9,620 |
| All Farm Products-1 |  |  |  |  |  |  |
| All Field Crops- |  |  |  |  |  |  |
| Raw materials....... | 658,825 12,258 | 234,971 66 | 74,910 6,275 | 621,876 12,295 | 221,038 91 | 7,104 |
| Fully or chiefly manufactured | 206,447 | 44,006 | 102,266 | 206,753 | 47,752 | 100,425 |
| Totals, All Field Crops. | 877,530 | 279,043 | 183,451 | 840,924 | 268,882 | 178,745 |

[^296]
## 13.-Exports according to Origin, by Group and Degree of Manufacture, 1959 and 1960 -concluded

| Origin | 1959 |  |  | 1960 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\underset{\text { Countries }}{\text { All }}$ | Britain | United States | Countries | Britain | United States |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Farm Origin-concluded |  |  |  |  |  |  |
| All Animal Husbandry- |  |  |  |  |  |  |
| Raw materials... | 111,567 | 3,650 | 89,159 | 92,942 | 4,972 | 68,342 |
| Partly manufactured.......... | 11,914 60,707 | 1,671 18,314 | 7,493 14,245 | 10,817 59,488 | 2,005 15,866 | 5,432 15,172 |
| Fully or chiefly manufactured. |  |  |  |  |  |  |
| Totals, All Animal Husbandry. | 186,188 | 23,636 | 110,897 | 163,247 | 22,843 | 88,946 |
| All Farm Products- |  |  |  |  |  |  |
| Raw materials....... | 770,392 |  |  |  |  |  |
| Partly manufactured......... | 26,172 $\mathbf{2 6 7 , 1 5 4}$ | 1,737 62,320 | 13,768 | 23,112 $\mathbf{2 6 6 , 2 4 1}$ | 2,096 63,618 | 12,535 |
| Totals, Farm Origin. | 1,063,718 | 302,679 | 294,348 | 1,004,171 | 291,724 | 267,691 |
| Wildlife Origin |  |  |  |  |  |  |
| Raw materials. | 24,164 | 4,550 | 18,466 | 23,409 | 5,125 | 16,964 |
| Partly manufactured. | 1,379 | 91 | 871 | 1,169 | ${ }_{6}^{66}$ | 504 |
| Fully or chiefly manufactured. | 640 | 15 | 577 | 386 | 83 | 268 |
| Totals, Wlldilife Origin | 26,184 | 4,656 | 19,914 | 24,964 | 5,274 | 17,736 |
| Marine Origin |  |  |  |  |  |  |
| Raw materials. | 88,313 | 297 | 86,886 | 91,641 | 1,889 | 88,063 |
| Partly manufactured | 504 | 66 | 438 | 540 | 90 | 450 |
| Fully or chiefly manufactured | 58,337 | 21,490 | 11,274 | 45,266 | 9,096 | 10,111 |
| Totals, Marine Origin | 147,154 | 21,853 | 98,598 | 137,448 | 11,075 | 98,624 |
| Forest Origin |  |  |  |  |  |  |
| Raw materials.. | 44,235 | 3,719 | 38,149 | 46,910 | 2,990 | 39,904 |
| Partly manufactured | 671,616 | 62,080 | 552,807 | 708,425 | 97,407 | 539,575 |
| Fully or chiefly manufactured | 800,199 | 66,732 | 666,804 | 837,028 | 79,137 | 678,602 |
| Totals, Forest Origin | 1,516,050 | 132,531 | 1,257,760 | 1,592,362 | 179,534 | 1,258,081 |
| Mineral Origin |  |  |  |  |  |  |
| Raw materials. | 778, 082 | 97,306 | 588,475 | 765,461 | 114,167 | 539,259 |
| Partly manufactured. | 752,830 | 176,604 | 390,002 | 906,108 | 244,076 | 337,418 |
| Fully or chiefly manufactured | 493,227 | 12,974 | 325,536 | 536,473 | 32,021 | 293,909 |
| Totals, Mineral Origin. | 2,024,139 | 286,884 | 1,304,012 | 2,208,043 | 390,264 | 1,170,587 |
| Mixed Origin |  |  |  |  |  |  |
| Raw materials. |  | - |  |  |  |  |
| Partly manufactured | 1,400 |  | , 578 | 1,282 | 22 | 1,675 |
| Fully or chiefly manufactured. | 241,077 | 37,190 | 105,990 | 285,391 | 37,397 | 116,864 |
| Totals, Mired Origin | 244,427 | 37,199 | 108,519 | 288,587 | 37,418 | 119,452 |
| Recapltulation |  |  |  |  |  |  |
| Raw materials |  |  |  |  |  | 825,662 |
| Partly manufactured | 1,453,901 | 240,586 | 958,464 | 1,640,637 | 343,757 | 891,158 |
| Fully or chiefly manufactured | 1,860,634 | 200,721 | 1,226,692 | 1,970,785 | 221,352 | 1,215,351 |
| Grand Totals. | 5,021,672 | 785,802 | 3,083,151 | 5,255,575 | 915,290 | 2,932,171 |

## 14.-Imports according to Origin, by Group and Degree of Manufacture, 1959 and 1960

| Origin | 1959 |  |  | 1960 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | All Countries | Britain | United States | $\underset{\text { All }}{\text { Al }}$ | Britain | United States |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$ 000 | \$'000 |
| Farm Origin |  |  |  |  |  |  |
| Canadian Farm Products-1 |  |  |  |  |  |  |
| Field Crops- |  |  |  |  |  |  |
| Raw materials.. | 164,907 | 603 | 128,759 | 155,558 | 396 | 142,209 |
| Partly manufactured........ | 15,985 | 59 | 15,383 | 12,131 | 107 | 11,397 |
| Fully or chiefly manufactured | 92,366 | 26,260 | 49,269 | 96,480 | 26,350 | 51,250 |
| Totals, Field Crops | 273,258 | 26,921 | 193,411 | 264,169 | 26,852 | 204,856 |
| Animal Husbandry- |  |  |  |  |  |  |
| Raw materials. | 55,735 | 2,925 | 34,901 | 55,444 | 2,553 | 35,023 |
| Partly manufactured | 33,379 | 20,046 | 7,950 | 30,966 | 18,497 | 7,371 |
| Fully or chiefly manufactured | 110,227 | 52,629 | 21,823 | 113,631 | 52,000 | 23,840 |
| Totals, Animal Husbandry | 199,341 | 75,601 | 64,674 | 200,041 | 73,050 | 66,233 |
| All Canadian Farm Products- |  |  |  |  |  |  |
| Raw materials. | 220,641 | 3,528 | 163,660 | 211,002 | 2,949 | 177,232 |
| Partly manufactured | 49,364 | 20,105 | 23,333 | 43,097 | 18,604 | 18,768 |
| Fully or chiefly manufactured | 202,593 | 78,889 | 71,092 | 210,110 | 78,350 | $\cdot 75,090$ |
| Totals, Canadian Farm Products. | 472,599 | 102,522 | 258,085 | 464,209 | 99,902 | 271,090 |
| Foreign Farm Products-1 |  |  |  |  |  |  |
| Field Crops- |  |  |  |  |  |  |
| Raw materials... | 202,489 | 2,164 | 80,450 | 225,570 | 1,583 | 97,405 |
| Partly manufactured. | 98,741 | 2,032 | 27,315 | 83,740 | 1,234 | 21,888 |
| Fully or chiefly manufactured | 326,721 | 34,187 | 169,963 | 328,586 | 32,898 | 170,569 |
| Totals, Field Crops. | 627,951 | 38,383 | 277,729 | 637,895 | 35,716 | 289,861 |
| Animal Husbandry- |  |  |  |  |  |  |
| Raw materials...... | 10,520 46 | 3,242 | 5,768 4 | 9,887 13 | 3,813 |  |
| Fully or chiefly manufactured | 14,279 | 428 | 9,103 | 16,145 | 651 | 9,827 |
| Totals, Animal Husbandry. | 24,845 | 3,671 | 14,874 | 26,046 | 4,464 | 14,682 |
|  |  |  |  |  |  |  |
| Raw materials....... | 213,009 98,787 | 5,406 2,032 | 86,218 27,319 | 235,457 83,754 | 5, <br> 1,297 | 102,257 21,890 |
| Fully or chiefly manufactured | 341,000 | 34,615 | 179,066 | 344,731 | 33,550 | 180,396 |
| Totals, Foreign farm Products. | 652,796 | 42,054 | 292,603 | 663,941 | 40,180 | 304,544 |
| All Farm Products-1 |  |  |  |  |  |  |
| All Field Crops- |  |  |  |  |  |  |
| Raw materials....... | 367,396 | 2,767 2,091 | 209,209 42,698 | $\begin{array}{r}381,127 \\ 95 \\ \hline\end{array}$ | 1, 1,341 | 33, 285 |
| Fully or chiefly manufactured | 419,087 | 60,447 | 219,232 | 425,065 | 59,248 | 221,819 |
| Totals, All Field Crops........................ | 901,209 | 65,304 | 471,139 | 902,064 | 62,568 | 494,718 |
|  |  |  |  |  |  |  |
| Raw materials....... | 66,254 33,426 | 6,168 20,046 | 40,668 7,954 | 65,332 <br> 30,980 | 6,366 18,497 | $\begin{array}{r}39,876 \\ 7,374 \\ \hline\end{array}$ |
| Fully or chiefly manufactured. | 124,506 | 53,058 | 30,926 | 129,775 | 52,651 | 33,667 |
| Totals, All Animal Husbandry. | 224,186 | 79,271 | 79,549 | 226,087 | 77,515 | 80,916 |

[^297]
## 14.-Imports according to Origin, by Group and Degree of Manufacture, 1959 and 1960-concluded

| Origin | 1959 |  |  | 1960 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\underset{\text { Countries }}{\text { All }}$ | Britain | United States | $\underset{\text { Countries }}{\text { All }}$ | Britain | United States |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Farm Origin-concluded |  |  |  |  |  |  |
| All Farm Products- | 433,650 |  |  |  |  | 279,489 |
| Raw materias....... | 148,152 | 22,138 | 20,652 | 126,851 | 19,838 | 40,658 |
| Fully or chiefly manufactured................ | 543,593 | 113,504 | 250,158 | 554,841 | 111,899 | 255,486 |
| Totals, Farm Origin . . . . . . . . . . . . . . . . . . . . . . | 1,125,395 | 144,576 | 550,688 | 1,128,151 | 140,083 | 575,634 |
| Wildife Origin |  |  |  |  |  |  |
| Raw materials. | 11,603 | 1,060 | 8,676 | 11,043 | 1,011 | 7,741 |
| Partly manufactured......... | 3,039 | 257 38 | 2,587 | 2,851 | 231 | 2,403 |
| Fully or chiefly manufactured................... | 823 | 38 | 700 | 953 | 37 | 765 |
| Totals, Wildlife Origin. | 15,465 | 1,355 | 11,963 | 14,847 | 1,279 | 10,909 |
| Marine Origin |  |  |  |  |  |  |
| Raw materials. | 6,821 | 25 | 4,548 | 6,830 | 11 | 4,532 |
| Partly manufactured........................................ | 11,022 | -741 | 4,725 | 11,599 | $-_{650}$ | 5,372 |
| Totals, Marine Origin | 17,843 | 766 | 9,273 | 18,429 | 661 | 9,904 |
| Forest Origin |  |  |  |  |  |  |
| Raw materials.... | 12,341 | 578 | 12,250 | 15,668 | 62 | 15,564 |
| Partly manufactured. | 68,362 | 578 | 56,651 | 54,221 | 62 | 45,593 |
| Fully or chiefly manufactured | 196,362 | 7,758 | 171,219 | 202,444 | 9,184 | 172,965 |
| Totals, Forest Origin | 277,065 | 8,336 | 240,119 | 272,334 | 9,246 | 234,121 |
| Mineral Origin |  |  |  |  |  |  |
| Raw materials....... |  | 2,350 | 143,143 | 496,828 | 2,040 | 158,089 |
| Partly manufactured. | 85,328 | 11,527 | 61,934 | 86,100 | 15,448 | 56,252 |
| Fully or chiefly manufactured. | 2,792,434 | 360, 186 | 2,112,516 | 2,684,640 | 363,847 | 2,015,425 |
| Totals, Mineral Origin | 3,347,865 | 374,063 | 2,317,592 | 3,267,568 | 381,336 | 2,229,765 |
| Mixed Origin |  |  |  |  |  |  |
| Raw materials <br> Partly manufactured | 644 $\mathbf{6}, 994$ | 343 | 567 6,086 | 729 6,911 | 350 | 693 5,946 |
| Fully or chiefly manufactured. | . 717,649 | 59,134 | 572,776 | 773,727 | 55,978 | 619,653 |
| Totals, Mixed Origin | 725,288 | 59,477 | 579,429 | 781,368 | 56,328 | 626,292 |
| Recapitulation |  |  |  |  |  |  |
| Raw materials. | 935,163 | 12,369 | 419,062 | 977,558 | 11,407 | 466,108 |
| Partly manufactured. | 311,875 | 34,843 | 177,910 | 276,933 | 35,929 | 150,852 |
| Fully or chiefly manufactured | 4,261,883 | 541,360 | 3,112,093 | 4,228,204 | 541,596 | 3,069,665 |
| Grand Totals. | 5,508,921 | 588,573 | 3,709,065 | 5,482,695 | 588,932 | 3,686,625 |

## Section 6.-Comparison of Value, Price and Volume of Foreign Trade

In recent years there has been a substantial increase in the value of Canada's exports and imports. Changes in the value of trade, however, are the joint product of changes in the volume of goods traded and in the prices at which transactions are conducted. To assess the significance of value changes, it is desirable to isolate the contributions made to them by the price and volume factors.

Special indexes of export and import prices have been developed to provide this information. These indexes are based chiefly on unit values (average prices) calculated from the trade statistics, supplemented by information on wholesale and retail prices. Price relatives are calculated for a sample of commodities representing the greater part of export and import trade, and these relatives are weighted by the percentage of 1948 trade represented by each commodity in the sample in obtaining group and total indexes. By dividing these price indexes into the trade values the effects of price change are removed from the values, or by dividing the price index into an index of values on the same timebase an index is obtained showing changes in the volume of trade from year to year.

The grouping of commodities used in these calculations differs from that of the regular trade statistics, the changes being desirable to simplify the pricing problem. The chief differences are that the first two main groups of the trade statistics have been combined into one group, "agricultural and animal products", and that the sub-group "rubber and its products" has been transferred from this group to the "miscellaneous" group. The declared values of domestic exports and imports have been revised to cover the adjustment for "Special Transactions-Non-Trade". An explanation of that ;adjustment is given at p. 912. Table $\mathbf{1 5}$ shows the revised values of trade adjusted for pricing purposes and the value, price and volume indexes of Canadian trade for 1959-62.
15.-Declared Values, and Value, Price and Physical Volume Indexes of Foreign Trade, by Commodity Group, 1959-62

| Commodity Group ${ }^{1}$ | 1959 | 1960 | $1961{ }^{\text {r }}$ | 1962 |
| :---: | :---: | :---: | :---: | :---: |
|  | Declared Values |  |  |  |
|  | \$'000 | \$'000 | \$'000 | \$'000 |
| Domestic Exports | 5,021,672 | 5,255,575 | 5,754,986 | 6,178,523 |
| Agricultural and animal products | 1,212,381 | 1,142,428 | 1,442,244 | 1,429,613 |
| Fibres and textiles...... | -26,803 | $\begin{array}{r}40,518 \\ 1,591 \\ \hline 19\end{array}$ | 44,661 1,639 | 1,718,306 |
| Wood products and paper. | $1,515,962$ 574,453 | $1,591,919$ 605,960 | $1,639,343$ 596,514 | 1,718, 72075 |
| Non-ferrous metals and products | 1,114,784 | 1,213,999 | 1,209,545 | 1,234,139 |
| Non-metallic minerals and products | 294,235 | 339,569 | 428,586 | 545,508 |
| Chemicals and fertilizers. | 201,729 | 237,687 | 248,326 | 248,399 |
| Miscellaneous.. | 81,324 | 83,495 | 145,766 | 212,291 |
| Imports. | 5,508,921 | 5,482,695 | 5,768,578 | 6,257,814 |
| Agricultural and animal products | 733,062 | 737,710 | 854,375 | ${ }_{481}^{910,090}$ |
| Fibres and textiles...... | 425, 470 | 431,975 | 458,488 | 481,952 |
| Wood products and paper. | 263,203 | - 256,701 | 285,947 | 2, 262,673 |
| Iron and steel and products...... | $2,086,064$ 479,231 | $2,046,258$ 476,633 | $2,021,347$ 514,347 | 2, 599, 037 |
| Non-metallic minerals and products | 698, 138 | 660,749 | 681,002 | 710,949 |
| Chemicals and fertilizers | 334,455 | 346,972 | 371,196 | ${ }_{595}^{395,276}$ |
| Miscellaneous | 489,299 | 525,698 | 578,894 | 595,704 |

For footnote, see end of table.

# 15.-Declared Values, and Value, Price and Physical Volume Indexes of Foreign Trade, by Commodity Group, 1959-62-concluded 


${ }^{1}$ The groups, though classified by component material, differ slightly from conventional groups (see text, p. 912).

## PART III.-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 in order that goods and services may be accepted in partial payment for the products Canada is in a position to export. Furthermore, many commodities that are 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 many 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 businessmen 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, four regional offices in Canada, and a corps of Trade Commissioners stationed around the world.

The highlight of the 1963 trade promotion program of the Department was "Operation World Markets", a comprehensive four-stage campaign which took place from Mar. 23 to May 3. It included a program entitled World Markets Machinery, held Mar. 23 to 31, for which nearly 200 foreign businessmen and government officials were brought to Canada; a National Canadian Samples Show, held in Toronto Apr. 2 to 4, attended by more than 600 buyers from Britain, Ireland, Western Europe, the West Indies and the United States; an Export Trade Promotion Conference, held in Ottawa Apr. 16 to May 3, at which 1,143 Canadian businessmen discussed export opportunities with Trade Commissioners brought from their posts abroad; and a Trade Commissioner Conference which carried out detailed group studies and discussions on special problems encountered in trading areas abroad.

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 is the overseas arm of the Department and is actively engaged in the promotion of Canadian trade and the protection of Canada's commercial interests; 64 offices are maintained in 47 countries.

Every effort is made by the Trade Commissioners to bring Canadian exporters and prospective buyers together. On their own initiative, and in response to requests from the Department and Canadian businessmen, they study potential markets for specific Canadian commodities and services. 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 businessmen 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.

[^298]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 call on government officials, businessmen, trade associations and municipal authorities in an effort to arouse interest in Canadian products. They establish social contacts with commercial interests, thereby developing goodwill for Canada and Canadian 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 businessmen 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 or 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. 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 as the sole representative of Canada.

CANADIAN FOREIGN TRADE OFFICES ABROAD, AS AT SEPT. 21, 1963
Argentina.-Commercial Counsellor, Canadian Embassy, Bartolome Mitre 478, Buenos Aires. Territory includes Paraguay.

Australla.-
Sydney: Commercial Counsellor for Canada, 21st Floor A.M.P. Bldg., Circular Quay, Sydney. Mail: P.O. Box 3952 G.P.O.
Melbourne: Commercial Counsellor for Canada, Mobile Centre, 2 City Road, South Melbourne.
Canberra: Commercial Counsellor, Office of the High Commissioner for Canada, Commonwealth Ave., Canberra.
Austria.-Commercial Counsellor for Canada, Opernringhof, Opernring 1, Vienna 1. Mail: P.O.
Box 106, Vienna 1/15. Territory includes Albania, Bulgaria, Czechoslovakia, Hungary, Romania and Yugoslavia.

Belgrum.-Commercial Counsellor, Canadian Embassy, 35 rue de la Science, Brussels 4. Territory includes Luxembourg, European Economic Community, European Atomic Energy Community and European Coal and Steel Community.
Brazil.-
Rio de Janeiro: Commercial Counsellor, Canadian Embassy, Edificio Metropole, Av. Presidente Wilson 165, Rio de Janeiro. Mail: Caixa Postal 2164-ZC-00.
São Paulo: Consul and Trade Commissioner, Canadian Consulate, Edificio Alois, Rua 7 de Abril 252, São Paulo. Mail: Caixa Postal 6034.

Britain.-
London: Minister (Commercial), Office of the High Commissioner for Canada, One Grosvenor Square, London W.1.
Liverpool: Canadian Government Trade Commissioner, Martins Bank Bldg., Water Street, Liverpool.
Glasgow: Canadian Government Trade Commissioner, Cornhill House, 144 West George St., Glasgow C.2, Scotland.
Belfast: Canadian Government Trade Commissioner, 15-17 Chichester St., Belfast 1, Northern Ireland.

Camgroon.-Commercial Division, Canadian Embassy, Soppo Priso Bldg., rue Joseph Clerc,
Yaounde. Mail: P.O. Box 572. Territory includes Central African Republic, Chad, Congo (Brazzaville) and Gabon.

Ceylon.-Commercial Division, Office of the High Commissioner for Canada, 6 Gregory's Road, Cinnamon Gardens, Colombo. Mail: P.O. Box 1006.
Chile.-Commercial Secretary, Canadian Embassy, 5th Floor, Agustinas 1225, Santiago. Mail: Casilla 771.
Colombia.- Commercial Secretary and Consul, Canadian Embassy, Edificio Banco de Los Andes, Carrera 10, No. 16-92, Bogota. Airmail: Apartado Aereo 8582.' Surface Mail: Apartado 1618. Territory includes Ecuador.
Congo.-Chargé d'Affaires, Canadian Embassy, C.C.C.I. Bldg., Boulevard Albert 1er, Leopoldville 1. Mail: Boite Postale 8341.
Cuba.-Commercial Division, Canadian Embassy, Calle 30, No. 518, esquina 7a Avenida, Miramar, Havana. Mail: Gaveta 6125.

Denmark.-Commercial Counsellor, Canadian Embassy, Prinsesse Maries Allé 2, Copenhagen V. Territory includes Greenland and Poland.

Dominican Republic.-Commercial Secretary and Vice Consul, Canadian Embassy, Edificio Copello 408, Calle El Conde, Santo Domingo. Mail: Apartado 1393. Territory includes Puerto Rico.
France.-Commercial Counsellor, Canadian Embassy, 35 Ave. Montaigne, Paris $8^{e}$. Territory includes Algeria and Morocco.
Germany.-
Bad Godesberg: Commercial Counsellor, Canadian Embassy, Frankengrabenstrasse 35, Bad Godesberg.
Duesseldorf: Consul, Canadian Consulate, Bismarckstrasse 95, 4 Duesseldorf 1.
Hamburg: Consul General, Canadian Consulate General, Ferdinandstrasse 69, Hamburg.
Ghana.-Commercial Counsellor, Office of the High Commissioner for Canada, E115/3 Independence Ave., Accra. Mail: P.O. Box 1639. Territory includes Guinea, Ivory Coast, Liberia, Mali, Mauritania, Togo and Upper Volta.
Greece.-Commercial Counsellor, Canadian Embassy, 31 Vassilissis Sophias Ave., Athens 138. Territory includes Turkey.
Guatemala.-Commercial Counsellor, Canadian Embassy, 5a Avenida 11-70, Zone I, Guatemala City, C.A. Airmail P.O. Box 400. Surface mail: P.O. Box 444 . Territory includes Costa Rica, El Salvador, Honduras, Nicaragua, Panama and Canal Zone.
Harti.-Chargé d'Affaires ad interim and Consul, Canadian Embassy, Route du Canape Vert, St. Louis de Turgeau, Port-au-Prince. Mail: P.O. Box 826.

Hong Kong.-Canadian Government Trade Commissioner, Hong Kong and Shanghai Banking Corporation Bldg., Hong Kong. Mail: P.O. Box 126. Territory includes Cambodia, Communist China, Laos, Viet Nam and Macao.

India.-
New Delhi: Commercial Counsellor for Canada, 13 Golf Links Road, New Delhi 1. Mail: P.O. Box 11. Territory includes Bhutan, Nepal and Sikkim.

Bombay: Canadian Government Trade Commissioner, Gresham Assurance House, Mint Road, Bombay 1-BR. Mail: P.O. Box 886.
Iran.-Commercial Division, Canadian Embassy, Bezrouke Bldg., Corner of Takht Jamshid Ave. and Forsat St., Tehran. Mail: P.O. Box 1610.

Ireland.-Commercial Counsellor for Canada, 66 Upper O'Connell St., Dublin.
IsRaEl.-Commercial Secretary for Canada, 84 Hahashmonaim St., Tel Aviv. Mail: P.O. Box 20140. Territory includes Cyprus.

Italy. -
Rome: Commercial Counsellor, Canadian Embassy, Via G.B. De Rossi 27, Rome. Territory includes Libya and Malta.
Milan: Consul General.
Jamaica.-Commercial Counsellor, Office of the High Commissioner for Canada, 32 Duke St. (corner Duke and Barry Sts.), Kingston. Mail: P.O. Box 225. Territory includes Bahamas and British Honduras.

Japan.-Minister (Commercial), Canadian Embassy, 16, Omote-Machi, 3-Chome, Akasaka, Minato-ku, Tokyo. Mail: c/o Akasaka Post Office, Tokyo. Territory includes Korea and Okinawa.

Lebanon.-Commercial Counsellor, Canadian Embassy, Alpha Bldg., Rue Clemenceau, Beirut. Mail: Boite Postale 2300. Territory includes Iraq, Jordan, Persian Gulf Area, Saudi Arabia and Syria.

Mexaco.-Commercial Counsellor, Canadian Embassy, Melchor Ocampo 463, 7th Floor, Mexico 5, D.F. Mail: Apartado 25364.
netherlands.-Commercial Counsellor, Canadian Embassy, Sophialaan 5-7, The Hague.
New Zraland.-Commercial Counsellor, Office of the High Commissioner for Canada, Government Life Insurance Bldg., Wellington. Mail: P.O. Box 1660. Territory includes Fiji, Samoa, Tahiti and Tonga.

Nigeria.-Commercial Secretary, Office of the High Commissioner for Canada, 4th Floor Barclays Bank Bldg., 40 Marina Road, Lagos. Mail: P.O. Box 851. Territory includes Dahomey, Gambia, Niger, Senegal and Sierra Leone.

Norway.-Commercial Secretary, Canadian Embassy, Fridtjof Nansens Plass 5, Oslo 1. Mail: P.O. Box 1379-Vika. Territory includes Iceland.

Pakistan.-Commercial Secretary, Office of the High Commissioner for Canada, Hotel Metropole, Victoria Road, Karachi. Mail: P.O. Box 3703. Territory includes Afghanistan.

Pero.-Commercial Secretary, Canadian Embassy, Edificio Boza, Carabaya 831, Plaza San Martin, Lima. Mail: Casilla 1212. Territory includes Bolivia.

Pheurppines.-Consul General and Trade Commissioner, Canadian Consulate General, L \& S Bldg., 3rd Floor, 1414 Dewey Blvd., Manila. Mail: P.O. Box 1825. Territory includes Republic of China (Taiwan).

Portugal.-Commercial Counsellor, Canadian Embassy, Rua Marques de Fronteira, No. 8-4에 ${ }^{\circ}$, Lisbon. Territory includes Angola, Azores, Cape Verde Islands, Madeira and Portuguese Guinea.

Rhodesia and Nyasaland, Federation of.-Canadian Government Trade Commissioner, 8th Floor, Grindlays Bank Chambers, Baker Ave., Salisbury. Mail: P.O. Box 2133. Territory includes Seychelles Islands and Zanzibar.

Singapore.-Canadian Government Trade Commissioner, American International Bldg., Robinson Road and Telegraph St., Singapore. Mail: P.O. Box 845. Territory includes Brunei, Burma, Federation of Malaya, Indonesia, North Borneo, Sarawak and Thailand.

South Africa.-
Johannesburg: Canadian Government Trade Commissioner, Mobil House, 17th Floor, Corner Rissik and De Villiers Sts., Johannesburg. Mail: P.O. Box 715. Territory includes Madagascar, Mauritius, Mozambique and Reunion.
Cape Town: Trade Commissioner, 13th Floor, African Life Centre, St. George's St., Cape Town. Mail: P.O. Box 683. Territory includes St. Helena and South West Africa.

Sparn.-Commercial Counsellor, Canadian Embassy, Edificio España, Avenida de Jose Antonio 88, Madrid. Mail: Apartado 117. Territory includes Balearic Islands, Canary Islands, Gibraltar, Rio Muni and Rio de Oro.

Swrden.-Commercial Counsellor, Canadian Embassy, Strandvagen, 7-C, Stockholm. Mail: P.O. Box 14042. Territory includes Finland.

Switzerland.-Commercial Counsellor, Canadian Embassy, Kirchenfeldstrasse 88, Berne. Territory includes Tunisia.

Trintdad and Tobago- - Commercial Counsellor, Office of the High Commissioner for Canada, Colonial Bldg., 72 South Quay, Port-of-Spain. Mail: P.O. Box 125. Territory includes Barbados, Windward and Leeward Islands, British Guiana, French Guiana, Surinam, Guadeloupe and Martinique.

Union or Soviet Sociaust Republics.-Commercial Counsellor, Canadian Embassy, 23 Starokonyushenny Pereulok, Moscow.

United Arab Republic.-Commercial Counsellor, Canadian Embassy, 6 Sharia Rouston Pasha, Garden City, Cairo. Mail: Kasr el Doubara Post Office. Territory includes Aden, Sudan, Ethiopia and Yemen.

United States.-
Washington: Minister (Economic), Canadian Embassy, 1746 Massachusetts Ave., N.W., Washington 36, D.C.
New York City: Deputy Consul General (Commercial), Canadian Consulate General, 680 Fifth Ave., New York City 19. Territory includes Bermuda.
Boston: Consul and Trade Commissioner, Canadian Consulate General, 607 Boylston St., Boston 16.
Chicago: Consul and Trade Commissioner, Canadian Consulate General, 310 South Michigan Ave., Suite 2000, Chicago 4.
Detroit: Consul and Trade Commissioner, Canadian Consulate, 1139 Penobscot Bldg., Detroit 26.

Los Angeles: Consul and Trade Commissioner, Canadian Consulate General, 510 West Sixth St., Los Angeles 14.
New Orleans: Consul and Trade Commissioner, Canadian Consulate General, Suite 1710, 225 Baronne St., New Orleans 12.
Philadelphia: Consul and Trade Commissioner, Canadian Consulate, 3 Penn Center Plaza, Philadelphia 2.
San Francisco: Consul General, Canadian Consulate General, 333 Montgomery St., San Francisco 4. Territory includes Hawaii.
Seattle: Consul General, Canadian Consulate General, The Tower Bldg., Seventh Ave. at Olive Way, Seattle 1. Territory includes Alaska.

Uruguay.-Commercial Division, Canadian Embassy, No. 1409 Avenida Agraciada, Piso 70, Montevideo. Mail: Casilla Postal 852. Territory includes Falkland Islands.

Venezuela.-Commercial Counsellor, Canadian Embassy, Avenida La Estancia No. 10, Ciudad Comercial Tamanaco, Caracas. Mail: Apartado 11452-Este. Territory includes Netherlands Antilles.

Trade Fairs and Missions Branch.-It is the function of this Branch, through its Trade Fairs Abroad Division and its Trade Missions Division, to organize and co-ordinate the trade fairs and missions programs sponsored by the Department. Liaison within the Department and program development are conducted through advisory committees-one on trade fairs abroad and another on trade missions. Each committee is convened and chaired by the Director of the Branch and includes representatives of all trade promotion branches of the Department.

The 1963 program of the Trade Fairs Abroad Division included exhibits in 35 trade fairs held in the United States, Britain and other European countries, Australia and Japan. At many of these exhibitions, selected Canadian companies displayed their products in individual booths within a Canadian exhibit. However, exhibits ranged in size from trade information booths manned by Departmental personnel to 'solo' fairs completely organized by the Department and involving upwards of 100 business firms. Outstanding was the solo fair held in the United States at Philadelphia, from Nov. 11 to 16, in which 103 Canadian firms participated. The 20 trade missions organized in 1963 by the Trade Missions Division included 13 teams of Canadian businessmen sent to study special markets in Europe, the United States, Latin America and the Middle East, and seven groups of business visitors brought to Canada from Argentina, Britain, Jamaica, Japan, Mexico, South Africa and Venezuela. Four missions were concerned with improving Canadian production in the furniture and machinery industries and the remainder to promoting the exports of a particular industry or commodity group. Both Divisions work in close co-operation with trade associations and other interested organizations outside the Department.

International Trade Relations Branch.-The function of the International Trade Relations Branch is to safeguard and improve terms of access for Canadian exporters in foreign markets. In the field of trade policy the Branch 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 trade conferences such as those of the General Agreement on Tariffs and Trade. The Branch endeavours to find practical solutions for tariffs and other difficulties encountered in foreign markets by Canadian exporters and as a service to exporters provides expert information, advice and assistance on foreign tariffs, import and exchange controls, documentation requirements and other foreign governmental regulations affecting Canada's trade. The Branch also has responsibilities in relation to the export financing facilities available for the development of exports of Canadian capital equipment. Through the Area DivisionsCommonwealth, United States, European, Latin American and Asia and Middle East-the Branch is the central point of contact between Canada's Trade Commissioners abroad and the Department in Ottawa.

Trade Services Branch.-The functions of this Branch relate to transportation problems, export and import controls, trade directories, the administration of the 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 user's point of view, keeping in touch with developments and trends in shipping services and in freight rates; the Trade Controls Division administers the controls established under the Export and Import Permits Act; and the Allied Services Division administers the Department's Regional Offices and compiles the Exporter's Directory, a confidential list of firms engaged in or seriously interested in exporting commodities or services.

Commodities Branch.-The principal role of the Commodities Branch is to maintain close contact with the Canadian business community and become familiar with production and supply conditions. Emphasis is placed on the search for products and services, the sale of which can be promoted abroad. The Branch is organized into six divisionsAppliances and Commercial Machinery, Textiles and Consumer Goods, Forest Products, Chemicals, Metals and Minerals, and Engineering and Equipment. The divisions are staffed by Commodity Officers who are specialists in such fields as engineering services and plant equipment, electrical and electronic equipment, transportation and agricultural equipment, ferrous and non-ferrous metals, lumber, pulp and paper, chemicals and petroleum products, rubber and plastic, as well as a wide range of commercial and consumer products. These officers visit manufacturing plants and production facilities, attend and address meetings of business associations and study groups, prepare product reports and market surveys, provide information on trade opportunities, and advise on the export potential of products in markets abroad. In co-operation with the Canadian Government Exhibition Commission, they arrange for the display of Canadian products at trade fairs for the purpose of introducing them into new markets. They organize and accompany trade missions and also serve as delegates to international commodity conferences to study world market conditions and to consider corrective adjustments in conjunction with industry advisers.

Agriculture and Fisheries Branch.-This Branch, concerned primarily with the export of agricultural, fisheries and food products to world markets, operates through four specialized divisions-Grain, Fisheries, Livestock and Animal Products, and Plant Products. It works closely with other branches of the Department, particularly the Trade Commissioners Service and maintains liaison with food processors, agricultural producers, trade associations, provincial marketing boards and with other government departments, both federal and provincial. The Branch is particularly active in those trade fairs sponsored by the Department which exhibit agricultural, food and fisheries products.

Branch officers organize trade missions for the agricultural and fisheries processing industries and arrange for visits of foreign buyers to Canada, thus providing effective stimulation to the export of such products. As a service to these industries, surveys of foreign markets are undertaken as well as special studies relating to trade. A continuing assessment of foreign market conditions with their competitive factors is obtained from Canadian Trade Commissioners abroad, and the Branch keeps the industries fully informed of market potentials or of circumstances that appear to be detrimental to trade. In turn, the Trade Commissioners are kept informed of export possibilities of Canadian products and their competitive position.

Branch functions include participation in activities relating to international commodity agreements. The Director serves as departmental representative on the Interdepartmental FAO Committee, and the Branch provides the secretariat for the Canadian Fur Council and the Interdepartmental Fisheries Trade Committee. During 1963, delegates were provided for the International Coffee Conference, meetings of the International Sugar Council, the FAO Cocoa Study Group, and various commodity meetings under FAO and GATT. Branch officials also serve on many interdepartmental commodity committees.

Trade Publicity Branch.-The Trade Publicity Branch is responsible for the advertising: publicity and public information activities of the Department. Its function is to promote an awareness of, and interest in, Canadian products in foreign markets and to publicize the activities of all Branches, so as to further the Department's objectives both in Canada and abroad. All communications media are employed to these ends, with particular emphasis on the graphic arts. The Branch has three main divisions.

The Editorial and Art Services Division is responsible for the writing, art work, design and production of all advertising and printed matter for the Department. While its interests range over all aspects of the Department's work, its primary objective is to publicize Canadian products in foreign markets. This involves the production of booklets, catalogues, folders, posters and other material prepared for distribution at trade fairs abroad or at points being visited by Canadian trade missions. Advertising campaigns, using all appropriate media, are prepared to attract attention to Canadian exhibits at trade fairs or to acquaint foreign audiences with the services and assistance available to them from the Trade Commissioner Service at posts abroad. The Division produces Canada Courier, a publication on Canadian exports and exporters, which is distributed to businessmen abroad at periodic intervals.

A second Division edits and publishes Foreign Trade, a fortnightly magazine, and Commerce exterieur, a monthly, which are distributed to Canadian subscribers and are designed to inform and assist them in developing export markets. Each issue contains information on foreign exchange rates, trade and tariff regulations, marketing information and other valuable trade data. Articles by Trade Commissioners abroad discuss marketing needs and requirements in the areas they serve.

The Media Relations Division prepares and distributes press releases, articles, photographs, speeches and background information to newspapers, radio and television stations, magazines and trade publications throughout Canada. It provides publicity material for distribution by Trade Commissioners abroad and distributes motion picture films and TV film clips to promote interest in Canada as a supplier of a wide range of commodities.

Export Credits Insurance Corporation.-The Export Credits Insurance 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 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 the imposition of restrictions on the importation 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 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.

The Corporation has authority to enter into certain contracts of insurance, which, although they would impose upon the Corporation a liability for a term or in an amount in excess of that normally undertaken, would, in the opinion of the Minister of Trade and Commerce, be considered in the national interest. 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, buys the promissory notes or other negotiable instruments of the foreign purchaser.

Canadian Government Exhibition Commission.-The Canadian Government Exhibition Commission organizes, designs, produces and administers all Canadian exhibits at fairs and exhibitions abroad in which the Canadian Covernment participates. It also advises private exhibitors and their agents on the best means of displaying Canadian products at trade fairs, and prepares domestic exhibits for government departments and agencies on request. It is responsible for international fairs and exhibitions held in Canada that are financed and sponsored by the Government of Canada.

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 more than $1,000,000$ inquiries from potential visitors to Canada. It operates tourist offices in New York, Chicago and San Francisco in the United States and in London, England.

## Section 2.-The Development of Tariffs

Limitations of space in the Year Book have made it necessary, in regard to tariffs, 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, giving references to those editions of the Year Book where extended treatments may be found.

## 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.

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, as amended effective Sept. 6, 1958, 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 at least equal in percentage to that earned on the sale of similar goods in the country of export. The value for duty may, in no case, 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

[^299]value of the goods, except that it may not be more than 50 p.c. ad valorem. These provisions are designed to offset the advantage foreign exporters may achieve by exporting to Canada at less than the going prices.

Drawback.-There are provisions in the Customs and Excise Tax Acts 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 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 pp. 112-113 of this volume.

## Subsection 2.-Tariff and Trade Arrangements with Other Countries as at Dec. 31, 1962

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.

Canada accords preferential tariff treatment to all members of the Commonwealth and dependent territories with the exception of Hong Kong. In addition, preferences are extended to the Republics of Ireland and South Africa. The preferential arrangements with Britain, Australia, New Zealand, the West Indies, the Federation of Rhodesia and Nyasaland and the Republics of Ireland and South Africa are governed by bilateral trade agreements. A number of Commonwealth countries-India, Pakistan, Ghana, Nigeria, Tanganyika, Uganda and Kenya-do not accord preferential tariff treatment to Canadian goods. Canada's arrangements and agreements with Commonwealth countries have been modified on a number of occasions by the negotiations which Commonwealth countries have had with their non-Commonwealth trading partners in GATT.

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.

On Dec. 31, 1962, there were 44 contracting parties to the Agreement. The names of these, and the dates of their accession, are given in the list on pp. 948-956. In addition, Switzerland, Tunisia, Argentina and Yugoslavia have acceded provisionally. The contracting parties approved the provisional accession of the United Arab Republic, effective Jan. 9, 1963. Cambodia and Spain are expected to become full contracting parties in the near future. Poland also participates in the work of the GATT. Five rounds of major multilateral tariff negotiations have been held under the GATT-at Geneva in 1947, Annecy in 1949, Torquay in 1950-51 and again at Geneva in 1956 and 1960.

Canada already had most-favoured-nation trade agreements with most contracting parties prior to the effective date of the General Agreement. These arrangements continue in force in conjunction with the GATT. As an exception, however, the Canada-United States Trade Agreement was suspended for as long as both parties should continue to be contracting parties to the GATT.

Trade relations between Canada and many 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 mother country and by even less formal arrangements.

# Tariff and Trade Arrangements with Commonwealth Countries as at Dec. 31, 1962 

| Country | Agreement | Principal Terms |
| :---: | :---: | :---: |
| Australla.................. | Trade Agreement signed Feb. 12, 1960; in force June 30, 1960. GATT effective Jan. 1, 1948. | Agreement includes schedules of tariff rates and exchange of British preferential rates on items not scheduled. May be terminated on six months notice. |
| Britain..................... | Trade Agreement signed Feb. 23, 1937, effective Sept. 1, 1937; modified by exchanges of letters Nov. 16, 1938 and Oct. 20, 1947. GATT effective Jan. 1, 1948. | Various concessions are granted by each country including exchange of preferential tariff rates. The Agreement (as modified) includes provisions relating to the Colonies, Dependencies and Trusteeships. |
| Ceylon. | Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective July 29, 1948. | Canada and Ceylon exchange preferential tariff treatment. |
| Cyprus. | Relations continue to be governed by Trade Agreement of 1937 with Britain. | Canada exchanges preferential treatment with Cyprus. |
| Ghana. | Relations continue to be governed by Trade Agreement of 1937 with Britain. <br> GATT effective Oct. 18, 1957. | Canada accords Ghana the British preferential rates, except on cocoa beans. <br> Exchange of most-favoured-nation treatment. |
| India........................ | Since 1897 Canada has unilaterally accorded British preferential treatment without contractual obligation. <br> GATT effective July 8, 1948 . | Canada accords British preferential treatment to India. <br> Exchange of most-favoured-nation treatment. |
| Jamaica, Trinidad, | Canada-British West Indies Trade Agreement signed July 6, 1925, | The parties exchange specified tariff preferences. Agreement |
| Bermuda, British | in force Apr. 30, 1927; Canadian | may be terminated on six |
| Guiana, British | notice of termination of Nov. 23, | months notice. |
| Honduras, and the <br> Leeward and <br> Windward Islands. | 1938, was replaced by notice of Dec. 27, 1939, which continued the Agreement. <br> GATT effective for Trinidad Aug. 31, 1962. <br> Jamaica, Barbados, Bermuda, British Guiana, British Honduras and the Leeward and Windward Islands participate in GATT. |  |
| Malaya, Federation of... | Relations continue to be governed by Trade Agreement of 1937 with Britain. <br> GATT effective Oct. 24, 1957. | Canada and Federation of Malaya exchange preferential tariff treatment. |
| New Zealand............. | Trade Agreement signed Apr. 23, 1932; in force May 24, 1932. GATT effective July $26,1948$. | The parties exchange specific preferences on scheduled goods and reciprocally concede British preferential rates on items not scheduled. May be terminated on six months notice. |

# Tariff and Trade Arrangements with Commonwealth Countries as at <br> Dec. 31, 1962-concluded 

| Country | Agreement | Principal Terms |
| :---: | :---: | :---: |
| Nigeria, Federation of... | Relations continue to be governed by Trade Agreement of 1937 with Britain. <br> GATT effective Oct. 1, 1960. | Canada accords British preferential treatment to Nigeria. <br> Exchange of most-favoured-nation treatment. |
| Pakistan.................... | Canada unilaterally accords British preferential treatment without contractual obligation. GATT effective July 30, 1948. | Canada accords British preferential treatment to Pakistan. <br> Exchange of most-favoured-nation treatment. |
| Rhodesia and Nyasaland, Fedrration of. | Trade Agreement signed Feb. 6, 1958; effective Feb. 7, 1958. <br> GATT effective in Southern Rhodesia May 19, 1948; extended to whole Federation, Oct. 29, 1954. | Canada exchanges preferential tariffs with the Federation of Rhodesia and Nyasaland. |
| Sierra Leone.. | Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective Apr. 27, 1961. | Canada and Sierra Leone exchange preferential tariff treatment. |
| Tanganyika. . . . . . . . . . . | Relations continue to be governed by Trade Agreement of 1937 with Britain. <br> GATT effective Dec. 9, 1961. | Canada accords British preferential treatment to Tanganyika. <br> Exchange of most-favoured-nation treatment. |
| Uganda. | Relations continue to be governed by Trade Agreement of 1937 with Britain. <br> GATT effective Oct. 9, 1962. | Canada accords British preferential treatment to Uganda. <br> Exchange of most-favoured-nation treatment. |

## Tariff and Trade Arrangements with Non-Commonwealth Countries as at Dec. 31, 1962

| Algeria. | Franco-Canadian Trade Agreement of 1933 applied to Algeria. | Since the creation of Algeria as an independent state in 1962, Canada has continued to grant most-favoured-nation rates. |
| :---: | :---: | :---: |
| Argentina. | Trade Agreement signed Oct. 2, 1941; provisionally in force Nov. 15, 1941. <br> Argentina has acceded to GATT provisionally. | Exchange of most-favoured-nation treatment. Provisional application may be terminated on three months notice. |
| Austria. | GATT effective Oct. 19, 1951. | Exchange of most-favoured-nation treatment. |
| Belgium-Luxembourg.... | Convention of Commerce with Belgium-Luxembourg Economic Union (including Belgian colonies) entered into effect Oct. 22, 1924. <br> GATT effective Jan. 1, 1948. | Exchange of most-favoured-nation treatment. May be terminated on one years notice. |

Tariff and Trade Arrangements with Non-Commonwealth Countries as at Dec. 31, 1962-continued

| Country | Agreement | Principal Terms |
| :---: | :---: | :---: |
| Benelux (Belgium-Netherlands-Luxembourg Customs Union). | (See Belgium-Luxembourg and Netherlands). |  |
| Bolivia. | Order in Council of July 20, 1935, accepted Article 15 of BritainBolivia Treaty of Commerce of Aug. 1, 1911. | Exchange of most-favoured-nation treatment. May be terminated on one years notice. |
| Brazil. | Trade Agreement signed Oct. 17, 1941; provisionally in force from date of signing and definitively on Apr. 16, 1943. <br> GATT effective July 31, 1948. | Exchange of most-favoured-nation treatment. |
| Burma... | GATT effective July 29, 1948. | Exchange of most-favoured-nation treatment. |
| Burundi. | Belgo-Canadian Convention of Commerce of 1924 applied to Burundi. | Since Burundi's independence in 1960, Canada has continued to grant most-favoured-nation rates |
| Cambodia. | Franco-Canadian Trade Agreement of 1933 applied to Cambodia. | Since the creation of Cambodia as an independent state in 1955, Canada has continued to grant most-favoured-nation rates. |
| Cameroon.... | Franco-Canadian Trade Agreement of 1933 applied to Cameroons. | Since the creation of Cameroon as an independent state in 1960, Canada has continued to grant most-favoured-nation rates. |
| Central African Republic. | Franco-Canadian Trade Agreement of 1933 applied to Central African Republic. | Since the creation of the Central African Republic as an independent state in 1960, Canada has continued tograntmost-favourednation rates. |
| Crad. | Franco-Canadian Trade Agreement of 1933 applied to Chad. | Since the creation of Chad as an independent state in 1960, Canada has continued to grant most-favoured-nation rates. |
| Chile. | Trade Agreement signed Sept. 10, 1941; provisionally in force Oct. 15, 1941, and definitively on Oct. 29, 1943. <br> GATT effective Mar. 16, 1948. | Exchange of most-favoured-nation treatment. |
| China. | Modus vivendi signed Sept. 26, 1946. | Exchange of most-favoured-nation treatment. May be terminated on three months notice. |
| Colombia.................. | Treaty of Commerce with Britain of Feb. 16, 1866, applies to Canada. Modified by protocol of Aug. 20, 1912, and exchange of notes Dec. 30, 1938. <br> A Trade Agreement between Colombia and Canada was signed Feb. 20, 1916, but has not been put into force. | Exchange of most-favoured-nation treatment. May be terminated on three months notice. |

Tariff and Trade Arrangements with Non-Commonwealth Countries as at
Dec. 31, 1962-continued

| Country | Agreement | Principal Terms |
| :---: | :---: | :---: |
| Congo, Republic of (Brazzaville). | Franco-Canadian Trade Agreement of 1933 applied to Congo (Brazzaville). | Since the creation of Congo (Brazzaville) as an independent state in 1960, Canada has continued to grant most-favoured-nation rates. |
| Congo, Republic of (Leopoldville). | Belgo-Canadian Convention of Commerce of 1924 applied to Congo (Leopoldville). | Since the Congo's independence in 1960, Canada has continued to grant most-favoured-nation rates. |
| Costa Rica. | Modus vivendi signed Nov. 18, 1950; brought into force Jan. 26, 1951. | Exchange of most-favoured-nation treatment. May be terminated on three months notice. |
| Cuba. | GATT effective Jan. 1, 1948. | Exchange of most-favoured-nation treatment. |
| Czechoslovakia............ | Convention of Commerce signed Mar. 15, 1928; in force Nov. 14, 1928. <br> GATT effective May 21, 1948. | Exchange of most-favoured-nation treatment. May be terminated on one years notice. |
| Dahomey. ................. | Franco-Canadian Trade Agreement of 1933 applied to Dahomey. | Since the creation of Dahomey as an independent state in 1960, Canada has continued to grant most-favoured-nation rates. |
| Denmark (including Greenland). | Treaties of Peace and Commerce with Britain of Feb. 13, 1660 and July 11, 1670, apply to Canada. GATT effective May 28, 1950. | Exchange of most-favoured-nation treatment. Declaration of May 9,1912 provides means for separate termination by Dominions on one years notice. |
| Dominican Republic...... | Trade Agreement signed Mar. 8, 1940; in force Jan. 22, 1941. GATT effective May 19, 1950. | Exchange of most-favoured-nation treatment including scheduled concessions. |
| Ecuador................... | Modus vivendi signed Nov. 10, 1950; in force Dec. 1, 1950. | Exchange of most-favoured-nation treatment. May be terminated on three months notice. |
| Egypt. | (See United Arab Republic). |  |
| El Salvador............... | Exchange of notes of Nov. 2, 1937; in force Nov. 17, 1937. | Exchange of most-favoured-nation treatment. May be terminated on four months notice. |
| Ethiopia. | Exchange of notes effective June 3, 1955. | Exchange of most-favoured-nation treatment. May be terminated on three months 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 French overseas territories. | Trade Agreement signed May 12, 1933; in force June 10, 1933. Exchange of notes of Sept. 29, 1934, and additional protocol of Feb. 26. 1035 | Exchange of most-favoured-nation treatment including scheduled concessions. May be terminated on three months notice. |

Tariff and Trade Arrangements with Non-Commonwealth Countries as at
Dec. 31, 1962-continued

| Country | Agreement | Principal Terms |
| :---: | :---: | :---: |
| Gabon. | Franco-Canadian Trade Agreement of 1933 applied to Gabon. | Since the creation of Gabon as an independent state in 1960, Canada has continued to grant most-favoured-nation rates. |
| Germany, Federal Republic of. | GATT effective Oct. 1, 1951. | Exchange of most-favoured-nation treatment. |
| Greece. | Modus vivendi by exchange of notes of July 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) |  |
| Guatemala. | Trade Agreement signed Sept. 28, 1937; in force Jan. 14, 1939. | Exchange of most-favoured-nation treatment. May be terminated on six months notice. |
| Guinea. | Franco-Canadian Trade Agreement of 1933 applied to Guinea. | Since the creation of Guinea as an independent state in 1958, Canada has continued to grant most-favoured-nation rates. |
| Haiti... | Trade Agreement signed Apr. 23, 1937; in force Jan. 10, 1939. GATT effective Jan. 1, 1950. | Exchange of most-favoured-nation treatment. |
| Honduras. | Modus vivendi by exchange of notes signed July 11, 1956, ratified in Honduras, Sept. 5, 1956. | Exchange of most-favoured-nation treatment. May be terminated on three months notice. |
| Iceland. | Although there is no contractual obligation, Canada and Iceland adhere to the terms of a treaty originally concluded between Denmark and Britain on Feb. 13, 1660. | Exchange of most-favoured-nation treatment. |
| Indonesia. . . . . . . . . . . . . . | 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-favourednation treatment from Sept. 5, 1956. | Canada grants most-favourednation tariff rates as long as Iran accords reciprocal treatment. |
| Iraq. . . . . | Special arrangement by Order in Council effective Sept. 15, 1951. | Exchange of most-favoured-nation tariff treatment. |
| Ireland..................... | Trade Agreement signed Aug. 20, 1932; in force Jan. 2, 1933. | Canada grants British preferential tariff in return for preferential rates where such exist and for most-favoured-nation rates on non-preferential items. May be terminated on six months notice. |
| Israth. . . . . . . . . . . . . . . . . | Canada-Britain Agreement of 1937 continued to apply to the State of Israel after its foundation in May 1948. <br> GATT effective July 5, 1962. | Exchange of most-favoured-nation rates. |

Tariff and Trade Arrangements with Non-Commonwealth Countries as at
Dec. 31, 1962-continued

| Country | Agreement | Principal Terms |
| :---: | :---: | :---: |
| Italy. | Modus vivendi by exchange of notes of Apr. 23-28, 1948; effective Apr. 28, 1948. <br> GATT effective Jan. 1, 1950. | Exchange of most-favoured-nation treatment. May be terminated on three months notice. |
| Ivory Coast. | Franco-Canadian Trade Agreement of 1933 applied to the Ivory Coast. | Since the creation of the Ivory Coast as an independent state in 1960, Canada has continued to grant most-favoured-nation rates. |
| Japan. | Agreement on Commerce signed Mar. 31, 1954; effective June 7, 1954. <br> GATT effective Sept. 10, 1955. | Exchange of most-favoured-nation treatment. Remains in force for one year from ratification and thereafter unless terminated on three months notice. |
| Kuwatr. | Canada-Britain Agreement of 1937 applied to Kuwait as a British Protectorate. | Since independence of Kuwait in June 1961, Canada has continued to accord most-favoured-nation rates. |
| Laos. | Franco-Canadian Trade Agreement of 1933 applied to Laos. | Since the creation of Laos as an independent state in 1955, Canada has continued to grant most-favoured-nation rates. |
| Lebanon. | Special arrangement by Order in Council of Nov. 19, 1946. | Canada grants most-favourednation tariff rates as long as Lebanon accords reciprocal treatment. |
| Liberia. | Special arrangement by Order in Council effective Mar. 1, 1955. | Canada grants most-favourednation tariff rates. |
| Liechtenstein. | (See Switzerland). |  |
| Luxembourg. | (See Belgium-Luxembourg). |  |
| Madagascar. | Franco-Canadian Trade Agreement of 1933 applied to Madagascar. | Since the creation of Madagascar as an independent state in 1960. Canada has continued to grant most-favoured-nation rates. |
| Maut, Federation of. | Franco-Canadian Trade Agreement of 1933 applied to Mali. | Since the creation of Mali as an independent state in 1960, Canada has continued to grant most-favoured-nation rates. |
| Mauritana.. | Franco-Canadian Trade Agreement of 1933 applied to Mauritania. | Since the creation of Mauritania as an independent state in 1960, Canada has continued to grant most-favoured-nation rates. |
| Mexico.. | Trade Agreement signed Feb. 8, 1946; in force provisionally same date. Ratifications exchanged on May 6, 1947; definitively in force 30 days from that date. | Exchange of most-favoured-nation treatment. May be terminated on six months notice. |

Tariff and Trade Arrangements with Non-Commonwealth Countries as at Dec. 31, 1962-continued

| Country | Agreement | Principal Terms |
| :---: | :---: | :---: |
| Morocco. | Various agreements applied to French, Spanish and International Zones of Morocco. | Since the creation of Morocco as an independent state in 1956, Canada has continued to grant most-favoured-nation rates. |
| Netherlands. | 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 treatment. May be terminated on one years notice. |
| Nicaragua. | ```Trade Agreement signed Dec. 19, 1946; in force provisionally same date. GATT effective May 28,1950.``` | Exchange of most-favoured-nation treatment. |
| Niger. | Franco-Canadian TradeAgreement of 1933 applied to Niger. | Since the creation of Niger as an independent state in 1960, Canada has continued to grant most-favoured-nation rates. |
| Norway . | Convention of Commerce and Navigation with Britain of Mar. 18, 1826, applied to Canada. GATT effective July 10, 1948. | Exchange of most-favoured-nation treatment. Convention of May 16, 1913 provides means for separate termination by Dominions on one years notice. |
| Panama. | Order in Council of July 20, 1935, accepted Article 12 of BritainPanama 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. |
| Paraguay................. | Exchange of notes of May 21, 1940; in force June 21, 1940. | Exchange of most-favoured-nation treatment. May be terminated on three months notice. |
| Peru........................ | GATT effective Oct. 8, 1951. | Exchange of most-favoured-nation treatment. |
| Philippines. . . . . . . . . . . . . | No agreement. | Canada and Philippines, without contractual obligation, continue to exchange most-favoured-nation treatment (excluding preferences accorded by the Philippines to the United States). |
| Poland. . . . . . . . . . . . . . . . | Convention of Commerce signed July 3, 1935, in force Aug. 15, 1936. | Exchange of most-favoured-nation treatment including scheduled reductions. May be terminated on three months notice. |
| Portugal, Portuguese adjacent Islands and Portuguese overseas Provinces. | Trade Agreement signed May 28, 1954 provisionally in effect July 1, 1954, definitively 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 thereafter unless terminated on three months notice. |

Tariff and Trade Arrangements with Non-Commonwealth Countries as at Dec. 31, 1962-continued

| Country | Agreement | Principal Terms |
| :---: | :---: | :---: |
| Senegal. | Franco-Canadian Trade Agreement of 1933 applied to Senegal. | Since the creation of Senegal as an independent state in 1960, Canada has continued to grant most-favoured-nation rates. |
| South Arrica............. | Trade Agreement signed Aug. 20, 1932; in force Oct. 13, 1932. | Exchange of British preferential rates on scheduled items. May be terminated on six months notice. |
|  | Exchange of notes Aug. 2-31, 1935; effective retroactively from July 1, 1935. <br> GATT effective June 14, 1948. | Exchange of most-favoured-nation treatment. May be terminated on six months notice. |
| Spain and Spanibhpossessions. | Since Aug. 1, 1928, Canada has adhered to Britain-Spain Treaty of Commerce of Oct. 31, 1922. | Exchange of most-favoured-nation treatment. May be terminated on six months notice. |
|  | Trade Agreement signed May 26 , 1954, provisionally in effect July 1, 1954, definitively in force on ratification June 30, 1955. | Supplements and amends BritainSpain Treaty of Commerce. Remains in effect for three years from ratification, and thereafter unless terminated on three months notice. |
| Stweden. | Britain-Sweden Convention of Commerce and Navigation of Mar. 18, 1826 applies to Canada. GATT effective May 1, 1950. | Exchange of most-favoured-nation treatment. Declaration of Nov. 27, 1911 provides means for separate termination by the Dominions on one years notice. |
| Switzerland.............. | Britain-Switzerland Treaty of Friendship, Commerce and Reciprocal Establishment of Sept. 6, 1855 applies to Canada. By exchange of notes Liechtenstein included under terms of this Agreement, effective July 14, 1947. | Exchange of most-favoured-nation treatment. Convention of Mar. 30, 1914 provides means for separate termination by the Dominions on one years notice. |
|  | Switzerland has acceded to GATT provisionally. |  |
| Syrin Arab Republic.. | Special Arrangement by Order in Council of Nov. 19, 1946. | Canada grants most-favoured-nation tariff rates as long as Syria accords reciprocal treatment. |
| Tomo.. | Franco-Canadian Trade Agreement of 1933 applied to Togo. | Since the creation of Togo as an independent state in 1960, Canada has continued to grant most-favoured-nation rates. |
| Tunisia. | Franco-Canadian Trade Agreement of 1933 applied to Tunisia. <br> Tunisia has acceded to GATT provisionally. | Since the creation of Tunisia as an independent state in 1956, Canada has continued to grant most-favoured-nation rates. |

Tariff and Trade Arrangements with Non-Commonwealth Countries as at Dec. 31, 1962-concluded

| Country | Agreement | Principal Terms |
| :---: | :---: | :---: |
| Turkey. | Exchange of notes signed Mar. 1, 1948; in effect Mar. 15, 1948. GATT effective Oct. 17, 1951. | Exchange of most-favoured-nation treatment. May be terminated on three months notice. |
| Union of Soviet Socialist Republics. | Trade Agreement signed Feb. 29, 1956; renewed Apr. 18, 1960. Ratifications exchanged Sept. 16, 1960. | Exchange of most-favoured-nation treatment and undertaking by U.S.S.R. to purchase from Canada twice as much as their sales to Canada up to $\$ 25,000,000$ annually. At least half of Soviet purchases are to be in wheat. In force for three years from date of signature and may thereafter be extended by mutual agreement. |
| United Arab Republic (Egypt). | Exchange of notes Nov. 26 and Dec. 3, 1952; in force Dec. 3, 1952. | Exchange of most-favoured-nation rates. May be terminated on six months notice. |
| United States. . . . . . . . . . | Trade Agreement signed Nov. 17, 1938; suspended as long as both countries continue to be contracting parties to GATT. GATT effective Jan. 1, 1948. | Most - favoured - nation treatment exchanged. |
| Upper Volta (Voltaic Republic). | Franco-Canadian Trade Agreement of 1933 applied to Upper Volta. | Since the creation of Upper Volta as an independent state in 1960, Canada has continued to grant most-favoured-nation rates. |
| Uranda.................... | Belgo-Canadian Convention of Commerce of 1924 applied to Uranda. | Since Uranda's independence in 1960, Canada has continued to grant most-favoured-nation rates. |
| Urdguar................... | Trade Agreement signed Aug. 12, 1936; in force May 15, 1940. Ad ditional protocol signed Oct. 19, 1953. GATT effective Dec. 16, 1953. | Exchange of most-favoured-nation treatment. |
| Veneztela.................. | Modus 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 Agreement of 1933 applied to Viet Nam. | Since the creation of Viet Nam as an independent state in 1955, Canada has continued to accord most-favoured-nation rates. |
| Yugoslavia................ | Trade Agreements Act of June 11, 1928, accepted Article 30 of Britain - Serb - Croat - Slovene Treaty of Commerce and Navigation of May 12, 1927; in force Aug. 9, 1928. <br> Yugoslavia has acceded to GATT provisionally. | Exchange of most-favoured-nation treatment. May be terminated on one years notice. |

## PART IV.-TRAVEL BETWEEN CANADA AND OTHER COUNTRIES*

Travel between Canada and other countries (exclusive of visitors arriving direct from countries other than the United States) consisted of nearly $60,000,000$ trips in 1962. The slight decline from the 1961 figure was attributable to fewer re-entries of Canadians returning from trips to the United States which numbered $27,944,600$ as compared with $29,288,500$ in 1961. Re-entries of Canadians returning direct from overseas countries numbered 253,400 , a figure 30,300 higher than in the previous year. In 1962, $31,656,400$ visitors entered Canada from the United States, 1,182,200 more than in 1961. The basic record of the volume of non-immigrant travel to Canada from overseas countries is not available for 1961 or 1962. Prior to January 1961, transportation companies were required to complete a form for the Department of Citizenship and Immigration which provided certain details on this movement. However, a request from the transportation companies to be relieved of this procedure was granted and, as a result, the record of visits from overseas countries was no longer available.

## 1.-Number and Expenditure of United States Travellers in Canada and Canadian Travellers in the United States, 1950-62

| Year | U.S. Travellers in Canada | U.S. Expenditure in Canada | Canadians <br> Travelling in U.S. | Canadian Expenditure in U.S. | Excess of U.S. Travellers in Canada | Balance of Payments with the U.S. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | \$'000 | No. | \$'000 | No. | \$'000 |
| 1950 | 23,516,700 | 260,000 | 16,000,800 | 193,000 | +7,515,900 | +67,000 |
| 1951. | 24,879,500 | 258,000 | 18,586,900 | 246,000 | +6,292,600 | + 12,000 |
| 1952. | 26,276,800 | 257,000 | 21,512,000 | 294,000 | +4,764,800 | - 37,000 |
| 1953. | 28,024,700 | 282,000 | 23,311,800 | 307,000 | +4,712,900 | - 25,000 |
| 1954. | 26,412,600 | 283,000 | 23,343,400 | 320,000 | +3,069,200 | - 37,000 |
| 1955. | 28,283,400 | 303,000 | 24,753,800 | 363,000 | +3,529,600 | - 60,000 |
| 1956 | 27,666, 500 | 309,000 | 27,076,700 | 391,000 | $+\quad 589,800$ + | - 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 | 448,000 | +1,890,900 | -97,000 |
| 1960. |  |  | 29,045,800 | 462,000 ${ }^{1}$ | + 608,800 | - 87,000 |
| 1961. | 30,474, 200 | 435,000 | 29,288,500 | 459, 0001 | +1,185,700 | - 24,000 |
| 1962. | 31,656,400 | 512,000 | 27,944,600 | 419,0001 | +3,711,800 | + 93,000 |

${ }^{1}$ Includes Hawaii.
Expenditures in 1962 on international travel between Canada and other countries was estimated at well over $\$ 1,000,000,000$, about $\$ 43,000,000$ higher than such expenditures in 1961. Receipts from visitors to Canada amounted to $\$ 562,000,000-\$ 512,000,000$ from residents of the United States and $\$ 50,000,000$ from residents of overseas countries, representing gains of $\$ 77,000,000$ and $\$ 3,000,000$, respectively, over 1961 . The devaluation of the Canadian dollar in May 1962 no doubt contributed to the substantial increase in United States travel expenditures in Canada and, conversely, had the effect of reducing Canadian travel expenditures in the United States. The latter dropped from $\$ 459,000,000$ in 1961 to $\$ 419,000,000$ in 1962 , while Canadian travel expenditures in overseas countries showed a slight increase from $\$ 183,000,000$ to $\$ 186,000,000$. Effective June 25,1962 , as part of a series of official actions to relieve pressure on the Canadian dollar, the customs exemption on Canadian purchases of merchandise in the United States was reduced from $\$ 100$ to $\$ 25$ every four months.

Expenditures by Canadians for travel in other countries have exceeded receipts from residents of other countries travelling in Canada since 1950. The small deficit of $\$ 6,000,000$ occurring in 1951 gradually increased to a maximum of $\$ 207,000,000$ in 1959 and 1960 and then declined to $\$ 160,000,000$ in 1961 and $\$ 43,000,000$ in 1962.

[^300]Travel account between Canada and overseas countries changed from an equilibrium in 1946 to a deficit of $\$ 136,000,000$ in 1961 and 1962. The debit balance in the travel account with the United States was restricted to the decade 1952-61, inclusive, during which period the deficit increased from $\$ 37,000,000$ to a record $\$ 104,000,000$ in 1958 and then dropped to $\$ 97,000,000$ in $1959, \$ 87,000,000$ in 1960 and $\$ 24,000,000$ in 1961 ; in 1962 there was a credit balance of $\$ 93,000,000$. Visitors crossing the border from the United States into Canada increased in number from 30,500,000 in 1961 to $31,700,000$ in 1962 and their expenditures in Canada rose from $\$ 435,000,000$ to $\$ 512,000,000$. In the other direction, however, the number of crossings was reduced from $29,300,000$ in 1961 to $27,900,000$ in 1962 and expenditures of Canadian visitors to the United States dropped from $\$ 459,000,000$ to $\$ 419,000,000$.

## 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, 1961 and 1962

| Year and Item | $\begin{gathered} \text { U.S. } \\ \text { Traveliers } \\ \text { in } \\ \text { Canada } \end{gathered}$ | U.S. Expenditures in Canada | Canadians Travelling in the U.S. ${ }^{1}$ | Canadian Expenditure in the U.S. | Excess of U.S. <br> Travellers in Canada | Excess of U.S. <br> Expenditures in Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | \$'000 | No. | \$'000 | No. | \$'000 |
|  |  |  |  |  |  |  |
| Short-Term (24 Hours or Less)- |  |  |  |  |  |  |
| Automobile. | 15,982,500 | 24,868 | 19,036,900 | 34,562 | -3,054,400 | - 9,694 |
| Aircraft. | 31,200 | 750 | 14,800 | 993 | + 16,400 | - 243 |
| Bus. | 91,100 | 639 | 45,500 | 265 | + 45,600 | + 374 |
|  | 292,500 | 457 | 14,500 | 303 | + 278,000 | + 154 |
| Boat. | 97,800 | 692 | 21,800 | 87 | + 76,000 | + 605 $+\quad 168$ |
| Other (pedestrians, local bus, etc.). | 4,607,400 | 20,995 | 4,684,500 | 19,377 | - 77,100 | + 1,618 |
| Totals, Short-Term | 21,102,500 | 48,401 | 23,818,000 | 55,587 | -2,715,500 | - 7,186 |
| Long-Term (Over 24 Hours)- |  |  |  |  |  |  |
| Automobile. | 8,005,400 | 242,236 | 4,301,800 | 203,041 | +3,703,600 | + 39,195 |
| Aircraft. | 4, 454,400 | 62,684 | 442,900 | 107,608 | + 11,500 | - 44,924 |
| Bus. | 324,300 | 33,634 | 385,300 | 46,082 | - 61,000 | - 12,448 |
| Rail | 219,700 | 28,649 | 252,100 | 38,550 | - 32,400 | - 9,901 |
| Boat. | 367,900 | 19,713 | 88,400 | 3,861 | + 279,500 | + 15,852 |
| Totals, Long-Term | 9,371,700 | 386,916 | 5,470,500 | 399,142 | +3,901,200 | - 12,226 |
| Grand Totals, 1961 | 30,474,200 | 435,317 | 29,288,500 | 454,729 ${ }^{2}$ | +1,185,700 | $-19,412^{2}$ |
| 1962 |  |  |  |  |  |  |
| Short-Term (24 Hours or Less)- |  |  |  |  |  |  |
| Automobile...................... | 16,042,800 | 29,996 | 18,588,000 | 33,480 | -2,545,200 | - 3,484 |
| Aircraft | 35,900 | 891 | 17,200 54 | 1,198 | $\begin{array}{r}18,700 \\ +\quad 32900 \\ \hline\end{array}$ | - $\quad 276$ |
| Bus.. | $\begin{array}{r}87,000 \\ 288 \\ \hline 100\end{array}$ | 756 | 54,100 22,100 | 473 | $+\quad 32,900$ $+\quad 266,00$ | $+\quad 48$ $+\quad 1$ |
| Rail. | 219,300 | 1,299 | 16,600 | 72 | + 202,700 | + 1,227 |
| Other (pedestrians, local, bus, etc.) | 4,903,600 | 25,271 | 4,309,000 | 13,185 | + 594,600 | + 12,086 |
| Totals, Short-Term | 21,576,700 | 58,634 | 23,007,000 | 48,788 | -1,430,300 | + 9,846 |
| Long-Term (Over 24 Hours)- |  |  |  |  |  |  |
| Automobile. | 8,558,600 | 293,013 | 3,765,900 | 169,615 | +4,792,700 | +123,398 |
| Aircraft..... | 446,600 | 64,614 | 467,900 | 113,604 | - 21,300 | - 48,990 |
| Bus. | 368,700 | 40,410 | 376,800 | 41,894 | - 8,100 | - 1,484 |
| Rail | 228,600 | 30, 960 | 228,900 | 36,258 3,954 |  <br> $+\quad 379,100$ | $\begin{array}{r}\text { \% } \\ +20,882 \\ \hline\end{array}$ |
| Boat. | 477,200 | 24,776 | 98,100 | 3,954 | + 379,100 | + 20,822 |
| Totals, Long-Term........... | 10,079,700 | 453,773 | 4,937,600 | 365,325 | +5,142,100 | + 88,448 |
| Grand Totals, 1962 | 31,656,400 | 512,407 | 27,944,600 | 414,113 ${ }^{2}$ | +3,711,800 | + 98,294 ${ }^{2}$ |

${ }^{1}$ Includes substantial amounts of in-transit, commuting and local traffic. ${ }^{2}$ Excludes Hawaii.
3.-Highway Traffic at Canadian Border Points, 1961 and 1962


Many factors influence the flow of American visitors to Canada, among them being the ease of making border crossings, the location of highly populated areas near the International Boundary, the natural attractions of the country, and the currency exchange rate and the economic situation generally. In addition, the recent construction of new roads and bridges has enticed the motor traveller to cross the border; of particular interest has been the completion of the Trans-Canada Highway north of Lake Superior and the international bridges at Prescott and Rainy River in Ontario, connecting the United States with Canada.

Completion of the Trans-Canada Highway north of Lake Superior has had an effect mainly on foreign vehicles entering and departing from Canada at Pigeon River to the west of Lake Superior and Sault Ste. Marie to the east. During the six-month period, May to October 1961 (the latest year for which data are available), 41,500 vehicles entered Canada at Pigeon River and stayed two days or more, compared with 26,800 a year earlier. Entries via Sault Ste. Marie for the same two periods were 81,000 and 62,300 , respectively.

In addition to the increase in crossings, the records show that fewer vehicles returned at the port of entry. It would appear that since the completion of the Trans-Canada Highway the "circle tour" of both Lake Superior in Canada and Lake Michigan in the United States is becoming popular. Motorists using the direct route between Pigeon River and Sault Ste. Marie cover approximately 485 miles in Canada.

The new bridge spanning the St. Lawrence River at Prescott in Ontario also had an effect on the flow of traffic to Canada. In the year ended September 1961, 51,100 foreign automobiles entered Canada at Prescott, 21,000 more than during the previous year. Similarly, the new bridge at Rainy River was responsible for more entries in that area. During the year ended June 1961, 13,900 foreign automobiles crossed into Canada at that point, almost double the number in the previous year.

## CHAPTER XXI.-PUBLIC FINANCE*

## CONSPEGTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing $p .1$ 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, 4 and 5.

A report on the financial statistics of Federal Government business enterprises was issued for the first time in October 1962; analyses of their assets, liabilities, revenues and expenditures are shown in Section 3, pp. 995-996. The first report on the financial statistics of provincial government enterprises, released in the autumn of 1963, is summarized in Section 4, pp. 1004-1005.

Government enterprise finances are usually reflected to a certain extent in the general statistics of the governments. For example, the portion of their profits that is remitted to the parent government appears in Table 1 (receipts from government enterprises); government contributions toward enterprise capital construction and toward their operating deficits appear in Table 2 (payments to own government enterprises); and the direct debt of government enterprises that is guaranteed by the parent government appears in Table 3 (the bulk of the item "guaranteed bonds" represents direct issues of government enterprises).

## 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 1959 and 1960. This net basis has been prepared by deducting from revenue, and 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.

[^301]Inter-government transfers such as subsidy payments by the Federal Government to the provincial governments are unconditional grants and therefore cannot be offset 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.

## 1.-Combined Revenue of All Governments, 1959 and 1960

Note.-Figures are for fiscal years ended nearest Dec. 31.

| Source of Revenue | 1959 |  |  |  | 1960 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Federal | Provincial | Municipal | Total | Federal | Provincial | Municipal | Total |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Taxes-Income- |  |  |  |  |  |  |  |  |
| Corporations | 1,234,216 | 248, 987 | - | 1,483, 203 | 1,380,128 | 269,072 | - | 1,649,200 |
| Individuals.. | 1,752,194 | 54,454 | - | 1,806, 648 | 1,940,560 | 60,678 | - | 2,001,238 |
| Interest, dividends and other income going abroad | 73,353 | - | 4 | 73,353 | 88,174 |  |  | 88,174 |
| General sales................. | 1,002,658 | 209, 211 | 73,435 | 1,285, 304 | 990, 848 | 211,830 | 80, 235 | 1, 282,913 |
| Motor fuel and fuel oil sales. Other sales................ | 二 | 382,560 55,085 | 640 2,207 | 383,200 57,292 | - | 402,909 56,922 | 419 2,784 | 403,328 59,706 |
| Excise duties and special excise taxes. | 620,661 |  | 2,20] | 620,661 | 633,216 | , |  | 633,216 |
| Customs import duties......... | 525, 722 |  | - | 525,722 | 498,698 | - |  | 498,698 |
| Real and personal property |  | 8,330 | 1,157,236 | 1,165,566 | - | 8,386 | 1,287,959 | 1,296,345 |
| Business............... |  |  | 39,1351 | 39,135 | - |  | 43,5811 | 43,581 |
| Estate taxes and succession duties | 88,431 | 56,247 |  | 144, 678 | 84,879 | 60,456 |  | 145, 335 |
| Other. | 1,373 | 153,599 | 8,337 | 163,309 | 1,622 | 177,004 | 9,486 | 188,112 |
| Totals, Taxes | 5,298,608 | 1,168,473 | 1,280,990 | 7,748,071 | 5,618,125 | 1,247,257 | 1,424,464 | 8,289,846 |
| Privileges, Licences and PermitsLiquor control and regulation.. Motor vehicle. Natural resources $\qquad$ Other. $\qquad$ | 10 | 44,920 | - | 44,930 | 11 | 47,149 | - | 47,160 |
|  |  | 164,610 | - | 164,610 |  | 172,013 |  | 172,013 |
|  | 5,924 | 303,311 |  | 309, 235 | 4,166 | 276,869 |  | 281,035 |
|  | 20,211 | 26,698 | 24,748 | 71,657 | 19,159 | 27,884 | 25,152 | 72,195 |
| Totals, Privileges, Licences and Permits. | 26,145 | 539,539 | 24,748 | 590,432 | 23,336 | 523,915 | 25,152 | 572,403 |
| Sales and services. Receipts from Government Enter-prises- | 46, 843 | 37,295 | - | 84,138 | 57,030 | 38,286 | - | 95,316 |
|  |  |  |  |  |  |  |  |  |
| Liquor boards and commissions. Other. |  | 180,227 |  | 180, 227 |  | 186,157 |  | 186,157 |
|  | 88,366 | 6,851 | 36,563 | 131,780 | 108,155 | 6,447 | 30,3 | 5,000 |
| In lieu of municipal taxes from federal and provincial government enterprises. | - | - | 8,826 | 8,826 | - | - | 10.437 | 10,437 |
| Totals, Receipts from Government Enterprises. | 88,366 | 187,078 | 45,389 | 320,833 | 108,155 | 192,604 | 40,835 | 341,594 |
| Other revenue. <br> Non-revenue and surplus receipts. | 235, 274 | 11,240 | 103, 293 | 349, 807 | 254, 813 | 11,837 | 104,463 | 371,113 |
|  | 40,610 | 3,737 |  | 44,347 | 41,145 | 3,420 |  | 44,565 |
| Totals, Net General Revenue excluding Inter-government Transfers. $\qquad$ | 5,735,846 | 1,947,362 | 1,454,420 | 9,137,628 | 6,102,604 | 2,017,319 | 1,594,914 | 9,714,837 |
|  | - | 461,348 | - | 461,348 | - | 480,875 | - | 480,875 |
| Share of income tax on power utilities. | - |  |  |  | _ |  |  | 4,226 |
| Subsidies. |  | 53,772 | 65,393 | 119,165 | - | 53,714 | 68,957 | 122,671 |
| Special payments.............. | - | , | 2,701 | 2,701 | - | - | 2,362 | 2,362 |
| Grants in lieu of municipal taxes on federal and provincial property. |  | - | 23,251 | 23,251 | - | - | 27,753 | 27,753 |
| Grand Totals, Net General Revenue. | 5,735,846 | 2,467,236 | 1,545,765 | 9,748,847 | 6,102,604 | 2,556,134 | 1,693,986 | 10,352,724 |

[^302]
## 2.-Combined Expenditure of All Governments, 1959 and 1960

Note.-Figures are for fiscal years ended nearest Dec. 31.

| Function | 1959 |  |  |  | 1960 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Federal | Provincial | Municipal 1 | Total | Federal | Provincial | Municipal ${ }^{1}$ | Total |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Defence services and mutual aid. | 1,542,545 | - | - | 1,542,545 | 1,534,411 | - | - | 1,534,411 |
| Veterans pensions and other benefits | 293,106 | - |  | 293,106 | 296,071 |  | - |  |
| Health, hospital care and other.. | 226,789 | 436,923 | 68,426 | 732,138 | 267,222 | 508,612 | 65,516 | 841,350 |
| Social Welfare- |  |  |  |  |  |  |  |  |
| Aid to aged persons.......... | 605,3482 | 60,134 | .. | .. | 623, 070 ${ }^{2}$ | 63,010 | .. | . |
| Aid to unemployed and unemployables. | 56,218 | 41,417 | . |  | 67,906 | 54,976 |  |  |
| Family allowances............ | 494, 138 | - | - | 494,138 | 509,396 | - | - | 509,396 |
| National employment services. | 82,456 |  |  | 82,456 | 99,097 |  |  | 99,097 |
| Other......................... | 23,780 | 104,384 | 37,982 | 166,146 | 28,506 | 139,617 | 43,438 | 211,561 |
| Education.. | 69,479 | 602,851 | 658,309 | 1,330,639 | 64,480 | 700,123 | $813,822^{3}$ | 1,578,425 |
| Transportation and Communica-tions- <br> Highways, roads and bridges.. | 108,651 | 675,821 | 345,637 | 1,130,109 | 104,964 | 708,057 | 361,320 |  |
| Other........................... | 267,627 | 4,630 | - | 272,257 | 272,041 | 5,223 |  | 1, 277,264 |
| Natural resources and primary industries. | 286,410 | 174,089 | - | 460,499 | 366,113 | 200,983 | - | 567,096 |
| Debt charges excluding debt retirement. | 657,066 | 54,965 | 117,753 | 829,784 | 654,411 | 66,878 | 95,918 ${ }^{4}$ | 817,207 |
| Payments to own government enterprises. | 154, 252 | 4,717 | 13,919 | 172,888 | 149,158 | 5,472 | 20,202 | 174,832 |
| General government. . | 251,571 | 110,519 | 129,425 | 491, 515 | 265, 603 | 125,150 | 141,447 | 532,200 |
| Protection of persons and property | 76,185 | 125, 625 | 211,847 | 413,657 | 79,187 | 136,264 | 232, 163 | 447,614 |
| Sanitation and waste removal.... |  | - | 134,162 | 134,162 | - | - | 142,182 | 142,182 |
| International co-operation and assistance. | 79,654 | - |  | 79,654 | 81,820 |  |  | 81,820 |
| Other......................... | 368,787 | 62,826 | 136,201 | 567,814 | 406,172 | 78,508 | 195,135 | 679,815 |
| Non-expense and surplus payments. | 499 | 19,361 | - | 19,860 | 520 | 9,746 | - | 10,266 |
| Totals, Net General Expenditure excluding Inter-government Transfers. | 5,644,561 | 2,478,262 | 1,853,661 | 9,976,484 | 5,870,148 | 2,802,619 | 2,111,143 | $\underline{10,783,910}$ |
| Inter-government Transfers- |  |  |  |  |  |  |  |  |
| Tax-sharing arrangements..... | 461,341 | - | - | 461,341 | 480,873 | - | - | 480,873 |
| utilities | 4,753 | - | - | 4,753 | 4,226 |  | - | 4,226 |
| Subsidies....................... | 53,774 | 65,293 |  | 119,067 | 53,718 | 68,692 |  | 122,410 |
| Special payments............. | 1,809 | 1,114 | - | 2,923 | 1,753 | - | - | 1,753 |
| Grants in lieu of municipal taxes on federal and provincial property. | 22,605 | 1,266 | - | 23,871 | 24,722 | 1,464 | - | 26,186 |
| Grand Totals, Net General Expenditure. | 6,188,843 | 2,545,935 | 1,853,661 | 10,588,439 | 6,435,440 | 2,872,775 | 2,111,143 | 11,419,358 |

[^303]Consolidated Debt.-Table 3 gives details of combined debt of all governments for 1959 and 1960 with the aggregate debt of the federal, provincial and municipal governments; the inter-government debt is deducted to arrive at a consolidated government figure.
3.-Consolidated Debt of All Governments, 1959 and 1960

Nore.-Figures are for fiscal years ended nearest Dec. 31.

| Item | 1959 |  |  |  |  |  | 1960 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Federal | Provincial | Municipal | Total | Deduct Inter-government Debt | Consolidated Government Debt | Federal | Provincial | Municipal | Total | Deduct Inter-government Debt | Consolidated Government Debt |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | 8'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Direct Debt- |  |  |  |  |  |  |  |  |  |  |  |  |
| Less sinking funds.. | 85,272 | 618,158 | 132,937 | 838, 367 |  | 836,367 | 17,018 | 655, 863 | 152,076 | 824,957 | 180,127 | 824,957 |
| Net funded debt. | 13, 879,880 | 2,879,463 | 3,671,159 | 20,230,502 | 198,009 | 20,032,493 | 14,115,897 | 3,134,603 | 4,126,379 | 21,376,879 | 189,427 | 21,187,452 |
| Treasury bills ${ }^{2}$... | $2,125,000$ 29,372 | $\underset{8}{46,837}$ | 二 | $2,171,837$ 29,372 | 二 | 2,171,837 | $1,935,000$ 28,513 | $\underset{3}{62,568}$ | - | $1,987,568$ 28,513 | - | $1,987,568$ 28,513 |
| Temporary loans |  | 26,547 | 246,281 | 272,828 | - | 272,828 | - | 31,846 | 263,658 | 295,504 | - | 295,504 |
| Other direct liabilities | 4,850,831 | 374, 238 | 338, 555 | 5, 563, 824 | 47,454 | 5,516,170 | 5,289,877 | 440,723 | 380,974 | 6,111,574 | 55,357 | 6,056,217 |
| Totals, funds) | 20,685,083 | 3,327,085 | 4,255,995 | 28,268,163 | 245,463 | 28,022,700 | 21,369,287 | 3,669,740 | 4,771,011 | 29,810,038 | 244,784 | 20,565,254 |
| Indirect Debt- <br> Guaranteed bonds. $\qquad$ <br> Less sinking funds. $\qquad$ |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 1,430,107 | $\begin{array}{r} 2,996,265 \\ 67,673 \end{array}$ | $\begin{array}{r} 80,141 \\ 1,862 \end{array}$ | $\begin{array}{r} 4,506,513 \\ 69,535 \end{array}$ | $\begin{array}{r} 193,918 \\ 2,039 \end{array}$ | $\begin{array}{r} 4,312,595 \\ 67,496 \end{array}$ | 1,672,690 | $\begin{array}{r} 3,361,686 \\ 82,569 \end{array}$ | $\begin{array}{r} 73,878 \\ 1,555 \end{array}$ | $\begin{array}{r} 5,108,254 \\ 84,124 \end{array}$ | $\begin{array}{r} 242,665 \\ 2,292 \end{array}$ | $\begin{array}{r} 4,885,589 \\ 81,832 \end{array}$ |
|  | 1,430,107 | 2, 228,592 | 78,279 | 4,436,978 | 191,879 | 4,245,099 | 1,672,690 | 3,279,117 | 72,323 | 5,024,130 | 240,373 | 4,783,757 |
| Loans under the Municipal Improvement Assistance Act, 1938. <br> Guaranteed bank loans and other indirect liabilities. |  | 1,841 | - | 1,841 | 1,841 | - | - | 1,636 | - | 1,636 | 1,636 | - |
|  | 2,944,9924 | 150,939 | 15 | 3,095,946 | 2,084 | 3,093,862 | 3,343,623 | 154,728 | 13 | 3,498,364 | 3,742 | 3,494,622 |
| Totals, Indirect Debt (less sinking funds). | 4,375,099 | 3,081,372 | 78,294 | 7,534,765 | 195,804 | 7,338,961 | 5,016,313 | 3,435,481 | 72,336 | 8,524,130 | 245,751 | 8,278,379 |
| Grand Totals. ................... | 25,060,182 | 6,408,457 | 4,334,289 | 35,802,928 | 441,267 | 35,361,661 | 26,385,600 | 7,105,221 | 4,843,347 | 38,334,168 | 490,535 | 37,843,633 |

## 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 of raising "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". In essence, 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, places of business and in some cases retail sales. 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.

The increasing use by both the federal and the provincial governments of their rights in the field of direct taxation in the 1930's resulted in uneconomic duplication and some severe tax levies. Starting in 1941, a series of tax agreements, each normally enduring for a period of five years, were concluded between the federal and the provincial governments to promote the orderly imposition of direct taxes. All provinces surrendered their claims to personal income tax for the duration of the wartime agreements which expired in 1947. The Provinces of Quebec and Ontario did not rent any tax fields under the 1947 agreements. The Province of Quebec did not rent any of its tax fields under the 1952 and 1957 agreements; the Province of Ontario did not rent succession duties under the 1952 agreements and did not rent either succession duties or corporation income tax under the 1957 agreements. Apart from these exceptions all provinces participated in the various tax agreements as fully as possible. Newfoundland rented its tax fields as soon as it entered Confederation.

Under these 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 last two agreements, the federal income tax and death tax otherwise payable in nonparticipating provinces were abated by a fixed percentage to make room for the provincial levies. The Wartime Tax Agreements of $19+2$ are outlined in the 1946 Year Book, pp. 900-901; the 1947 and 1952 Tax Rental Agreements in the 1954 Year Book, pp. 1087-1090; and the 1957 fiscal arrangements in the 1961 Year Book, pp. 1067-1069. The 1962 fiscal arrangements are authorized by the Federal-Provincial Fiscal Arrangements Act, assented to Sept. 29, 1961. They became operative on Apr. 1, 1962 and will run until Mar. 31, 1967.

Basically, the 1962-67 arrangements entail a partial federal withdrawal from the field of direct taxation and the re-entry of all provinces into the vacated area. The Federal Government reduces its personal income tax otherwise payable on income earned in a province, and on income received by a resident of a province, by the following percentages:

[^304]16 p.c. in 1962; 17 p.c. in $1963 ; 18$ p.c. in $1964 ; 19$ p.c. in 1965 ; and 20 p.c. in 1966 . Also, the Federal Government 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. of taxable income earned in Quebec. The additional 1 p.c. reduction in respect of taxable income earned 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. Finally, the Federal Government abates the federal estate tax otherwise payable by 50 p.c. in respect of property situated in a province which levies its own death tax. Only Ontario, Quebec and British Columbia at present levy death taxes in the form of succession duties.

These reductions in federal income tax and estate tax under the terms of the 1962-67 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. Their constitutional position 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) rates of income tax coincide with the amount of the federal abatement.

As part of the 1962-67 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.

Under the terms of 1962-67 arrangements, adjustment grants are made to the Atlantic Provinces in recognition of their special circumstances. These grants amount to $\$ 35,000,000$ per annum and are distributed as follows: $\$ 10,500,000$ to each of the Provinces of Newfoundland, Nova Scotia and New Brunswick, and $\$ 3,500,000$ to the Province of Prince Edward Island. Newfoundland gets an additional $\$ 8,000,000$ annually under the terms of the Newfoundland Additional Grants Act of 1959.

## Subsection 1.-Federal Taxes

## Individual Income Tax

Every individual who is a resident of Canada at any time during a year is liable for the payment of income tax for that year. In addition, every non-resident individual who is employed or carries on business in Canada during a year is required to pay tax on his income from Canadian sources. Canadian taxation practice is based to a large extent on the British experience. This is reflected particularly in the fact that taxation is on the basis of residence rather than citizenship, and in the tax freedom for capital gains. 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 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. These exceptions include travelling expenses of employees who have to travel as they perform their work (such as employees on trains), 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 in full-time attendance at a university or other educational institution in a course at a post-secondary school level may deduct their tuition fees in computing their income.

Having computed his income, the individual then calculates his taxable income by deducting certain exemptions and deductions: for single status an exemption of $\$ 1,000$; for married status an exemption of $\$ 2,000$; for dependent children eligible to receive family allowance $\$ 300$ per child; for other dependants (as defined in the law), $\$ 550$ per dependant; for a taxpayer over 65 years of age, an additional $\$ 500$; for a taxpayer who is blind or confined to a bed or a wheelchair for the whole of the taxation year, an additional $\$ 500$; for charitable donations, up to 10 p.c. of income; and for medical expenses in excess of 3 p.c. of income. In lieu of claiming deductions for charitable donations, medical expenses and membership dues in trade unions or professional societies, 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 under a separate heading.) 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 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. These rates begin at 11 p.c. on the first $\$ 1,000$ of taxable income and increase 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 3 p.c. with a maximum of $\$ 90$ reached at the level of $\$ 3,000$.

In calculating the amount of his income tax, an individual is allowed tax credits under three 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 relative to such income; and (3) Abatement under Federal-Provincial Arrangements-in 1963 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 17 p.c. This abatement will increase by one percentage point a year until it becomes 20 p.c. in 1966.

To a very large extent, individual income tax is payable as the income is earned. Taxpayers in receipt of salary or wages 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. People 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. Here again returns must be filed before Apr. 30 in the following calendar year.

The following statement shows what taxpayers pay at various levels of income. In calculating these taxes it has been assumed that all taxpayers take the standard deduction of $\$ 100$. No allowance has been made for the 20 -p.c. dividend tax credit. In calculating the taxes shown for a married taxpayer with two children eligible for family allowances, a deduction of $\$ 300$ has been allowed for each child.

| Status | Income | Income Tax | Old Age Security Tax |
| :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ |
| Single taxpayer-no dependants............................. | 1,200 | 11 | 3 |
|  | 1,500 | 44 | 12 |
|  | 2,000 | 99 | 27 |
|  | 2,500 | 166 | 42 |
|  | 3,000 | 236 | 57 |
|  | 5,000 | 591 | 90 |
|  | 10,000 | 1,840 | 90 |
|  | 20,000 |  | 90 |
|  | 50,000 | 20,965 | 90 |
|  | 100,000 | 50,855 | 90 |
| Married taxpayer-no dependants......................... |  | 11 |  |
|  | 2,500 | 44 | 12 |
|  | 3,000 | 99 | 27 |
|  | 5,000 | 403 | 87 |
|  |  | 1,544 | 90 |
|  | 20,000 | 5,375 | 90 |
|  | 50,000 | 20,415 | 90 |
|  | 100,000 | 50,205 | 90 |
| Married taxpayer-two children eligible for family allowances. |  |  |  |
|  | 2,800 | 11 | 3 9 |
|  | 5,000 | 301 | 69 |
|  | 10,000 | 1,388 | 90 |
|  | 20,000 | 5,105 | 90 |
|  | 50,000 100,000 | 20,085 49,815 | 90 90 |

The income taxes shown above are abated by 17 p.c. in all provinces. In all provinces except Quebec, Manitoba and Saskatchewan the provincial tax is the same as the federal abatement. Therefore in these provinces the taxes shown above are the combined federal and provincial taxes. In Quebec the provincial tax does not coincide with the federal abatement. In Manitoba and Saskatchewan the provincial tax exceeds the abatement by 6 p.c.

It was announced in the 1963 Budget Speech that taxpayers who establish a manufacturing or processing business in a designated area of slower growth during a two-year period commencing from the date of enactment of the 1963 Income Tax Act Amending Bill would be eligible for a three-year exemption from income tax. As of July 1963, this proposed change had not been brought into force by legislation nor had any area been designated.

## 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). However, they can deduct from tax 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.

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 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. Certain accelerated depreciation provisions are available to taxpayers in certain circumstances and for a limited period of time. Businesses established in surplus manpower areas (officially designated) which produce goods new to these areas or businesses engaged in the production of goods that are new to Canada are allowed to claim depreciation at double the normal rates of capital cost allowance for one year in respect of capital expenditures incurred for the purpose of producing these new goods. This special incentive is available until Jan. 1, 1964. A modernization allowance in the form of a 50-p.c. increase in the first year in the rates of capital cost allowance can also be claimed by a business for expenditures on new capital assets which exceed its expenditures on capital assets in the previous year or its average expenditures on capital assets in the three previous years. This special allowance is available in respect of all depreciable assets eligible for depreciation by the diminishing balance principle which are acquired before Apr. 1, 1964. The 1963 Budget introduced a new incentive measure which, as of July 1963, had not yet been brought into force by legislation. Straight-line depreciation at a rate not exceeding 50 p.c. will be granted in respect of certain new depreciable assets (machinery and equipment that would otherwise fall in class 8 of the Income Tax Regulations) acquired in a 24 -month period commencing on June 14, 1963, 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 and control. To have a degree of Canadian ownership and control, a company must (a) be a resident of Canada, (b) have 25 p.c. of its voting shares beneficially owned by one or more individuals resident in Canada, one or more corporations controlled in Canada, or a combination thereof or have its voting shares listed on a stock exchange in Canada and have no more than 75 p.c. of its voting shares beneficially owned by a nonresident person alone or with associated persons, (c) ensure that at least 25 p.c. of its directors are resident in Canada (this requirement will not apply until 1965). For manufacturing or processing businesses in designated areas of slower growth there is no requirement that they have a degree of Canadian ownership and control to qualify for this 50 -p.c. straight-line depreciation rate.

Expenditures on scientific research by corporations qualify for special tax treatment. Generally speaking, all expenditures on scientific research in Canada may be written off for tax purposes in the year when incurred. In addition, corporations are permitted to deduct from income for tax purposes 150 p.c. of their increased expenditures on scientific research.

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. 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.

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 plus 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 public utility companies and 21 p.c. for investment companies).

In calculating the amount of their income tax, corporations are allowed tax credits under two headings: (1) Foreign I'ax 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; and (2) Abatement under FederalProvincial 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.

A special tax incentive based upon increased sales is available to corporations engaged in manufacturing or processing. This concession consists of cancellation of 50 p.c. of the federal income tax on the first $\$ 50,000$ of taxable income arising from increased sales and cancellation of 25 p.c. of the tax on any additional taxable income arising from increased sales. It was announced in the 1963 Budget Speech that this incentive would not be available for the 1964 and subsequent taxation years.

It was announced in the 1963 Budget Speech that new manufacturing and processing businesses established in designated areas of slower growth during a two-year period commencing from the date of enactment of the 1963 Income Tax Act Amending Bill would be eligible for a three-year exemption from income tax. As of July 1963, this proposed change had not been brought into force by legislation nor had any area been designated.

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 exactly with that taxation year. Until 1963, corporations did not start to pay taxes for a taxation year before the seventh month of that taxation year. In each of the last six months of their taxation year and the following three, they paid one twelfth of their estimated tax for the year (such estimate being based either 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 paid one third 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 had to be filed and the remainder of the tax paid for the year. The 1963 Budget introduced a new set of rules for the payment of corporation income tax which will not become fully operative until early 1966. These rules will require that corporations begin to pay their tax for a taxation year in the fifth month rather than in the seventh month of that taxation year. In each of the last eight months of their taxation year and the following two, they will pay one twelfth of their estimated tax for the year (such estimate will continue to be 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 will 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 will have to be filed. In order to move on to the new pattern, it will be necessary for corporations to pay their tax for each of two taxation years within a payment period of eleven months. The first taxation year to be so compressed within eleven months for the purpose of moving forward the payment period of corporation income tax will be the first one to end after Nov. 30, 1963. The second will be the immediately succeeding one. As of July 1963, this proposed change had not been brought into force by legislation.

## Taxation 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 derived from carrying on business in Canada or from employment in Canada 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.)

Furthermore, the Income Tax Act provides for 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, dividends, rentals, royalties, income from a trust or estate and alimony. This tax applies whether the income goes to non-resident individuals or corporations. The rate on royalties on motion picture films is only 10 p.c. The 1963 Budget announced that the 15 -p.c. rate on dividends paid by companies resident in Canada to non-resident persons would be reduced to 10 p.c. when paid by a company that has a degree of Canadian ownership and control (see p. 968). This change would be effective for dividends paid after June 13, 1963. At the same time, the 1963 Budget announced that the 15-p.c. rate on dividends paid by companies resident in Canada to non-resident persons would be increased to 20 p.c. effective from Jan. 1, 1965, when paid by a company that has not a degree of Canadian ownership and control. As of July 1963, these proposed changes had not been translated into legislation.

The non-resident tax is withheld at the source by the Canadian payer. It is an impersonal tax levied without regard to the status or other income of the non-resident recipient. Non-residents who receive only this kind of income from Canada do not file returns in Canada.

## Special Tax on Branch Businesses

Profits earned in Canada by a non-resident corporation carrying on business through a branch or permanent establishment in Canada are subject to an additional tax of 15 p.c. This 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. The 1963 Budget announced that the rate of this tax would be increased to 20 p.c., effective from Jan. 1, 1965. As of July 1963, this proposed change had not been translated into legislation.

## 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 and a general deduction of $\$ 4,000$ from aggregate taxable value of gifts 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 estate has been determined, estate debts 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 bequests to charitable organizations in Canada. After these deductions, the amount remaining 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 valued 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 $\$ 00,000$ in respect of a deceased male survived by a spouse, or in respect of a deceased female 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 (under 21). 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.

As already stated, there is an abatement from federal estate taxes otherwise payable, in respect of provincial succession duties. Generally, the abatement is a deduction of 50 p.c. from the federal tax otherwise payable in respect of property situated in a province that levies succession duties.

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 $\$ 15,000$.) Where property is subject to provincial duties the 15-p.c. tax is abated by 50 p.c.

## Excise Taxes

The Excise Tax Act levies a general sales tax and special excise taxes. These taxes are levied on goods imported into Canada and on goods produced in Canada but are not levied on goods exported.

General Sales Tax.-An 8-p.c. sales tax 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 referred to below. An old age security tax of 3 p.c. is levied on the same basis as the 8-p.c. tax, bringing the total sales tax to 11 p.c.

Many classes of goods are exempt from sales tax. Foodstuffs and fuels for lighting or heating are generally exempt as well as articles and materials used by public hospitals, the products of farms, forests, mines and fisheries, and most equipment used in farming and fishing. Also a variety of items are exempt when purchased by municipalities.

It was announced in the 1963 Budget that the application of the federal sales tax would be extended to building materials and production machinery which had previously been exempt, the proposed change to take place by stages. The rate applicable between June 13, 1963 and Apr. 1, 1964 will be 4 p.c.; it will rise to 8 p.c. on Apr. 1, 1964 and to the full 11 p.c. (the 3-p.c. old age security rate being the last one to be added) on Jan. 1, 1965. As of July 1963, this proposed change had not been translated into legislation.

Special Excise Taxes.-The Excise Tax Act provides for a number of special excise taxes which are 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. Articles subject to special excise taxes include jewellery, cosmetics, toilet articles, radios, record players and television sets. Tobacco products and wines are also taxed under the Excise Tax Act.

The special excise taxes levied at present are listed as follows:-

| Cigarettes | $2 \frac{1}{2}$ cents per 5 cigs. |
| :---: | :---: |
| Cigars. | 15 p.c. ad valorem |
| Jewellery, including clocks, watches, jewellery, articles of ivory, amber, shell, precious or semi-precious stones, goldsmiths' and silversmiths' products except gold-plated or silver-plated ware for the preparation or serving of food or drink. | 10 p.c. ad valorem |
| Lighters. | the greater of 10 cents per lighter or 10 p.c. ad valorem |
| Playing cards. | 20 cents per pack |
| Radios. | the greater of $\$ 2$ per radio or 15 p.c. ad valorem |
| Phonographs and television sets. | 15 p.c. ad valorem |
| Tubes for radios, phonographs and television sets, not including television picture tubes, priced under $\$ 5$ per tube. | the greater of 10 cents per tube or 15 p.c. ad valorem |
| Television set picture tubes. | 15 p.c. ad valorem |
| Slot machines-coin, disc or token-operated games or amusement devices. | 10 p.c. ad valorem |
| Matches. | 10 p.c. ad valorem |
| Tobacco-pipe tobacco, cut tobacco and snuff | 80 cents per lb. |
| Tobacco pipes, cigar and cigarette holders and cigarette rolling devices......... | 10 p.c. ad valorem |
| Toilet articles, including cosmetics, perfumes, shaving creams, antiseptics, etc.. | 10 p.c. ad valorem |
|  |  |
| Wines of all kinds containing not more than 7 p.c. absolute alcohol by volume Non-sparkling wines containing more than 7 p.c. absolute alcohol by volume | 25 cents per gal. |
| Non-sparkling wines containing more than 7 p.c. absolute alcohol by volume <br> but not more than 40 p.c. proof spirit. <br> Sparkling wines. | 50 cents per gal. $\$ 2.50$ per gal. |
| Insurance premiums paid to British or foreign companies not authorized to transact business in Canada or to non-resident agents of authorized British or |  |
| foreign companies........................................................... | 10 p.c. of net premium for property, surety, fidelity and liability insurance. (Most other kinds of insurance are exempt.) |

* These taxes apply only to wines manufactured in Canada. The customs tariff on wines includes a levy to correspond to these taxes on domestic production.

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.c. Cigarettes, cigars and tobacco are subject to further taxes under the Excise Act (referred to as excise duties).

## Excise Duties

The Excise Act levies taxes (referred to as excise duties) upon alcohol, alcoholic beverages and tobacco products produced in Canada. These duties are not levied on imported goods but the customs tariff on these products includes a levy to correspond to 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 industries, or for fuel, light or power, or for any mechanical purpose. The various duties are as follows:-

$$
\begin{aligned}
& \text { On every gallon of the strength of proof distilled in Canada...................... } \$ 13.00 \\
& \text { On every gallon of the strength of proof used in the manufacture of - }
\end{aligned}
$$

Canadian Brandy.-Canadian brandy is a spirit distilled exclusively from juices of native fruits without the addition of sweetening materials. It is subject to a duty of $\$ 11$ per gal.

Beer.-All beer or other malt liquor is subject to a duty of 38 cents per gal.
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 which have already been described. The rates of duty are as follows:-

| On manufactured tobacco of all descriptions, except cigarettes | 35 cents per lb. |
| :---: | :---: |
| Cigarettes weighing not more than 3 lb . per thousand (nearly all of the cigarettes used in Canada are of this type) | \$4.00 per thousand |
| Cigarettes weighing more than 3 lb . per thousand. | \$5.00 per thousand |
| Cigars. | \$2.00 per thousand |
| Canadian raw leaf tobacco when sold for consumption | 10 cents per lb. |

## 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:-

| Cigarettes. | 9.00 per thousand (or 18 cents per pack of 20 cigarettes) p the 11-p.c. sales tax on the manufacturer's sale price |
| :---: | :---: |
| Manufactured tobacco. | $\$ 1.15$ per lb. plus the 11-p.c. sales tax on the manufacturer's sal price |
| Ci | 2.00 per thousand plus the $15-$ p.c. special excise ta 11-p.c. sales tax 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 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

[^305]to Canada from countries within the British 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 Tariffs 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 which apply on any particular item may be obtained from the Department of National Revenue which is responsible for administering the Customs Tariff.

## 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 deriving income from activities or operations carried out therein. Only the Provinces of Ontario and Quebec impose special taxes on corporations and only the Provinces of Ontario, Quebec and British Columbia impose a tax on property passing at death. Under the terms of the existing federalprovincial fiscal arrangement, the Federal Government makes payments called "equalization payments" to some provinces in recognition of the fact that the potential 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 an agreed upon level. For some provinces these payments constitute a very important source of revenue.

Some of the more important provincial levies are reviewed briefly below.

## 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 income tax otherwise payable at full federal rates and are collected by the Federal Government on behalf of these provinces. In Quebec, provincial income tax is levied at graduated rates that progress from 2.5 p.c. on the first $\$ 1,000$ of taxable income to a maximum of 13.2 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 income tax liability computed at full federal rates for 1963 are: Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Ontario, Alberta and British Columbia each 17 p.c., Quebec approximately 18 p.c. and Manitoba and Saskatchewan each 23 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 is imposed on taxable income in the province 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. 965). All provinces except Ontario and Quebec have signed agreements for the collection of their income taxes by the Federal Government.

## 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.

Prince Edward Island also imposes a tax on tobacco sold at retail: 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. Specific sales taxes on tobacco products are also levied in New Brunswick, Quebec and Manitoba.

## 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 5 p.c. These provinces are Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Quebec, Ontario, Saskatchewan and British Columbia. In the Province of Quebec, the general rate is 4 p.c. but the province allows its municipalities to levy an additional 2 p.c. for municipal purposes.

## Amusement Taxes

Each of the provinces with the exception of Alberta, Saskatchewan and British Columbia 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 13 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:-

|  | Gasoline | Diesel Fuel |  | Gasoline | Diesel Fuel |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | cts. | cts. |  | cts. | cts. |
| Newfoundland. ${ }_{\text {a }}$. | 19 | 19 | Ontario. | 13 | 18.5 |
| Prince Edward Island | 18 | 18 | Manitoba........... | 14 | 17 |
| Nova Scotia.......... | 19 | 27 | Saskatchewan...... | 14 | 17 |
| New Brunswick...... Quebec........... | 18 15 | 23 21 |  | 12 | ${ }_{15} \dagger$ |
| Quebec............... | 15 | 21 | British Columbia... | 13 | 15 |

[^306]
## Motor Vehicle Licences and Fees

Each province also levies a fee on the annual registration of motor vehicles. This registration is compulsory and each vehicle is issued with licence plates for the year. The rates of this licence fee vary from province to province. The amount to be paid may be assessed in relation to the weight of the car, the number of cylinders of the engine, the age of the vehicle and the wheel base, or at a flat rate. The operator or the driver of a motor vehicle must also register annually and pay a fee for a new driver's licence; in Alberta and British Columbia, drivers' licences must be renewed every five years at a cost of $\$ 5$; in Quebec they must be renewed every two years, also at a cost of $\$ 5$. Alberta, in addition to registration fees, imposes a milage tax on buses, based on milage operated outside city limits by public service vehicles carrying passengers.

## 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.

## 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 income in excess of $\$ 10,000$ and in British Columbia the tax is 10 p.c. on income in excess of $\$ 25,000$. In Ontario, one third of the tax is allowed as a deduction from the corporate income tax in the case of corporations, 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 while Ontario levies 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 ranges from $\$ 20$ to $\$ 50$ for each place of business with the higher amounts being levied in the cities of Montreal and Quebec. 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 province 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 price at which ownership of land is transferred. In Ontario a straight one fifth of 1 p.c. tax is imposed. In Alberta, registration fees proportionate to the conveyancing services rendered are charged and in the case of transfers and mortgages the fees are assessed on the value of the land transferred or the amount of the mortgage. In addition, there is an Assurance Fund fee charged on transfers and mortgages which guarantees title in certain circumstances. The registration fee on transfers is one half of 1 p.c. up to $\$ 1,000$, one tenth of 1 p.c. from $\$ 1,000$ to $\$ 25,000$, and one twentieth of 1 p.c. over $\$ 25,000$; the Assurance Fund fee is one fifth of 1 p.c. up to $\$ 5,000$ and one tenth of 1 p.c. thereafter. The registration fee on a mortgage is $\$ 3$ up to $\$ 1,000$, one tenth of 1 p.c. from $\$ 1,000$ to $\$ 50,000$ and one twentieth of 1 p.c. thereafter. The Assurance Fund fee on a mortgage is one fortieth of 1 p.c.

In Quebec, a tax of $2 \frac{1}{2}$ p.c. of the purchase price is imposed only when property is transferred under the Bankruptcy or Winding-Up Acts. The Provinces of British Columbia, Saskatchewan and Manitoba do not have a land transfer tax but have an equivalent in the land title fees which are based on land values.

## 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:-

| res sold, transferred or assigned valued at- |  |
| :---: | :---: |
| Under \$1 | $1 / 10 \mathrm{th}$ of 1 p.c. of value |
| \$ 1 to \$ 5 | 1/4 cent per share |
| \$ 5 to \$ 25. | 1 cent 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 $1 / 10$ th of 1 p.c. of value in excess of $\$ 150$ |
| Bonds and debentures. | 3 cents for every $\$ 100$ or fraction thereof of par value. |

## 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 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.

## 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 $\$ 6$. Nova Scotia and New Brunswick also impose property taxes of limited application.

## Race Tracks Tax

Ontario levies a tax upon operators of race meets and upon holders of winning tickets 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. Alberta levies a pari-mutuel tax of 5 p.c. on money bet in the province on horse races.

## 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. The revenues from such taxes are used to pay for street maintenance, schools, police and fire protection, snow removal in certain communities and other community services. 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. 975). Electricity and gas are taxed at the consumer level in some western municipalities while 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 while others charge both a licence fee and business tax. In Nova Scotia, all but one of the municipalities tax personal property (stock in trade, equipment, etc.) the same as real property.

## 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-three 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. 731-736.

## 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 required to contribute at a rate proportional with the hazards of the industry. See also pp. 744-745.

## 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. 262-265.

## 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 definitions 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 Public Accounts of Canada. 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 Public Accounts of Canada presentation is retained for continuity and also 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, 1961 and 1962.
4.-Details of Net General Revenue of the Federal Government, Years Ended Mar. 31, 1961 and 1962

| Source | 1961 | 1962 | Source | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Taxes- | \$'000 | \$'000 | Privileges, Licences and Per- | \$'000 | \$’000 |
| Income- |  |  | mits- |  |  |
| Corporations ${ }^{1}$. | 1,380, 128 | 1,302,179 | Natural resources. | 4,166 | 3,805 |
| Individuals ${ }^{1}$ : $7 . \ldots \ldots$ | 1,940,560 | 2,051,606 | Other. | 19,170 | 20,585 |
| Interest, dividends and other income going abroad | 88,174 | 112,306 | Sales and services other than institutional. | 57,030 | 64,000 |
| General sales ${ }^{1}$ | 990,848 | 1,044,557 | Fines and penalties............. | 1,877 | 1,338 |
| Excise Taxes- Special |  |  | Exchange fund profits......... | 32,536 | 32,606 |
| Alcoholic beverages. | 199,109 | 206,277 | Receipts from government en- |  |  |
| Tobacco...... | 342,675 | 367,386 | terprises ................. | 108,155 | 122,427 |
| Automobiles. | 59,627 | 25, 270 | Bullion and coinage. | 8,676 | 8,144 |
| Customs import duties. | 31,805 498,698 | 24,703 | Postal service. | 202,004 | 213,579 |
| Succession duties and estate | 498,698 | 534,516 | Other revenue | 9,720 | 9,975 |
| (tares....................... | 84,879 1,622 | 84,579 1,043 | Non-revenue and surplus receipts. | 41,145 | 18,477 |
| Totals, Taxes. | 5,618,125 | 5,754,422 | Totals, Net General Revenue. | 6,102,604 | 6,249,358 |

${ }^{2}$ Includes old age security taxes.
Table 5 gives details of expenditure by function for the years ended Mar. 31, 1961 and 1962 and Table 6 gives details of the amounts paid by the Federal Government to provincial governments and municipal corporations in the same years.

## 5.-Details of Net General Expenditure of the Federal Government, Years Ended Mar. 31, 1961 and 1962



[^307]6．－Payments by the Federal Government to Provincial Governments and Municipal Corporations，Years Ended Mar．81， 1961 and 1962

| Year，Payee and Purpose | Nfid． | P．E．I． | N．S． | N．B． | Que． | Ont． | Man． | Sask． | Alta． | B．C． | All <br> Prov－ inces | Yukon | N．W．T． | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1961 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 |
| Provincial Governments |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Tax－sharing arrangements． | 20，460 | 4，802 | 32，243 | 26，749 | 70，366 | 113，792 | 40，078 | 40，578 | 57，146 | 73，686 | 479，900 | 435 | 538 | 480，873 |
| Share of income tax on power utilities． | 1730 | ， 42 | － 345 | 115 | 1，221 | ${ }^{578}$ | 27 |  | 1，449 | － 260 | 4，226 | － |  | 4，226 |
| Subsidies．．．．．．．．．．．．．．．．．．．．．．．．．．．． | 17，069 | 3，157 | 9，557 | 9，179 | 3，242 | 3，641 | 2，054 | 2，092 | 2，358 | 1，281 | 53，630 | 40 | 48 | 53，718 |
| Grants－in－Aid and Shared－Cost Contribu－ tions－ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Trans－Canada Highway．．．．．．．．．．．．．． | 6，579 | 551 | 3，257 | 3，461 | － | 17，869 | 542 | 34 | 268 | 16，135 | 48，696 | － | － | 48，696 |
| Roads leading to resources | 798 | 1，466 | 1，064 | 784 | 322 | 1，504 | 1，602 | 1，940 | 1，536 | 1984 | 12，000 | － |  | 12，000 |
| Other transportation．．． |  |  | 716 | 254 | 465 | 1，878 | 365 | 333 |  | 1，515 | 5，526 | －180 | － | 5，526 |
| Hospital insurance and diagnostic services． | 5，095 | 1，011 | 9，595 | 7，914 | 13，937 | 84，484 | 13，049 | 14，454 | 16，906 | 22，493 | 188，938 | 169 | 262 | 189，369 |
| General Health Grants－ Hospital construction．．．．．．．．．．．．．．．．．．． | 71 | 169 | 1，323 | 307 | 4，956 | 6，999 | 1，201 | 803 | 322 | 1，354 | 17，595 | － | － | 17，595 |
| General public health | 327 | 123 | － 751 | 461 | 2，638 | 2，617 | 704 | 675 | 986 | 1，192 | 10，472 | － | 49 | 10，521 |
| Tuberculosis control | 126 | 29 | 146 | 157 | 1，274 | 785 | 177 | 151 | 211 | 286 | 3，342 | 22 | 12 | 3，376 |
| Mental health．．．．． | 210 | 99 | 372 | 313 | 2，417 | 2，622 | 406 | 395 | 631 | 656 | 8,121 | 20 | － | 8，141 |
| Cancer control． | 23 | 12 | 42 | 62 | 915 | 1，039 | 181 | 186 | 252 | 305 | 3，017 | － | 3 | 3,020 |
| Public health researc | － | － | 48 | － | 594 | ． 578 | 44 | 50 | 82 | 63 | 1，459 | － | 8 | 1，487 |
| Other general health gra | 88 | 15 | 193 | 192 | 1，208 | 1，115 | 283 | 226 4 | 264 | 287 | 3，871 | － | 2 | 3，873 |
| Other health．．．． | 1，708 | 217 | 1，608 | 1，747 | 10，977 | 6，629 | 1，601 | 1，770 | 2，009 | 2，332 | 3， 30， | 16 | 43 | 30，657 |
| Blind persons＇allowances | 208 | 40 | 381 | 342 | 1，457 | 841 | 187 | 196 | 221 | 269 | 4，142 | 1 | 19 | 4，182 |
| Disabled persons＇allowance | 389 | 231 | 848 | 634 | 7，996 | 4，163 | 455 | 484 | 558 | 643 | 16，379 | 1 | 6 | 16，386 |
| Unemployment assistance． | 2，833 | 111 | 1，609 | 1，396 | 14，165 | 12，916 | 3，277 | 2，270 | 2，558 | 10，313 | 51，446 | 54 | 20 | 51，520 |
| Other social welfare． | 10 | 3 | 14 | 18 | 1 | 98 | 25 | 27 | 19 | 10 | 225 | － | － | 225 |
| Campground and pienic area development． | 70 | 10 | 52 | 71 | 10 | 930 | 181 | 182 | 266 | 410 | 2，182 | 9 | 9 | 2，200 |
| Vocational training | 235 | 25 | 594 | 992 | 41 | 3，292 | 533 | 910 | 822 | 882 | 8，426 | 11 | 16 | 8，453 |
| Other education | － | － | 9 | － | 2 | 184 | 12 | 11 | 2 | 21 | 241 |  |  | 241 |
| Forests． | 67 | 24 | 62 | 625 | 465 | 650 | 170 | 138 | 329 | 912 | 3，442 | － | － | 3，442 |
| Lands－settlement and | 150 | 85 | 146 | 114 | 1，004 | 103 | 534 | 356 | 1，111 | 181 | 3，784 | － | － | 3，784 |
| Other natural resourc | 19 | 49 | 118 | 37 | 123 | 33 | 58 | 40 |  | 28 | 505 | － | － | 505 |
| Oth | 85 | 14 | 375 | 289 | 1，686 | 3，272 | 383 | 931 | 1，960 | 2，220 | 11，215 | 3 | － | 11，218 |
| Totals，Grants－in－Aid， | 19，093 | 4，286 | 23，339 | 20，265 | 66，703 | 154，633 | 25，976 | 26，546 | 31，417 | 63，498 | 435，756 | 306 | 464 | 436，528 |
| Totals，Pald to Provincial Governments． | 56，752 | 12，287 | 65，485 | 56，308 | 141，532 | 272，644 | 68，135 | 69，274 | 02，370 | 138，725 | 073，512 | 781 | 1，050 | 975，343 |
| Municlpal Corporations <br> Grants in lieu of taxes on federal property | 147 | 102 | 2，135 | 1，075 | 4，872 | 9，937 | 1，454 | 846 | 1，590 | 2，443 | 24，601 | 38 | 83 | 24，722 |
| Special grants．．．．．．．．．．．．．．．．．．．．． | － | － | － | 1，800 | － | 207 | － | － | － | － | 1，807 | － | － | 1，807 |
| Grants－in－Aid and Shared－Cost Contribu－ tions－ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Transportation． | 5 | － | 4 | 147 | 489 | 3，017 | 297 | 170 | 301 | 192 | 4，622 | － | － | 4，622 |
| Health | 二 | 二 | 57 | 二 | －187 | 381 | － 57 | －180 | 401 | 834 | ＋ 381 | 二 | 二 | ＋ 381 |
| Schools operated by local authorities Other | 二 | － | 57 329 | 二 | 187 | 381 1,511 | 57 | 180 | 401 | 634 41 | 1,750 1,881 | 二 | － | 1,750 1,881 |
| Totals，Paid to Municipal Corporations． | 152 | 102 | 2，525 | 2，822 | 5，548 | 15，287 | 1，808 | 1，198 | 2，292 | 3，310 | 35，042 | 38 | 83 | 35，163 |
| Grand Totals，1961．．．．．．．．．．． | 56，904 | 12，389 | 68，010 | 59，130 | 147，080 | 7，931 | 69，943 | 70，470 | 94，662 | 42，035 | 08，554 | 819 | 1，133 | 10，506 |

6．－Payments by the Federal Government to Provincial Governments and Municipal Corporations，Years Ended Mar．31， 1961 and 1962
－concluded

| Year，Payee and Purpose | Nfld． | P．E．I． | N．S． | N．B． | Que． | Ont． | Man． | Sask． | Alta． | B．C． | All <br> Prov－ inces | Yukon | N．W．T． | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1962 | \＄＇000 | §＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 |
| Provincial Governments |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Tax－sharing arrangements． | 20，078 | 4，781 | 32，317 | 26，233 | 60，448 | 120，652 | 40，411 | 40，569 | 58，385 | 74，382 | 478，256 | 446 | 567 | 479，269 |
| Share of income tax on power utilities． |  | 54 | 475 |  | 2，064 | 651 |  |  | 1，870 | 928 | 6，396 |  |  | 6，${ }^{695}$ |
| Subsidies．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | 17，156 | 3，157 | 9，632 | 9，245 | 3，964 | 4，624 | 2，089 | 2，116 | 2，816 | 1，672 | 56，471 | 40 | 45 | 56，556 |
| Grants－in－Aid and Shared－Cost Contribu－ tions－ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Trans－Canada Highway．．．．．．．．．．．．．．．．．． | 2，239 | 300 | 1，768 | 2，357 | 2，703 | 13，004 | 857 | 71 | 654 | 12，531 | 36，484 | － | － | 36，484 |
| Roads leading to resources | 800 | 954 | 1，765 | 1，210 | 426 | 1，649 | 1，678 | 806 | 1，560 | 1，152 | 12，000 |  |  | 12，000 |
| Other transportation．．．．． | 274 | － | ， 306 | 702 | 127 | 1，711 | 1，678 | 223 | 249 | ${ }^{5} 512$ | 4，104 |  |  | 4，104 |
| Health－ |  |  |  |  |  |  |  |  |  |  |  | 296 | 378 | 283， 883 |
| Hospital insurance and dia | 6,258 593 | 1,382 18 | 11,873 1,140 | 9，547 | 73,022 4,988 | 104，499 | 15,246 1,191 | 15,954 762 | 19,730 1,328 | 25,698 1,009 | 19，000 | $-$ | － | 19，000 |
| General Health Grants－ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| General public health． | 360 | 141 | 773 | 480 | 1，641 | 2，677 | 689 | 659 | 1，039 | 1，147 | 9，606 |  | 54 | 9,660 |
| Tuberculosis control | 144 | 29 | 139 | 126 | 1，232 | ， 729 | 168 | 159 | 215 | 274 | 3，215 | 22 | 12 | 3，249 |
| Mental health． | 197 | 95 | 370 | 312 | 2，476 | 2，603 | 426 | 406 | 638 | 693 | 8，216 | 22 | － | 8，238 |
| Cancer control | 13 | 15 | 48 | 124 | 480 | 1，170 | 181 | 183 | 255 | 313 | 2,782 | － | 3 | 2，785 |
| Public health research | － | － | 57 | － | 650 | 595 | 95 | 64 | 90 | 59 | 1，610 |  | 7 | 1，617 |
| Other general health gr | 222 | 46 | 162 | 193 | 1，547 | 1，049 | 285 | 237 | 300 | 409 | 4，450 | － | 1 | 4，451 |
| Other health． | 2 | 1 |  |  | 45 | 29 | 6 | 4 | 7 |  | 119 |  |  | 119 |
| Old age assistance | 1，673 | 249 | 1，569 | 1，760 | 10，896 | 6，903 | 1，652 | 1，762 | 2，001 | 2，284 | 30，749 | 16 | 46 | 30， 811 |
| Disabled persons＇allowance | 414 | 259 | 909 | 668 | 7，461 | 4，503 | 478 | 490 | 559 | 685 | 16，426 | 2 | 6 | 16，434 |
| Unemployment assistance | 4，417 | 173 | 1，743 | 1，371 | 38， 222 | 16，990 | 4，234 | 4，176 | 4，217 | 16，425 | 91，968 | 38 | 38 | 92，044 |
| Other social welfare． | 219 | 43 | 402 | 374 | 1，412 | 928 | 274 | 242 | 235 | 287 | 4，416 | 2 | 21 | 4，439 |
| Campground and picnic area developm | 43 | 8 | 33 | 32 |  | 643 | 117 | 59 | 195 | 541 | 1，700 | 14 |  | 1，714 |
| Vocational training． | 2，975 | 200 | 1，150 | 1，563 | 8，830 | 11，930 | 1，145 | 1，454 | 3，596 | 2，825 | 35，668 | 37 | 25 | 35，730 |
| Other education． |  | － | 3 |  |  | 193 | 10 | 12 | 2 | 14 | 234 | 230 |  | 464 |
| Forests． | 69 | 28 | 411 | 735 | 1，381 | 879 | 388 | 396 | 740 | 1，773 | 6，800 | － |  | 6，800 |
| Lands－settlement and agriculture | 157 | 278 | 130 | 112 | 2，279 | 108 | 1，090 | 944 | 156 | 114 | 5，368 | 50 |  | 5，368 |
| Other natural resources Other | 66 510 | 29 29 | 97 509 | 110 469 | 11，061 | 229 6.422 | 36 784 | $\begin{array}{r}40 \\ 1,285 \\ \hline\end{array}$ | 2，984 | 37 3,638 | 644 27.689 | 50 |  | $\begin{array}{r}704 \\ 27,696 \\ \hline\end{array}$ |
| Totals，Grants－in－Aid，etc． | 21，645 | 4，275 | 25，366 | 22，605 | 170，908 | 187，063 | 31，030 | 30，388 | 40，750 | 72，427 | 606，457 | 731 | 606 | 607，794 |
| Totals，Paid to Provincial Governments． | 59，028 | 12，267 | 67，790 | 58，176 | 237，384 | 312，990 | 73，583 | 73，132 | 103，821 | 149，409 | 1，147，580 | 1，217 | 1，218 | 1，150，015 |
| Municipal Corporations |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Grants in lieu of taxes on federal property．．． | 141 | 121 | $\underline{2,065}$ | 977 1,529 | 3，481 | 11， 831 | 1，594 | 886 | 1，717 | 2，133 | 24,946 1,744 |  | 88 | 25,034 1,744 |
| Grants－in－Aid and Shared－Cost Contribu－ tions－ |  | － |  |  |  |  |  | － |  |  |  |  |  |  |
| Transportation | 39 | － | － | 24 | 166 | 2，659 | 22 | 100 | 243 | 142 | 3，395 | － | － | 3，395 |
| Health． |  | － | － |  | － | 643 | － |  |  |  | 647 | － | － | 647 |
| Schools operated by local authoritie Other． | 二 | 二 | $\stackrel{ }{260}$ | 150 | $\begin{array}{r}158 \\ 1,050 \\ \hline\end{array}$ | 423 1,460 | 261 | 219 | 757 | 304 215 | 2,122 3,135 | 二 | － | 2,122 3,135 |
| Totals，Paid to Municipal Corporations． | 184 | 121 | 2，325 | 2，680 | 4，855 | 17，231 | 1，877 | 1，205 | 2，717 | 2，794 | 35，989 | － | 88 | 36，077 |
| Grand Totals，1962．．．．．．．．．．．． | 59，212 | 12，388 | 70，115 | 60，856 | 242，239 | 330，221 | 75，460 | 74，337 | 106，538 | 152，203 | 1，183，569 | 1，217 | 1，306 | 1，186，092 |

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, 1959-62, together with place of payment.
7.-Direct and Indirect Debt (less Sinking Funds) of the Federal Government as at

| Nature of Debt | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$ 000 |
| Direct Debt |  |  |  |  |
| Funded DebtBonded debt. | 13, 979,113 | 13,765,152 | 14.132,915 | 15,060,736 |
| Less sinking funds. | 83,214 | 85,272 | 17,018 | 19,432 |
| Net funded debt.......... | 13,895,899 | 13,679,880 | 14,115,897 | 15,041,304 |
| Short-term treasury bills ${ }^{\text {d }}$ | 1,595,000 | 2,125,000 | 1,935,000 | 1,885,000 |
| Accounts and other payables. | -830,398 | 967, 621 | 999, 076 | 1,104, 607 |
| Annuity, insurance and pension accounts | $3,301,861$ 339,638 | $3,565,376$ 347,206 | $3,955,510$ 363,804 | $4,258,100$ 363,403 |
| Totals, Direct Debt (less Sinking Funds) | 19,962,796 | 20,685,083 | 21,369,287 | 22,652,414 |
| Indirect Debt |  |  |  |  |
| Guaranteed bonds or debentures. | 987,907 | 1,430,107 | 1,672,690 | 1,636,115 |
| Less sinking funds.................................... |  |  |  |  |
| Net guaranteed bonds or debentures. | 987,907 | 1,430,107 | 1,672,690 | 1,636,115 |
| Guaranteed bank loans................................. | 139,646 | 169,203 | 208,758 | 168,540 |
| Guaranteed insured loans under National Housing Act, 1954... | 2,054,319 | 2,671,918 | 3,017,404 | 3,640,000 |
| Guarantees under Export Credits Insurance Act................ | 54,668 | 97,456 | 109,934 | 291,700 |
| Other guarantees................................. | 4,980 | 6,415 | 7,527 | 11,300 |
| Totals, Indirect Debt (less Sinking Funds) ${ }^{\text { }}$. | 3,241,520 | 4,375,099 | 5,016,313 | 5,747,655 |
| Totals, Direct and Indirect Debt (less Sinking Funds) | 23,204,316 | 25,060,182 | 26,385,600 | 28,400,069 |
|  | \$ | \$ | \$ | \$ |
| Direct debt (less sinking funds) per capita. | 1,142 | 1,158 | 1,172 | 1,220 |
| Indirect debt (less sinking funds) per capita.................... | 186 | 245 | 275 | 310 |

${ }^{1}$ Having a term of three months. $\quad{ }^{2}$ Excludes deposits 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, 1959-62

| Item |  |  |
| :---: | :---: | ---: | ---: | ---: | ---: |
|  |  |  |

## Subsection 2.-Public Accounts Statistics of Federal Government Finance

Revenue and Expenditure.-Tables 9 and $\mathbf{1 0}$ show details of revenue and expenditure of the Federal Government for the fiscal years ended Mar. 31, 1961 and 1962, as presented in the Public Accounts of Canada, and for the year ended Mar. 31, 1963, from the abridged data appearing in the Canada Gazette.

## 9.-Revenue of the Federal Government, Years Ended Mar. 31, 1961-63 <br> Sources: Public Accounts of Canada and Canada Gazette

| Revenue | 1961 | 1962 | 1963 |
| :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ |
| Tax Revenue- |  |  |  |
| Customs import duties. | 498,698,211 | 534,515,544 | 644,992,131 |
| Excise duties. | 344,944,857 | 362,798,655 | 381,865,989 |
| Income tax. . | 3,075,961,775 | 3,107,015,319 | 3,056,600, 380 |
| Personal 1. | 1,711,159,573 | 1,792, 655,915 | 1,744,626,029 |
|  | 1,276,628, 380 | 1,202, 053, 695 | 1,182,886,979 |
| On interest, dividends, rents, and royalties going abroad... | 88, 173,822 | 112,305,709 | 129,137,372 |
| Sales tax (net) ${ }^{1} . . .1 . . . . . . . . . . . . . . . . .$. | 720,617,274 | 759,677,970 | 805,970, 471 |
| Estate tax, including succession duties | 84, 879, 372 | 84, 579,383 | 87,143,312 |
| Other taxes.. | 290,675,097 | 262,577,875 | 260,405,101 |
| Totals, Tax Revenue. | 5,015,776,586 | 5,111,164,746 | 5,236,977,384 |
| Non-tax Revenue- |  |  |  |
| Post Office. | 173,593,541 | 183,678,937 | 192,771,815 |
| Return on investments ${ }^{2}$ | 283,769, 277 | 307, 502,187 | 311,860,829 |
| Bullion and coinage. | 8,445, 677 | 7,965, 169 | 9, 404, 342 |
| Other. | 136,094,773 | 119,312,685 | 127,678,061 |
| Totals, Non-tax Revenue | 601, 903,268 | 618,458,978 | 641,715,047 |
| Grand Totals, Revenue | 5,617,679,854 | 5,729,623,724 | 5,878,692,431 |

${ }_{1}^{1}$ Excludes tax credited to the Old Age Security Fund.
${ }^{2}$ Includes interest on investments and profits of the Bank of Canada.
10.-Expenditure of the Federal Government, Years Ended Mar. 31, 1961-63

Sources: Public Accounts of Canada and Canada Gazet

| Expenditure | 1961 | 1962 | 1963 |
| :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ |
| Agriculture ${ }^{1}$. | 264,915,215 | 286,683,751 | 234, 826, 957 |
| Acreage payments to western grain producers | 40,533, 495 | 40,068, 497 | 139,402 |
| Freight assistance on western feed grains.... | 19,178, 973 | 17,513,254 | 14,462,357 |
|  | 205,202,747 | 229,102,000 | 220,225,198 |
| Atomic Energy Control Board. | 38,892,905 | 34,711,614 | 63,205,370 |
| Auditor General's Office......... | 928,573 | 1,069,939 | 1,218,834 |
| Board of Broadcast Governors. | 280,946 | 311,515 | 353,919 |
| Canadian Broadcasting Corporation | 66,766,203 | 78,160,805 | 80,799,500 |
| Chief Electoral Officer......... | 591,780 | 366,474 | 11,815, 358 |
| Citizenship and Immigration | 61,049,383 | 65,016,446 | 66,237, 9881 |
| Civil Service Commission....................................... | 4,220,006 | 4,738,709 | 4,792,379 |
| Defence Production . | 20,435,693 | 23,929, 926 | 28,837,778 |
| Capital assistance to defence industry | 1,773,972 | 1,947,143 | 1,903,978 |
| Other............................................................ | 18,661,721 | 21,982,783 | 26,993,800 |
| External Affairs. | 103,023,405 | 95,571,260 | 85,196,665 |
| Finance. | 1,460, 027,110 | 1,511,953,189 | 1,355,079,838 |
| Public Debt Charges- |  |  |  |
| Interest on public debt. ................................. | 756,664, 228 |  | 881,688,416 |
| Annual amortization of bond discounts and commissions... Servicing of public debt. | $\begin{array}{r}38,901,402 \\ \hline 1.496,496\end{array}$ | $\begin{array}{r}3,6789,553 \\ \hline 1.600,475\end{array}$ | $1,688,487$ 1 |
| Cost of loan flotation.. | 1,334,139 | 1,600,475 | 1,922,438 |
| Totals, Public Debt Charges | 797,602,265 | 838,986,401 | 917,787,239 |

For footnotes, see end of table.
10.-Expenditure of the Federal Government, Years Ended Mar. 31, 1961-63-concluded

| Expenditure | 1961 | 1962 | 1963 |
| :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ |
| Finance-concluded | $537,814,873$ | 541,182, 624 | 275, 302.387 |
| Tax-sharing, subsidy and other payments to provinces....... | 637,814,878 | 541,182,624 | 275,302,387 |
| Account..................................................... | 41, 444, 858 | 46,930,411 | 51,076,449 |
| Other. | 83, 165,114 | 84,853,753 | 110,913,763 |
| Fisheries. | 19,195,681 | 23,097,882 | 23,292,700 |
| Forestry. | 10,060,199 | 14,737,929 | 16,174,971 |
| Governor General and Lieutenant-Governors | 436,926 | 474,156 | 467, 638 |
| Insurance. | 1,309,674 | 1,358,022 | 1,422,120 |
| Justice, including Penitentiaries. | 27,694,612 | 32,580, 184 | 34, 531,655 |
| Labour. | 121,336,329 | 168,884,756 | 348,235,508 |
| Unemployment Insurance Act, administration and Government contribution. | 97, 240, 185 r | 101,532,696 | 105, 376,974 |
| Other. | 24, 096, 144 ${ }^{\text {r }}$ | 67, 352,050 | 242,858,534 |
| Legislation. | 8,506,699 | 8,438,007 | 8,108,063 |
| Mines and Technical Surveys. | 59, 120, 367 | 67,599,290 | 71,130,401 |
| National Defence. | 1,517,530,583 | 1,626,104,312 | 1,574,853,661 |
| Mutual Aid to NATO countries | 1,50,288,158 | 1, 34,858,925 | ... |
| Other.. | 1,467,242,425 | 1,591, 845, 387 | .. |
| National Film Board | 4,866,930 | 5,143,773 | 5,610,630 |
| National Gallery... | 908,898 ${ }^{\text {r }}$ | 1,053,582 | 987, 271 |
| National Health and Welfare. | 887,146,990 | 1,040,275,696 | 1,123,420,683 |
| General health grants to provinces | 47,993,355 | 48,999,753 | 50,295,363 |
| Family allowances....................................... | 506,191,647 | 620,781,193 | 531,566,349 |
| Old age assistance, blind persons' and disabled persons' allowances ${ }^{2}$ | 51,205,049 | 51,374,048 | 62,695,198 |
| Unemployment assistance | 51,520,085 | 92,044,244 | 96,476,627 |
| Contributions under the Hospital Insurance and Diagnostic Services Act | 189,368,503 | 288,883,097 | 836,672,778 |
| Other. | 40,868, 851 r | 48, 193, 361 | 45,714,368 |
| National Research Council, including the Medical Research Council. | 34,438,422 | 38,849,279 | 40,596,727 |
| National Revenue | 73,260,720 | 75,330,063 | 78,607,667 |
| Northern Affairs and National Resources | 74,295,902 | 79, 367,605 | 87,563,579 |
| Post Office. | 178,371,717 | 185,003,359 | 189,344,410 |
| Privy Council, including Prime Minister's Office | 1,850,166 | 4,479,601 | 5,016, 879 |
| Public Archives and National Library | 842,304 | 977,899 | 1,035,471 |
| Public Printing and Stationery........ | 3,495,868 r | 4,010,195 | 3,977,442 |
| Public Works. | 200, 891,585 | 188,813,326 | 171,384,711 |
| Trans-Canada Highw | 57, 908, 825 | 41,594,477 | 39,057, 931 |
| Other...... | 142, 982,760 | 147,218,849 | 138, 326,780 |
| Royal Canadian Mounted Police. | 56,023,194 | 60,497,037 | 65, 424,359 |
| Secretary of State.. | 4,877,799 | 4,994,967 | 4,788,258 |
| Trade and Commerce | 21,763,612 | 42,447, 107 | 30,364, 666 |
| Transport ....... | 336,446, 853 | 410,391,113 | 416,019,472 |
| Veterans Affairs | 292,297,697 | 333,222,906 | 335,602,449 |
| Grand Totals, Expenditure | 5,958,100,946 | 6,520,645,674 | 6,570,325,358 |

[^308]Statements of Assets and Liabilities.-Table 11 shows the statements of assets and liabilities of the Federal Government as they appear in the Public Accounts of Canada for the years ended Mar. 31, 1960-62 and the Canada Gazette for the year ended Mar. 31, 1963.

## 11.-Statement of Assets and Liabilities of the Government of Canada, as at Mar. 31, 1960-63

Sources: Public Accounts of Canada and Canada Gazette

| Item | 1960 | 1961 | 1962 | 1963 |
| :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | \$ |
| Assets |  |  |  |  |
| Current Assets - <br> Cash. |  |  |  |  |
|  | 565,436,461 | 486,759,770 | 895, 321,334 | 511,347, 154 |
| Departmental Working Capital Advances and Revolving Funds. | 196,010,004 | 171,082,579 | 223,379,565 | 243,267,010 |
| Securities held for the securities investment account. <br> Other current assets | 77, 862,926 | 101,453,744 | 94,608,163 | $33,480,163$ |
|  | 22,837,203 | 25,051,644 | 32,707,390 | 32,176,896 |
|  | 862,146,594 | 784,347,737 | 1,246,016,452 | 820,271,223 |
| Advances to the Exchange Fund Account. Sinking fund and other investments held for retirement of unmatured debt................ | 1,960,000,000 | 2,024,000,000 | 1,793,000,000 | 2,736,000,000 |
|  | 85,272,230 | 17,017,981 | 19,432,331 | 22,311,845 |
| Loans to and Investments in Crown Corpora-tions- |  |  |  |  |
| Canadian National Railways. <br> Central Mortgage and Housing Corporation. National Harbours Board. <br> Misol. | 1,207,808,404 | 1,092, 589,707 | 1,165,039,390 | 1,439, 327,659 |
|  | 1,318,683,413 | 1,510,711,116 | 1,701,028,964 | 1,802, 806,097 |
|  | 161,397,831 | 172,769,613 | 178, 743,412 | 192,579,474 |
|  | 758,771,898 | 838,117,202 r | 940,517,693 | 1,033,406, 138 |
| Miscellaneous. | 3,446,661,546 | 3,614, 187, 638 r | 3,985,329,459 | 4,468, 119,368 |
| Loans to national governments................ | 1,414, 527, 922 | 1,378,196,197 | 1,339,796,827 | 1,210,776,466 |
| Other Loans and Investments- <br> Canada's Subscription to Capital of - |  |  |  |  |
| Canada's Subscription to Capital of 一 International Monetary Fund. | 528,728,889 | 543,696,621 | 564,660,956 | 577,250,046 |
| International Bank for Reconstruction and Development |  |  |  |  |
| Working capital advances to international | 70,864,349 | 73,680,062 | 73,680,062 | 80,482,713 |
| organizations........................... | 2,059,265 | 1,722,095 | 1,706,951 | 7,815,457 |
| Soldier Settlement and Veterans' Land Act | 90,396,788 | 98,372,577 r | 97,879,073 | 116,817,625 |
| advances (less reserve for conditional benefits). | 151,626,032 | 166,092,206 | 177,355,101 | 196,018,731 |
| Miscellaneous.................................... | 90,796,089 | 152,087,804 | 78,580,945 | 132, 269,807 |
|  | 934,471,412 | 1,035,651,365 ${ }^{\text {r }}$ | 993, 863,088 | 1,110,654,379 |
| Securities held in trust..................... | 30,611,723 | 30,042,201 | 25,836,647 | 26,016,102 |
| Deferred Charges- <br> Unamortized loan flotation costs. Unamortized portion of actuarial deficiencies in the superannuation account of the Canadian forces, public service and Royal Canadian Mounted Police. | 150,993,027 | 130,741,328 | 121,332,197 | 131,601,094 |
|  | 465,300,000 | 602,961,000 | 606,494,000 | 805,043,000 |
|  | 616,293,027 | 733,702,328 | 727,826,197 | 936,644,094 |
| Suspense accounts <br> Capital assets. <br> Inactive loans and investments. | 33,300 | 136,101 | 136,101 | 136,101 |
|  | $93,539,317$ |  | 94,824,381 | 94,824,381 |
| Totals, Assets. | 9,443,557,072 | 9,712,105,930 | 10,226,061,484 | 11,425,753,960 |
| Less reserve for losses on realization of assets. | 546,384,065 | 546,584,065 | 546,984,065 | 546,384,065 |
| Net Assets. | 8,897,173,007 | 9,165,721,865 | 9,679,677,419 | 10,879,369,895 |
| Net debt. | 12,089,194,003 | 12,437,115, 095 | 13,228, 137,045 | 13,919,769,972 |
|  | 20,986,367,010 | 21,602,836,960 | 22,907,814,464 | 24,799,139,867 |

11.-Statement of Assets and Liabilities of the Government of Canada, as at Mar. 31, 1960-63-concluded


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 and to farmers and veterans for certain authorized purposes and guarantees under the Export Credits Insurance Act.

# 12.-Guaranteed Debt of the Government of Canada, as at Mar. 31, 1962 

Source: Public Accounts of Canada

| Item | Amount of Guarantee Authorized | Amount Outstanding in the Hands of the Public as at Mar. 31, $1962^{1}$ |
| :---: | :---: | :---: |
|  | \$ | \$ |
| Railway Securities Guaranteed as to Principal and Interest- |  |  |
| Canadian National Ry. Co. $2 \frac{3}{1}$ per cent bonds due 1963...... | 250,000,000 | 250,000,000 |
| Canadian National Ry. Co. $5 \frac{1}{2}$ per cent bonds due 1964 | 199, 862,000 | 198, 862,000 |
| Canadian National Ry. Co. 3 per cent bonds due 1966 | 35,000,000 | 35,000,000 |
| Canadian National Ry. Co. $2^{\frac{3}{1}}$ per cent bonds due 1967 | $50,000,000$ | 50,000,000 |
| Canadian National Ry. Co. $4 \frac{1}{2}$ per cent bonds due 1967..................... | $75,000,000$ | $72,750,000$ |
|  | $60,000,000$ $70,000,000$ | $56,400,000$ $70,000,000$ |
| Canadian National Ry. Co. $2 \frac{7}{\frac{7}{8}}$ per cent bonds due 1971 | 40,000,000 | 40,000,000 |
| Canadian National Ry. Co. $5 \frac{1}{3}$ per cent bonds due 1971 | 138,000 | 138,000 |
| Canadian National Ry. Co. $3 \frac{3}{3}$ per cent bonds due 1974 | 200,000,000 | 200,000,000 |
| Canadian National Ry. Co. $2 \frac{3}{3}$ per cent bonds due 1975..................... | 6,000,000 | 6,000,000 |
| Canadian National Ry. Co. 5 per cent bonds due 1977........................ | $90,000,000$ | $85,950,000$ |
| Canadian National Ry. Co. 4 per cent bonds due 1981 | $300,000,000$ | $300,000,000$ |
| Canadian National Ry. Co. $5 \frac{3}{4}$ per cent bonds due 1985 | 100, 000,000 | 99,500,000 |
| Canadian National Ry. Co. 5 per cent bonds due 1987 | 175,000,000 | 171,500,000 |
|  | 1,651,000,000 | 1,636,100,000 |
| Railway Securities Guaranteed as to Interest Only- <br> Grand Trunk 5 per cent perp. deb. stock $£ 4,270,375 / 0 / 0$ | 20,782,492 | 14,790 |
| Other Guarantees- |  |  |
| Deposits maintained by chartered banks in Bank of Canada. | Unstated | 696,007,777 |
| Loans made by lenders under Part IV of the National Housing Act, 1954, for home extensions and improvements. | 25,000,000 | 11,300,0002 |
| Insured loans made by approved lenders under the National Housing Act, 1954 | 6,000,000,000 | $3,640,000,000^{3}$ |
| Insurance and guarantees issued or approved under Section 21 and 21 A of the Export Credits Insurance Act. | 500,000,000 | 291, 700,000 |
| Loans made by chartered banks under the Farm Improvement Loans Act.. | Indeterminate | 43,450,757 |
| Loans made by chartered banks under the Veterans Business and Professional Loans Act. | Indeterminate | 129,045 |
| Loans made by chartered banks under the Prairie Grain Producers' Interim Financing Act, 1956. | 113,632,696 | 32,789 |
| Loans made by chartered banks and credit unions under the Fisheries Im provement Loans Act. | Indeterminate | 127,790 |
| Loans made by chartered banks under the Small Business Loans Act....... | 30,000,000 | $2,558,227$ $113,555,146$ |
| Loans made by chartered banks to the Canadian Wheat Board........ | 180,000,000 | 113,555,146 |
| Loans made by chartered banks under the Prairie Grain Advance Payments Act. | Unstated | 8,672,245 |
| Loans made by chartered banks to the Canadian Wheat Board pursuant to the Prairie Grain Provisional Payments Act. | Unstated | 10,572 |
| Loans made by chartered banks under the Prairie Grain Loans Act. | Indeterminate | 3,127 |
|  |  | 4,807,547,475 |

[^309]A brief commentary dealing with the national debt of the Government of Canada from 1914 to 1953 appears at p. 1091 of the 1954 Year Book. The following table summarizes the debt position during the period 1954-63 as to interest and amount outstanding. 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 Financial Statistics of the Government of Canada (Catalogue No. 68-211).

## 13.-Summary of the Public Debt and Interest Payments Thereon, Years Ended Mar. 31, 1954-63

Nore.-Statistics for 1867-1913 are given in the 1942 Year Book, p. 775; for 1914-35 in the 1947 edition, p. 972 for 1936-48 in the 1951 edition, p. 1009; and for 1949-53 in the 1959 edition, p. 1063.

| $\begin{gathered} \text { Year } \\ \text { Ended } \\ \text { Mar. } 31 \end{gathered}$ | Gross Debt | Net Active Assets | Net Debt | Net <br> Debt <br> Capita | Increase or Decrease of Net Debt during Year | Interest Paid on Debt | Interest Paid Capita ${ }^{2}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | \$ | \$ | \$ | \$ |
| 1954. | 17, 923, 189, 502 | 6,807,252,438 | 11,115, 937,064 | 727.15 | -45,797,205 | 476,061,625 | 32.07 |
| 1955. | 17,951,491, 464 | 6,688,411,310 | 11,263, 080,154 | 717.49 | 147,143,090 | 477, 914,894 | 31.26 |
| 1956.. | 19,124,232,779 | 7,843,863,815 | 11,280, 368,964 | 701.47 | 17,288,810 | 492,624,067 | 31.38 |
| 1957. | 18,335, 997,515 | 7,328,146,357 | 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 | 646.74 | 38,622,732 | 539,207,260 | 32.46 |
| 1959..... | 20,246,773,669 | 8,568,383,809 | 11,678, 389, 860 | 667.99 r | 632,115,970 | 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, 960 | 9,165,721,865 | 12,437, 115, 095 | 681.93 r | 347, 921,092 | 756,664,228 | 42.34 |
| 1962. | 22,907, 814,464 | 9,679,677,419 | 13,228, 137,045 | 712.34 | 791,021,950 | 802,919,207 | 44.02 |
| 1963..... | 24,799, 139, 867 | 10,879, 369,895 | 13, 919, 769,972 | 736.65 | 691,632,927 | 881,598, 898 | 47.47 |

${ }^{1}$ Based on the official estimates of population for 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 payments 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, 1954-63

Note.-Figures for 1917-34 are given in the 1947 Year Book, pp. 999-1000; for 1935-48 in the 1951 Year Book, p. 994; and for 1949-53 in the 1959 edition, p. 1066 .

| Year Ended Mar. 31- | Income Tax ${ }^{1}$ |  |  | Estate Tax | Total Collections |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Individual ${ }^{2}$ | Corporation | Total |  |  |
|  | \$ | \$ | \$ | \$ | \$ |
| 1954. | 1,332,116,907 | 1,246,786,598 | 2,578,903, 505 | 39,137,594 | 2,618,041,099 |
| 1955. | 1,345,611,443 | 1,066, 585, 823 | 2,412,197, 266 | 44,768,029 | 2,456,965, 295 |
| 1956. | 1,354, 275,414 | 1,081, 555,818 | 2,435, 331, 232 | 66,607,026 | 2,501, 938,258 |
| 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, $059,762,765$ |  | 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, 75,824 | 84,579,382 | 3,588,655,206 |
| $1963{ }^{3}$ | 2,399,882,273 | 1,362,655,419 | 3,762,537,692 | 87,143,312 | 3,849,681,004 |

${ }^{1}$ Includes old age security tax. $\quad 2$ Includes "non-resident" taxes. income tax collected by the Taxation Division.
${ }^{3}$ Includes amounts of provincial

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, 1960 and 1961

| City and Province | 1960 |  |  | 1961 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Taxpayers | Total Income Assessed | Tax Payable ${ }^{1}$ | Taxpayers | Total Income Assessed | Tax Payable ${ }^{1}$ |
|  | No. | \$'000 | \$'000 | No. | \$'000 | \$'000 |
| Brantford, Ont. | 18,242 | 75,334 | 7,486 | 18,572 | 78,272 | 7,843 |
| Calgary, Alta. | 83,907 | 382,384 | 42,578 | 87,282 | 403, 548 | 44,722 |
| Edmonton, Alta | 97,257 | 408,702 | 41,268 | 107,559 | 468,110 | 47,816 |
| Fort William and Port Arthur, Ont. | 32,204 | 137,363 | 13,173 | 31,754 | 137,916 | 13,180 |
| Halifax, N.S......................... | 47,024 | 189,927 | 17,776 | 49,347 | 206, 286 | 19,737 |
| Hamilton, Ont | 111,526 | 502,826 | 52,201 | 120,520 | 559,518 | 58,352 |
| Hull, Que. | 11,558 | 44,263 | 3,375 | 12,729 | 50,030 | 3,723 |
| Kitchener and Waterloo, Ont. | 35,672 | 150, 156 | 15,437 | 37,124 | 156,913 | 15,804 |
| London, Ont.. | 57,477 | 239,526 | 24,207 | 60,708 | 260,721 | 26,928 |
| Montreal, Que. | 575,459 | 2,546,690 | 240,824 | 579,939 | 2,720,868 | 263,941 |
| New Westminster, B.C | 18,478 | 82,055 | 7,926 | 19,031 | 84,404 | 7,939 |
| Niagara Falls, | 15,957 | 68,811 | 6,266 | 15,811 | 70,257 | 6,420 |
| Oshawa, Ont.. | 22,028 | 101,332 | 10,823 | 23,908 109 | 110,428 518,608 | 11,974 57,498 |
| Ottawa, Ont. | 106,113 65,017 | 479,203 267,248 | 52,275 21 | 109,742 70,166 | 518,608 296,786 | 57,498 24,704 |
| Quebec, Que. | 65,017 39,043 | ${ }_{162,756}$ | 21,763 16,195 | 70,166 | 296,786 | 17,244 |
| St . Catharines, On | 25,232 | 113,650 | 11,238 | 26,759 | 122,825 | 12,444 |
| St. John's, Nfld. | 18,261 | 75,368 | 7,697 | 18,839 | 79,469 | 7,900 |
| Saint John, N:B. | 22,594 | 85,084 | 7,055 | 22,785 | 89,832 | 7,862 |
| Saskatoon, Sask | 31,480 | 127,929 | 12,147 | 31,488 | 131,640 | 12,789 |
| Sherbrooke, Que........ | 15,113 | 57, 292 | 4,238 | 17,082 | 64,608 | 4,849 16,443 |
| Sudbury and Copper Cliff, On | 34,016 | 159,494 | 15,453 4,790 | 34,639 12,137 | 165,645 49,190 | 16,443 3,830 |
| Sydney and Glace Bay, N.S. | 14,409 629,736 | 59,262 $2,818,961$ | 4,790 331,609 | 12,137 667,153 | 49,190 $3,099,817$ | 370,082 |
| Vancouver (incl. West Van.), B.C. | 219,225 | 993,048 | 108,908 | 216,669 | 1,007,549 | 110,503 |
| Victoria, B.C. | 42,758 | 185,379 | 18,153 | 43,638 | 191,818 | 18,804 |
| Windsor, Ont. | 49,345 | 218,855 | 20,893 | 47,307 | 216,525 | 20,981 |
| Winnipeg, Man | 154,212 | 637,724 | 64,413 603,431 | 155,243 $1.829,788$ | 7,424,920 | 628,089 |
| Other localities | 1,796,423 | 7,207,596 | 603,431 | 1,829,788 | 7,424,920 | 628,089 |
| Totals. | 4,389,766 | 18,578,218 | 1,783,598 | 4,507,767 | 19,601,582 | 1,910,270 |

[^310]
## 16.-Number of Taxpayers and Amounts of Income and Tax, by Occupational Class, 1960 and 1961

| Occupational Class | 1960 |  |  | 1961 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Taxpayers | Total Income Assessed | Tax <br> Payable ${ }^{1}$ | Taxpayers | Total Income Assessed | Tax <br> Payable ${ }^{1}$ |
|  | No. | \$'000 | \$'000 | No. | \$'000 | \$'000 |
| Farmers....... | 66,916 | 275,955 | 21,814 | 74,469 | 324,331 | 26,963 |
| Fishermen.. | 3,200 | 12,081 | 948 | 4,792 | 20,553 | 1,796 |
| Professionals- |  |  |  |  |  |  |
| Accountants.... | 4,119 | 47,147 | 9,399 | 4,471 | 51,985 | 10,123 |
| Medical doctors. | 14,013 | 228,740 | 52,027 | 14,588 | 248,087 | 56,842 |
| Dentists.... | 4,381 | 53,615 | 10,429 | 4,865 | 60,018 | 11,599 |
| Lawyers and notaries. | 7,195 | 105,023 | 25,185 | 7,113 | 111,800 | 27,196 |
| Engineers and architects | 2,019 | 31,639 | 7,764 | 2,505 | 36,804 | 8,484 |
| Employees. | 3,868,185 | 15,555,079 | 1,373,103 | 3,947,599 | 16,312,768 | 1,471,217 |
| Salesmen............ | 50,635 | 281,605 | 30,390 | 55,219 | 320,942 | 36,617 |
| Business proprietors.. | 199,014 | 1,052,062 | 119,951 | 201,605 | 1,063,988 | 121,584 |
| Investors.. | 112,334 | 702,655 | 110,344 | 123,895 | 783, 044 | 113,307 |
| Pensioners. | 31,497 | 98,093 | 5,548 | 38,973 | 125,801 | 7,640 |
| All others. | 26,258 | 134,524 | 16,696 | 27,673 | 141,461 | 16,910 |
| Totals. . | 4,389,766 | 18,578,218 | 1,783,598 | 4,507,767 | 19,601,582 | 1,910,278 |

${ }^{1}$ Includes old age security tax.
17.-Individual Income Tax Statistics, by Income Class, 1960 and 1961

| Income | Taxpayers |  | Total Income Assessed |  | Tax <br> Payable ${ }^{1}$ |  | Average Tax ${ }^{1}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1960 | 1961 | 1960 | 1961 | 1960 | 1961 | 1960 | 1961 |
|  | No. | No. | \$'000 | \$'000 | \$'000 | \$'000 | \$ | \$ |
| Under $\$ 1,000 \ldots \ldots . . . . .$. | 24,173 |  |  | 10,979 | 1,283 | 1,780 | 53 | 76 |
| \$ 1,000 and under $\$ 2,000$. | 629,747 | 619,275 | 979,679 | 966,594 | 35,940 | 34,972 | 57 | 56 |
|  | 876,235 | 876,115 | 2,202,591 | 2,203,013 | 127, 956 | 127, 805 | 146 | 146 |
| 53,000 " " \$5,000.. | 1,804, 005 | 1, 812,992 | 7, 777,910 | 7,147, 065 | 488,066 | 501,788 | 271 | 277 |
| \$10,000 " " $\$ 25,000$. | 913,885 | 1,015,124 | 5,831,876 | 6,492,705 | 583,125 | 647,617 | 638 | 638 |
| \$25,000 " " $\$ 50,000$. . | $\begin{array}{r}124,032 \\ 14 \\ \hline\end{array}$ | 141,363 | 1,734,483 | 1,970,635 | 306,062 | 341,487 | 2,468 | 2,416 |
| \$50,000 and over.......... | - | 15,766 3,566 | 475,039 264,169 | 520,042 290,549 | 138,387 102,778 | 147,359 107,462 | 9,614 31 | 9,347 |
| Totals. | 4,389,766 | 4,507,767 | 18,578,218 | 19,601,582 | 1,783,598 | 1,910,270 | 406 | 424 |

${ }^{1}$ Includes old age security tax.
Corporation Income Tax Statistics.-Corporation statistics presented in Tables 18 and 19 are on a taxation-year basis prior to assessment. The data were extracted and compiled from the returns shortly after they were filed and are as declared by the taxpayer without the scrutiny or revision of the Department of National Revenue. Provincial figures contain an unavoidable bias in favour of Ontario and Quebec because many large corporations operating across Canada file their returns in one or other of these provinces.

## 18.-Summary Statistics for Corporations Reporting a Profit, Taxation Years 1960 and 1961

| Item | 1960 |  |  | 1961 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Corporations Reporting | Current Year Profit | Total Tax Declared ${ }^{1}$ | Corporations Reporting | Current <br> Year <br> Profit | Total Tax <br> Declared ${ }^{1}$ |
|  | No. | \$'000,000 | \$'000,000 | No. | \$'000,000 | \$'000,000 |
| Active taxable corporations-exclud ing co-operatives and Crown cor porations. | 64,100 | 3,444.4 | 1,269.7 | 68,090 | 3,571.4 | 1,301.6 |
| Inactive corporations. . . . . . . . . . . | 2,594 | 1.6 | 0.1 | 2,341 | 2.9 | 0.6 |
| Co-operatives.. | 1,878 | 9.1 | 2.1 | 1,852 | 8.5 | 2.3 |
| Crown corporations. | 7 | 37.6 | 18.3 | 7 | 41.1 | 18.6 |
| Totals, Taxable Corporations... | 68,579 | 3,492.7 | 1,290.2 | 72,290 | 3,623.9 | 1,323.0 |
| Personal corporations............... | 2,380 | 34.2 | - | 2,302 | 33.3 | - |
| Other exempt corporations.......... | 3,296 | 31.4 | - | 3,039 | 31.0 | - |
| Totals, Taxable and Exempt... | 74,255 | 3,558.3 | 1,290.2 | 77,631 | 3,688.2 | 1,323.0 |

${ }^{1}$ Includes old age security tax.
19.-Distribution of Active Taxable Corporations Reporting a Profit, by Industry and Province, Taxation Years 1960 and 1961

| Industrial Group and Province | 1960 |  |  | 1961 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Corporations Reporting | Current Year Profit | Total <br> Tax <br> Declared ${ }^{1}$ | Corporations Reporting | Current <br> Year <br> Profit | $\begin{gathered} \text { Total } \\ \text { Tax } \\ \text { Declared } \end{gathered}$ |
|  | No. | \$'000,000 | \$'000,000 | No. | \$'000,000 | \$'000,000 |
| Industrial Group |  |  |  |  |  |  |
| Agriculture, fishing and forestry..... | 1,106 | 14.4 | 3.9 | 1,442 | 19.3 | 4.2 |
| Mining. . . . . . . . . . . . . . . . . . . . . . | 658 | 165.3 | 68.6 | 600 | 199.7 | 83.8 |
| Manufacturing | 11,772 | 1,593.4 | 622.4 | 12,850 | 1,598.6 | 620.6 |
| Construction.. | 7,316 | 139.9 | 38.7 | 7,289 | 143.5 | 36.2 |
| Transportation, storage and com munications. | 2,717 | 383.6 | 155.9 | 3,120 | 407.6 | 165.1 |
| Public utilities... |  |  |  |  |  |  |
| Wholesale trade. | 10,219 | 287.4 | 92.6 | 10,342 | 277.0 |  |
| Retail trade. | 10,819 | 249.8 | 86.8 | 11,772 | 254.4 565.1 | 83.8 194.5 |
| Finance.. | 12,549 6,944 | 506.1 104.4 | 173.0 27.9 | 13,450 7,225 | 565.1 106.2 | 194.5 27.1 |
| Totals | 64,100 | 3,444.4 | 1,269.7 | 68,090 | 3,571.4 | 1,301.6 |
| Province |  |  |  |  |  |  |
| Newfoundland. | 610 | 28.4 | 11.8 | 653 | 30.7 | 13.0 |
| Prince Edward Island. | 316 | 6.0 | 1.8 | 224 | 8.3 | 1.9 |
| Nova Scotia.......... | 1,519 | 43.8 | 16.8 | 1,780 | 47.1 | 17.4 |
| New Brunswick | 1,242 | 36.8 | 14.5 | 1,347 | 35.4 |  |
| Quebec.. | 16,107 | 1,104.1 | 394.6 | 16,952 | 1,134.8 | 403.3 607.0 |
| Ontario.. | 23,648 | 1,629.9 | 598.6 | 25,310 3 | 1,684.2 | 607.0 45.9 |
| Manitoba............................ | 3,180 1,875 | 117.5 35.4 | 46.4 12.1 | 3,475 1,962 | 120.0 32.4 | 11.2 |
|  | 1,875 | 35.4 168.6 | ${ }_{62.5}^{12.1}$ | 6,598 | 189.3 | 70.9 |
| British Columbia. | 9,564 | 273.9 | 110.5 | 9,789 | 289.4 | 117.6 |

${ }^{1}$ Includes old age security tax.

## 20.-Corporations Reporting a Profit, by Income Class and Size of Total Assets, Taxation Years 1960 and 1961

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 | 1960 |  | 1961 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Corporations Reporting | Current <br> Year <br> Profit | Corporations Reporting | Current <br> Year <br> Profit |
|  | No. | \$'000,000 | No. | \$'000,000 |
| Income Class |  |  |  |  |
| Under \$5,000. | 26,012 | 44.2 | 27,783 | 47.3 |
| \$5,000 under $\$ 10,000$. | 10,716 | 71.7 | 12,103 | 81.7 |
| \$10,000 under \$25,000. | 15,918 | 257.7 | 15,174 | 240.6 |
| \$25,000 under $\$ 50,000$ | 5,764 | 180.5 | 7,305 | 238.4 |
| \$50,000 under \$100,000 | 1,960 | 136.1 | 1,966 | 136.5 |
| \$100,000 under \$250,000. | 1,517 | 236.1 | 1,511 | 238.2 |
| \$250,000 under $\$ 500,000$. | 620 | 218.7 | 627 | 219.6 |
| \$500,000 under $\$ 1,000,000$. | 400 | 278.3 | 363 | 249.5 |
| \$1,000,000 under $\$ 5,000,000$. | 328 | 678.9 | 321 | 665.8 |
| \$5,000,000 or over. | 77 | 1,101.0 | 85 | 1,191.0 |
| Totals. | 63,312 | 3,203.1 | 67,238 | 3,308.6 |
| Total Assets |  |  |  |  |
| Under \$100,000. | 28,822 | 151.0 | 29,980 | 156.8 |
| \$100,000 under \$250,000. | 16,818 | 193.7 | 18,221 | 214.8 |
| \$250,000 under $\$ 500,000$. | 8,150 | 168.2 | 9,025 | 180.5 |
| \$500,000 under $\$ 1,000,000 \ldots$. | 4,621 | 176.2 | 4,878 | 178.2 |
| \$1,000,000 under $\$ 5,000,000$. | 3,673 | 483.2 | 3,804 | 457.7 |
| \$5,000,000 under $\$ 10,000,000$. | 544 | 221.7 | 604 | 229.7 |
| \$10,000,000 under $\$ 25,000,000$. | 358 | 313.4 | 376 | 296.2 |
| $\$ 25,000,000$ under $\$ 100,000,000$. $\$ 100,000,000$ or over......... | 239 87 | 587.6 908.0 | 262 88 | 574.5 $1,020.2$ |

## 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 rental agreements (see p. 964). 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 p. 971.

Federal revenue from succession duties and estate taxes in the year ended Mar. 31, 1962 amounted to $\$ 84,579,000$. In the same year, Quebec's revenue from succession duties amounted to $\$ 25,469,000$ and Ontario's revenue from succession duties to $\$ 40,397,000$.

## Excise Taxes

Excise taxes collected by the Excise Division of the Department of National Revenue are given for the years ended Mar. 31, 1958-62 in Table 21.
21.-Excise Taxes Collected, by Commodity, Years Ended Mar. 31, 1958-62

| Commodity | 1958 | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | \$ | \$ |
| Domestic- |  |  |  |  |  |
| Automobiles, tires and tubes.. | 62,108,080 | 47,303,897 | 47,266,990 | 44,854,366 | 21,798,810 |
| Candy and chewing gum | 608,851 | ... | ... | ... | ... |
| Carbonic acid gas........ | 712,463 | ... | $\cdots$ | $\cdots$ | $\ldots$ |
| Cigars, cigarettes and tobacco | 140,682,617 | 146, 909,545 | 183, 968,989 | 191,918,772 | 205,752,998 |
| Licences... | 81,984 | 19,324 | 518 | 101,018,772 | 205,752,088 |

21.-Excise Taxes Collected, by Commodity, Years Ended Mar. 31, 1958-62-concluded

| Commodity | 1958 | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Domestic-concluded | \$ | \$ | \$ | \$ | \$ |
| Lighters... | 60,329 | 62,833 | 64,393 | 83,290 | 88,792 |
| Matches. | 632,146 | 628,914 | 610,733 | 509,603 | 550, 526 |
| Other taxes on manufactures | 4,668,672 | 4,526,775 | 4,869,629 | 5,956,062 | 5 545, 222 |
| Phonographs, radios and tubes. | 5,581,524 | 5,495,501 | 5,556,782 | 4,656,242 | 5,116,086 |
| Playing cards. | 701,555 | 783,670 | 786,055 | 704,800 | -867,269 |
| Sales, domestic.. | 764,789,901 | 753,175,577 | 863, 255,893 | 856, 258, 282 | 912,351,027 |
| Television sets and tubes | 9, 927,745 | 10,033,057 | 9,139,633 | $8,140,295$ | 9,038,063 |
| Toilet preparations | 6,032,146 | 6,576,040 | 7,408,815 | 8,145,786 | 9,123,032 |
| Wines. | 2,744,237 | 3,140,180 | 3,026,623 | 3,223,761 | 3,350,026 |
| Penalties and interest | 476,786 | 427,332 | 571,638 | 730,477 | 615,683 |
| Totals, Domestic | 999,815,736 | 978,682,645 | 1,126,426,690 | 1,125,181,736 | 1,173,997,534 |
| Imported. | 159,173,870 | 162,110,151 | 198,111,452 | 190,271,710 | 179,250,404 |
| Grand Totals | 1,158,989,606 | 1,140,792,796 | 1,324,538,142 | 1,315,453,446 | 1,353,247,938 |

## Excise Duties

Gross excise duties collected during the years ended Mar. 31, 1958-62 are given in Table 22 and other data of interest arising as a by-product of administration, such as the quantities of grain and other products used in distillation and the quantities of goods taken out of bond and subject to excise duty, are given in Table 23. The totals given in Table 22 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.

> 22.-Gross Excise Duties Collected, Years Ended Mar. 31, 1958-62

| Item | 1958 | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | \$ | \$ |
| Spirits. | 89, 928,576 | 96,550,734 | 102,353,962 | 108,502,109 | 113,689,182 |
| Beer or malt liquor | 88,225,546 | 83,058,147 | 90,704,392 | 90,970,563 | 93,051,457 |
| Tobacco and cigarettes | 131,378,168 | 140,881, 924 | 145,503,942 | 148, 964,858 | 159, 883,233 |
| Cigars. . . . . . . . . | 305,894 | 319,369 | 672,030 | 693,646 | 699,421 |
| Licences. | 34,069 | 34,471 | 34,547 | 34,226 | 35,993 |
| Totals | 309,872,253 | 320,844,645 | 339,268,873 | 349,165,402 | 367,359,286 |

23.-Statistics of Licences and Distillation, Years Ended Mar. 31, 1958-62

| Item | 1958 | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Licences issued. . . . . . . . . . . . . . . No. | 28 | 27 | 28 | 29 |  |
| Licence fees....................... \$ | 7,250 | 7,000 | 7,250 | 7,500 | 7,750 |
| Grain, etc., Used for Distillation- |  | 38,307,971 | 44, 931,157 | 44,735,863 | 47,653,185 |
| Indian corn........................ . | 247,011, 281 | 240,221,429 | 280,449, 929 | 294,767,657 | 328,255, 668 |
| Rye. | 61,228,045 | 61,923,728 | 75, 823,828 | 67,931,857 | 77,422,706 |
| Wheat and other grain | 770,540 | 4,105,310 | 1,619,782 | 362,468 | 2,813,351 |
| Totals, Grain Used........... lb. | 348,106,783 | 344,558,438 | 402,824,696 | 407,797,845 | 456,144,910 |
| Molasses used. . . . . . . . . . . . . . . . . lb. | 33,352,564 | 69,272,572 | 47,990,689 | 67,372,931 | $53,248,172$ |
| Wine and other materials.......... " | 4,875,894 | 8, 485, 879 | 7,949,327 | 12,311, 263 | 10,452,687 |
| Sulphide liquor................. gal. | 374,711,047 | $339,002,204$ | 341, 939, 637 | $347,032,242$ 33 | 372,834, 36 |
| Proof spirits manufactured. .. proof gal. | 28,135,387 | 29,763,383 | 32,188,806 | 33,650,346 | $36,420,7$ |

The quantity of spirits manufactured has fluctuated greatly since 1920, varying from a low of $2,356,329$ proof gal. in that year to a high of $35,555,059$ proof gal. recorded in 1945. The total for 1962 was $36,420,769$ proof gal.

The amounts of beverage spirits, malt, cigars, cigarettes and other tobacco taken out of bond for consumption are given in the Domestic Trade Chapter, Table 36, p. 872.

## Subsection 4.-Statistics of Federal Government Enterprises

As stated on p. 960, a report on the financial statistics of Federal Government business enterprises was issued for the first time in 1962. For the purposes of this study, a government enterprise is defined as an instrument of a political, decision-making body to produce goods and services for sale on the open market at a price designed to cover cost. The essential feature of an enterprise as distinguished from a general government operation is that it charges a price for its services according to use. In motivation and behaviour, government enterprises are more similar to private business corporations than to general government operations. One obvious criterion in identifying an enterprise is the maintenance of accounting records which permit the allocation of specific elements of costs against revenue.

Tables 24 and 25 show details of assets, liabilities, current revenues and expenditures of Federal Government enterprises for the fiscal years ended nearest to Dec. 31. The data were obtained mainly from the annual reports of pertinent Crown corporations.

## 24.-Assets, Liabilities and Net Worth of Federal Government Enterprises as at Fiscal Year Ends Nearest Dec. 31, 1958-61

| Item | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: |
| Assets | \$'000 | \$'000 | \$'000 | \$'000 |
| Cash | 76,975 | 74,388 | 83,726 | 79,016 |
| Accounts receivable | 130,707 | 139,334 | 134,236 | 162,367 |
| Inventories. | 796,103 | 836,360 | 864,593 | 861,189 |
| Interest, dividends and rents receivable. | 6,552 | 7,987 | 10,635 | 12,083 |
| Accrued revenue (interest owing from federal and municipal governments, etc.). | 4,261 | 4,812 | 6,062 | 7,665 |
| Prepaid expenses................................................. | 3,924 | 3,916 | 4,230 | 3,833 |
| Fixed assets. | 3,977,9581 | 4,381,034 ${ }^{1}$ | 4,536,481 ${ }^{1}$ | 4,628, $468{ }^{1}$ |
| Loans and advances receivable from governments, etc. | 1,071,289 | 1,396,428 | 1,717,769 | 1,924,923 |
| Securities held as investments. | 79,232 | 85,276 | 91,856 | 85,992 |
| Mortgages receivable and agreements of sale................... | 200,820 | 229,783 | 267,883 | 321,311 |
| Depreciation funds, trust and deposit accounts and other restricted funds. | 129,050 | 147,691 | 162,256 | 221,938 |
| Deferred charges.......................................................................... | 45,357 | 60,191 | 86,674 | 82,789 |
| Other assets. | 18,442 | 26,918 | 23,767 | 38,158 |
| Totals, Assets | 6,540,670 | 7,394,118 | 7,990,168 | 8,429,732 |
| Liabilities and Net Worth |  |  |  |  |
| Accounts payable. | 546, 486 | 598,130 | 557,565 | 540,926 |
| Temporary loans, advances and notes payable | 235, 501 | 241,138 | 276,609 | 271,241 |
| Interest payable......................................... | 20,585 | 34,143 | 42,597 | 12,881 |
| Accrued expenditure (interest owing, provision for income tax and other) | 54,867 | 53,696 | 66,051 | 105,751 |
| Long-term loans and advances owing.......................... | 2,277, 151 | 2,557,575 | 2,776,479 | 3,095,455 |
| of sale) | 1,033,809 ${ }^{2}$ | 1,341,059 ${ }^{2}$ | 1,680,308 ${ }^{2}$ | 1,673,703 ${ }^{2}$ |
| Deferred credits. | -81,169 | 77,138 | 74,491 | 74,005 |
| Trust and deposit accounts | 7,142 | 5,031 | 4,446 | 4,680 |
| Liability reserves | 79,036 | 96,118 | 109,266 | 169,657 |
| Other liabilities. | 36,471 | 26,469 | 24,583 | 18,218 |
| Proprietary equity (net worth) | 2,168,453 | 2,363,621 | 2,377,773 | 2,463,215 |
| Totals, Liabilities and Net Worth | 6,540,670 | 7,394,118 | 7,990,168 | 8,429,732 |

[^311]
# 25.-Current Revenue and Expenditure of Federal Government Enterprises, Fiscal Years Ended Nearest Dec. 31, 1958-61 

Note.-Excludes the Bank of Canada; includes current operations of the Northern Ontario Pipe Line Crown Corporation from October 1958 and of the St. Lawrence Seaway Authority from April 1959.

| Item | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$'000 |
| Current Revenue |  |  |  |  |
| Revenue from sales and services on current operations. . | 2,032,906 | 2,082,196 | 1,980,442 | 2,086,806 |
| Financial income | 55, 580 | 78,531 | 108,303 | 123,787 |
| Interest. | 51,325 | 74,111 | 104,906 | 122,675 |
| Rental income | 4,255 | 4,420 | 3,397 | 1,112 |
| Contributions from Federal Government | 11,254 52,056 | 14,931 <br> 52 | 17,286 59 | 20,601 |
| Other current income.................... | 39,093 | 43,496 | 47,494 | 54,079 |
| Totals, Current Revenue. | 2,190,889 | 2,271,454 | 2,212,813 | 2,355,525 |
| Current Expenditure |  |  |  |  |
| Cost of goods and services sold from current operations........ | 1,956,894 | 1,967,948 | 1,875,556 | 1,929,207 |
|  | 563, 174 | 586.317 | 578,441 | 602,057 |
| Net drawings on ( + ) or net additions to ( - ) inventories. . | 35,656 | -40,324 | -28,236 | 3,404 |
| Other purchases of goods and services............. ....... | 1,358,064 | 1,421,955 | 1,325,351 | 1,323,746 |
| Provision for depreciation. | 105, 201 | 125, 121 | 124,742 | 138,433 |
| Interest on debt. | 94,292 | 127,545 | 174,177 | 198,159 |
| Other current expenditure | 8,073 | 7,114 | 6,395 | 5,339 |
| Totals, Current Expenditure. | 2,164,460 | 2,227,728 | 2,180,870 | 2,271,138 |
| Net profit before provision for income tax ${ }^{1}$ | 26,429 | 43,726 | 31,943 | 84,387 |
| Estimated income tax. | 13,963 | 12,448 | 19,205 | 20,409 |
| Net profit after provision for income tax..................... | 12,466 | 31,278 | 12,738 | 63,978 |
| Totals, Current Expenditure plus Net Profit. | 2,190,889 | 2,271,454 | 2,212,813 | 2,355,525 |

${ }^{1}$ Includes profits of the Canadian Wheat Board which are distributed to grain producers.

## Section 4.-Provincial Public 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.

As of 1952, the fiscal years of all provinces end on Mar. 31. Figures for the Northwest Territories are included from 1955.

## Subsection 1.-Revenue and Expenditure of Provincial Governments

Table 26 shows net revenue and expenditure of provincial governments for the years ended Mar. 31, 1957-61, and Tables 27 and 28 give details of such revenue and expenditure for the fiscal year ended Mar. 31, 1961. "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; grants-in-aid and shared-cost contributions from other governments; and capital revenue. Table 29 gives details of the amounts paid to other governments by provincial governments, according to nature of payment.

## 26.-Net Revenue and Expenditure of Provincial Governments, Years Ended Mar. 31, 1957-61

| Province or Territory | 1957 | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Net General Revenus |  |  |  |  |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Newfoundland. | 36,870 | 39,479 | 62,381 | 60,266 | 64,461 |
| Prince Edward Island. | 7,570 | 9,441 | 12,568 | 13,819 | 16,093 |
| Nova Scotia. | 57,881 | 64,480 | 75,752 | 90,532 | 92,225 |
| New Brunswick. | 57,335 | 61,616 | 71,007 | 77,343 | 86,628 |
| Quebec.. | 445, 930 | 515,384 | 556,723 | 605,035 | 640,711 |
| Ontario. | 481,775 | 594,480 | 647,067 | 778,450 | 833,128 |
| Manitoba. | 66,120 | 73,594 | 76,573 | 99,814 | 104,145 |
| Saskatchewan. | 121,872 | 135,965 | 141,409 | 145,658 | 148,920 |
| Alberta. | 241,317 | 246,013 | 236,370 | 278,882 | 245,483 |
| British Columbia. | 273, 059 | 281,796 | 295,722 | 313,758 | 320,288 |
| Yukon Territory. | 1,703 | 2,056 | 1,885 | 2,082 | 2,308 |
| Northwest Territories.. | 1,125 | 1,269 | 1,412 | 1,597 | 1,744 |
| Totals. | 1,792,557 | 2,025,573 | 2,178,869 | 2,467,236 | 2,556,134 |
|  |  | Net Ge | eral Expe | ItURE ${ }^{1}$ |  |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Newfoundland. | 44,346 | 47,878 | 61,530 | 64,863 | 74,713 |
| Prince Edward Island. | 10,094 | 10,766 | 14,388 | 20,049 | 15,386 |
| Nova Scotia. | 70,756 | 74,474 | 86,336 | 91,804 | 111,689 |
| New Brunswick. | 59,339 | 63,486 | 70,928 | 79,630 | 94,868 |
| Quebec. | 433,459 | 493,374 | 533,026 | 600,942 | 749,296 |
| Ontario. | 552,155 | 656,481 | 741,936 | 898,230 | 937,308 |
| Manitoba. | 62,867 | 75,615 | 97,821 | 127,695 | 137, 055 |
| Saskatchewan. | 110,132 | 124,353 | 137,513 | 142,248 | 150,027 |
| Alberta. | 170,000 | 199,420 | 215,030 | 234,657 | 266,314 |
| British Columbia. | 257,641 | 287,465 | 266,584 | 283,163 | 331,476 |
| Yukon Territory . | 2,143 | 2,070 | 2,148 | 2,297 | 2,610 |
| Northwest Territories. | 886 | 1,605 | 1,934 | 1,354 | 2,033 |
| Totals. | 1,773,818 | 2,036,987 | 2,229,174 | 2,546,932 | 2,872,775 |

[^312]| Source | Nfid． | P．E．I． | N．S． | N．B． | Que． | Ont． | Man． | Sask． | Alta． | B．C． | Yukon | N．W．T． | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 |
| Taxes－ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Corporations． | 292 | 86 | 891 | 670 | 27，769 | 15，093 | 1，267 | 724 | 2，117 | 2，867 | － | － | 51，776 |
| Income－ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Corporations． | 二 | 二 | 二 | 二 | 98,488 60,678 | 170，584 | 二 | － | 二 | 二 | － | 二 | 269,072 60,678 |
| Property．．． | － | － | 93 | 234 | ， | 2，197 | － | 14 | － | 5，646 | 199 | 3 | 8，386 |
| Sales－${ }_{\text {Alcoholic }}$ beverages． | 1 | 392 | 1 | 1 |  |  |  | 1 |  |  |  |  |  |
| Amusements and admissions | 83 | ${ }_{64} 8$ | 386 | 286 | 2，010 | 10，270 | ${ }^{7} 02$ | 95 | ${ }^{7} 77$ | 2，919 | 79 | － | 22，973 |
| Motor fuel and fuel oil．．．．．． | 5，856 | 2，442 | 16，078 | 12，869 | 101，129 | 165，969 | 16，581 | 22，029 | 27，073 | 32，379 | 284 | 220 | 402，909 |
| Tobacco．．． |  | 310 | 10， 1 | 1，809 | 22，172 | － |  | ， |  | 1 |  | － | 24，291 |
| General． | 10，984 | 1，194 | 10，406 | 9，058 | 69，440 | 二 | 二 | 23，142 | － | 87，606 | － |  | 211，830 |
| Other commodities and services |  |  | 317 |  | 6，860 | － |  |  |  |  |  |  | 7，177 |
| Succession duties．．．．．．．．．．． | － | 814 | 1 | 6,68 | 22，846 | 37，603 | 13.083 | ${ }^{3}$ | 3 | － | － | － | 60， 456 |
| Hospital Insurance Premiums | － 288 | 814 | 97 | 6,662 93 | $\stackrel{-}{1,423}$ | 86,729 6,483 | 13,083 292 | 8，822 | － 53 | 257 | 4 |  | 116,110 9,118 |
| Totals，Taxes | 17，503 | 5，302 | 28，269 | 31，681 | 420，191 | 494，928 | 31，925 | 54，957 | 30，023 | 131，674 | 581 | 223 | 1，247，257 |
| Federal－Provincial Tax－Sharing Arrangements．． | 20，460 | 4，802 | 32，243 | 26，749 | 70，365 | 113，792 | 40，078 | 40，578 | 57，146 | 73，686 | 435 | 541 | 480，875 |
| Privileges，Licences and Permits－ Liquor control and regulation．．．． | 2，000 | 33 |  | 16 | 14，145 | 26，373 | 2，752 | 19 | 934 | 514 | 10 | 57 | 47，149 |
| Motor vehicles．．．．．．．．．．． | 1，961 | 787 | 5，823 | 4，737 | 40，499 | 70，193 | 7，571 | 7，584 | 12，923 | 19，749 | 149 | 37 | 172，013 |
| Natural resources | 1，590 | 17 | 1，413 | 3，760 | 35，457 | 43，995 | 4，149 | 20，229 | 111，820 | 54，341 | 26 | 72 | 276，869 |
| Other | 520 | 121 | 601 | 501 | 8，799 | 9，863 | 1，337 | 1，634 | 1，869 | 2，530 | 78 | 31 | 27，884 |
| Totals，Privileges，Licences and Permits | 6，071 | 958 | 8，133 | 9，014 | 98，900 | 150，424 | 15，809 | 29，466 | 127，546 | 77，134 | 263 | 197 | 523，915 |
| Sales and services． | 373 | 339 | 1，605 | 1，333 | 7，389 | 11，027 | 1，793 | 3，426 | 4，831 | 6，041 | 91 | 38 | 38，286 |
| Fines and penalties． | 316 | 59 | 338 | 227 | 1，130 | 2，371 | 404 | 716 | 1，536 | 692 | 12 | 16 | 7，817 |
| Government of Canada－ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Share of income tax on power utilities．． Subsidies．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | 17 130 | 42 3,157 | ＋ 346 | 115 9 | 1，221 | 578 3.641 | 27 2054 | $\begin{array}{r}58 \\ \hline 2092\end{array}$ | 1,449 2 | 260 1.281 | 40 | 45 | 4,226 53,714 |
| Liquor profits． | 2，377 | 1，305 | 11，710 | 8，220 | 32，583 | 55，263 | 11，657 | 13，673 | 19，940 | 27，898 | 861 | 670 | 186，157 |
| Other revenue． | 53 | 108 | 6 | 72 | 5，400 | 662 | 23 | 3，646 | 283 | 205 | 8 | 1 | 10，467 |
| Totals，excluding Non－revenue and Surplus Receipts． | 64，352 | 16，072 | 92，207 | 86，590 | 640，420 | 832，686 | 103，770 | 148，612 | 245，112 | 318，871 | 2，291 | 1，731 | 2，552，714 |
| Non－revenue and surplus receipts． | 109 | 21 | 18 | 38 | 291 | 442 | 375 | 308 | 371 | 1，417 | 17 | 13 | 3，420 |
| Totals，Net General Revenue | 64，461 | 16，093 | 92，225 | 86，628 | 640，711 | 833，128 | 104，145 | 148，920 | 245，483 | 320，288 | 2，308 | 1，744 | 2，556，134 |

[^313]| Function | Nfld. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Yukon | N.W.T. | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| General Government...................... | 5,729 3,522 | 776 413 | 4,746 3,087 | 3,772 2,265 | 36,430 35,119 | 32,049 46,912 | 6,995 5,842 | 7,182 7,910 | 10,217 15,832 | $\begin{aligned} & 16,867 \\ & 15,339 \end{aligned}$ | 293 3 | 94 20 | $\begin{aligned} & 125,150 \\ & 136,264 \end{aligned}$ |
| Transportation and CommunicationsHighways, roads and bridges. Waterways. Other. | $\begin{array}{r}15,535 \\ \hline 98\end{array}$ | 4,360 66 5 | 30,214 827 58 | 31,431 -18 | 175,485 511 497 | 240,732 | 36,669 $-\quad 39$ | 30,835 301 327 | $\begin{array}{r}68,513 \\ \hline 379\end{array}$ | 73,702 <br> 1,536 | 521 56 | 60 | 708,057 4,336 887 |
| Totals, Transportation and Communications....... | 15,633 | 4,431 | 31,099 | 31,949 | 176,493 | 240,737 | 36,708 | 31,463 | 68,892 | 75,238 | 577 | 60 | 713,280 |
| Health and Social Welfare-Health- |  |  |  |  |  |  |  |  |  |  |  |  |  |
| General health. | 261 | 70 | 128 | 329 | 2,415 | 2,911 | 572 | 486 | 295 | 1,107 | 41 | 1 | 8,616 |
| Public health | 701 | 196 | 1,844 | 1,188 | 9,717 | 6,054 | 1,576 | 3,604 | 2,357 | 3,995 | 93 | 195 | 31,520 |
| Medical, dental and allied service | 1,573 | 137 | 210 | 74 | 1,129 | 2,575 | 269 | 2,053 | 2,073 | 4,431 | - | 10 | 14,534 |
| Hospital care....... | 8,009 | 1,949 | 16,888 | 17,962 | 82,617 | 187,743 | 25,352 | 30,830 | 35,840 | 45,986 | 309 | 457 | 453,942 |
| Social Welfare- |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Aid to aged persons. | 1,809 | 521 | 1,790 | 1,983 | 14,249 | 14,295 | 2,041 | 3,553 | 9,130 | 13,577 | 17 | 45 | 63,010 |
| Aid to blind persons..................... | 90 | -38 | 143 | 125 | 531 | 426 | 110 | 121 | 165 | 365 | 2 | 6 | 2,046 |
| Aid to unemployed employables and unemployables | 6,696 | 249 | 2,984 | 499 | 8,135 | 12,789 | 4,383 | 3,765 | 3,788 | 11,623 | 26 | 39 | 54,976 |
| Mothers' allowances........................ | $\bigcirc$ | 125 | $\bigcirc$ | 1,399 | 19,314 | 12,878 |  | 1,957 | 2,271 | - |  |  | 37,944 |
| Child welfare. | 509 | 111 | 759 | 329 | 35,646 | 5,345 | 1,647 | 1,024 | 2,506 | 2,835 | 38 | 52 | 50,801 |
| Labour...... | 68 | 5 | 233 | 331 | 4,102 | 1,716 | , 304 | ${ }^{2} 271$ | , 543 | + 457 | - |  | 8,030 |
| Other social welfare | 1,009 | 39 | 71 | 97 | 30,079 | 2,726 | 1,117 | 2,254 | 1,587 | 1,794 | - | 23 | 40,796 |
| Totals, Health and Social Welfare. | 20,725 | 3,364 | 25,050 | 24,316 | 207,934 | 249,458 | 37,371 | 49,918 | 60,555 | 86,170 | 526 | 828 | 766,215 |
| Recreational and Cultural Services. | 349 | 104 | 699 | 360 | 3,260 | 9,859 | 851 | 1,100 | 3,052 | 2,764 | 35 | 22 | 22,455 |
| Education- <br> Schools operated by local authorities |  |  |  |  | 104,094 |  |  |  |  |  | 926 | 843 | 486,800 |
| Universities, colleges and other schools...... | 1,182 | - 540 | 17,735 | 2,564 | 69,331 | 46,239 | 5,614 | 6,459 | 20,397 | 10,704 | 926 | 843 | 166,765 |
| Education of the handicapped. | 180 | 42 | 1,415 | , 651 | , 310 | 3,352 | 112 | 255 | 673 | , 479 | - | - | 7,469 |
| Superannuation and pensions. | -57 | 3 | 1,640 | 117 | 1,671 | 15,586 | 496 | 900 | 2 | 3,729 | - | - | 24,087 |
| Other....................... | 649 | 71 | 814 | 274 | 6,918 | 2,384 | 828 | 1,119 | 664 | 1,269 | 4 | 8 | 15,002 |
| Totals, Education. | 18,499 | 3,159 | 25,564 | 13,575 | 182,324 | 231,994 | 30,863 | 38,281 | 79,985 | 74,098 | 930 | 851 | 700,123 |

28.-Net General Expenditure of Provincial Governments, Year Ended Mar. 31, 1961-concluded

| Function | Nffl. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Yukon | N.W.T. | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Natural Resources and Primary IndustriesFish and game. | 1,997 | 72 | 264 | 364 | 8,691 | 2,892 | 845 | 438 | 836 |  | 16 | 40 |  |
| Forests..................................... | 1,996 | 88 | 5,277 | 2,393 | 8,691 11,500 | 17,425 | 1,694 | 1,032 | 6,274 | 18,639 | 16 | 40 | 65,068 |
| Lands: settlement a | 685 | 530 | 1,558 | 1,721 | 40,047 | 9,228 | 6,397 | 5,935 | 6,962 | 4,223 |  | - | 77,286 |
| Minerals and mines. | 142 | 1 | 1,313 | 165 | 4,448 | 1,223 | ${ }^{363}$ | 1,412 | 4,404 | 2,398 | - |  | 15,869 |
| Water resources.. | - | 1 |  | 32 | 5,784 | 1,587 | 984 | 732 | 6,991 | 565 | 二 |  | 16,683 |
| Other | 153 | 33 | 142 | 241 | - | 3,825 | 1,084 | 2,044 | 482 | 428 | - | - | 8,432 |
| Totals, Natural Resources and Primary Industries | 3,723 | 724 | 8,562 | 4,916 | 70,470 | 36,180 | 11,367 | 11,593 | 25,949 | 27,443 | 16 | 40 | 200,983 |
| Trade and industrial development........... | 430 | 125 | 919 | 827 | 4,796 | 3,938 | 1,022 | 1,443 | ${ }_{1}^{670}$ | 1,015 | 15 | 14 | 15,200 |
| Local government planning and development. . | 264 |  | 160 | ${ }^{891}$ | , 777 | 2,097 | . 302 | 1,408 | 1,621 | , 351 | 49 | 14 | 7,241 |
| Debt charges excluding debt retirement....... | 3,410 | 1,326 | 9,777 | 6,822 | 14,415 | 45,985 | 1,220 | -1,316 | $-16,825$ | 2,030 | 34 |  | 66,878 |
| Unconditional grants to local governments. | 1,190 | 355 | 1,084 | 5,528 | 250 | 32,488 | 2,722 | 16 | 15,182 | 11,137 | 125 | 79 | 70,156 |
| Contributions to government enterprises. | 1,138 | 58 | 337 | 25 | ${ }^{625}$ |  | , 275 | - |  | 2,561 |  |  | 5,472 |
| Other expenditure....................... | 101 | 586 | 187 | 111 | 12,370 | 1,680 | 1,341 | 645 | 868 | 15,698 | - | 25 | 33,612 |
| Totals, excluding Non-expense and Surplus Payments............... | 74,713 | 15,370 | 111,271 | 94,657 | 745,263 | 933,888 | 136,879 | 149,643 | 265,998 | 330,711 | 2,603 | 2,033 | 2,863,029 |
| Non-expense and surplus payments | - | 16 | 418 | 211 | 4,033 | 3,420 | 176 | 384 | 316 | 765 | 7 | - | 9,746 |
| Totals, Net General Expenditure (excluding debt retirement) | 74,713 | 15,386 | 111,689 | 94,868 | 749,296 | 937,308 | 137,055 | 150,027 | 266,314 | 331,476 | 2,610 | 2,033 | 2,872,775 |


| Nature of Payment | Nfid． | P．E．I． | N．S． | N．B． | Que． | Ont． | Man． | Sask． | Alta． | B．C． | Yukon | N．W．T． | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 |
| Paid to Local Governments－ |  | － | 10 | － | － |  | － | － |  |  |  |  |  |
| Subsidies．．．．．．．．．．．．．．．．．．．． | 1，183 | － 354 | 1，074 | 5，527 | 250 | 30，150 | 2，506 | 二 | 15，000 | 11，137 | 125 | 79 | 67，385 |
| Grants in lieu of local taxes on provincial government property ${ }^{2}$ ． | 7 | 1 | 二 | － | － | 1，232 | 216 | 8 | 二 | － | － | － | 1，464 |
| Grants－in－Aid and Shared－Cost Contributions－ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Corrections．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | － | － | － | 25 | － | 232 | － | － | － | － | － | － | 257 |
| Police protection．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | 二 | － | － |  | － | 264 | 二 | － | － | － | － | － | 264 |
|  | 二 | 2 | 10 | 二 | 1,850 74 | 169 5 | － | 二 | 二 | － | 二 | 二 | 2,021 89 |
| Highways，roads and bridges．．．．．．．．．．．．．．．．．．．．．．．． | 194 | 21 | 187 | 189 | 15，113 | 70，299 | 4，609 | 6，614 | 7，288 | 642 | 48 | 11 | 105，215 |
| Public health．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | 29 | － | 661 | － | 3，677 | 2，671 | 76 | 188 | 1，245 | 323 |  |  | 8，870 |
| Medical，dental and allied services．．．．．．．．．．．．．．．．． | － | － | － | － | － | 36 | 77 | 56 | － | － | － | － | 169 |
|  | 二 | 二 | 二 | 650 | － | 6 7898 | 4 | 6 | 二 | － | 二 | 二 | ${ }^{666}$ |
| Aid to aged persons（homes）．．．．．．．．．．．．．．．．．．．． | 二 | 二 | 1，222 | 1，365 | － | 7,898 18,458 | 1，352 | 5，099 | 2，478 | 15，${ }^{13} 1$ | 二 | 55 | 7,911 45,750 |
| Child welfare．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | － | － | 1，22 | 199 | － | 3，761 | 45 | 5, | 2， | － | － | － | 4，005 |
| Other health and social welfare | － | 二 | － | － | － | 190 | 27 | － | － | － |  | 3 | 220 |
| Parks，beaches and other recreational areas．．．．．．．．． | 二 | － | － | － | － | 325 535 | 二 | 4 | 1，020 | － | 二 | － | 1,345 539 |
| tural services．．．．．．．．．．．．．．． Schools operated by local authorities ${ }^{4} . . . . . . . . . . .$. | $\overline{5}$ | 2，346 | $\underset{16,425}{ }$ | 9，360 | 98，355 ${ }^{6}$ | 161，773 | 24，049 | 28，793 | 56，322 | 56，491 | 7 | －195 | ［ $\begin{array}{r}1549 \\ \hline 109\end{array}$ |
| Lands－ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Settlement and agriculture．．．．．．．．．．．．．．．．．．．．．．．． | － | － | － | － | 232 | 749 | 477 | 119 | 315 | － | － | － | 1，892 |
| Other．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | 二 | 二 | － | 95 | 161 | 69 | － | 334 393 | － | 2 |  | － | 566 |
| Local government planning and development．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | 二 | 二 | 78 | 95 65 | 二 | 729 | － | － | 134 | － 425 | － |  | 1，431 |
| Housing．．．． | － | － | － | － | 200 | 776 | － | － | － | － | － | － | 1，976 |
| Winter works projec | 39 | － | 51 | － | 6，686 | 3，220 | － | 1，184 | 2，150 | 2，415 | － | － | 15，745 |
| Other payments． | － |  | － | － | 68 | 59 | 315 | － |  |  |  |  | 442 |
| Totals，Paid to Local Governments． | 1，452 | 2，724 | 19，718 | 17，476 | 126，666 | 304，712 | 33，753 | 42，806 | 86，134 | 87，169 | 173 | 343 | 723，126 |
| Paid to Government of Canada－ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Grants－in－aid and shared－cost contributions <br> Grantse services－RCMP | 683 | 124 | $\begin{aligned} & 800^{9} \\ & 668 \end{aligned}$ | 541 | 二 | 二 | 872 | $\overline{1,101}$ | 1，560 | $\overline{1,927}$ |  |  | 800 7,476 |
| Totals，Paid to All Governments． | 2，135 | 2，848 | 21，186 | 18，017 | 126，666 | 304，712 | 34，625 | 43，907 | 87，694 | 89，096 | 173 | 343 | 731，402 |

${ }^{1}$ N．S．－Crown land leases；Ont．－share of liquor licences；Alta．－share of liquor fines．．$\quad{ }^{2}$ Excludes grants in lieu of taxes paid by provincial government enterprises． ${ }^{8}$ Excludes amounts paid directly to municipal hospital boards．$\quad 4$ Includes grants paid directly to teachers in P．E．I．，N．B．，and Que．$\quad 5$ Primary and secondary schools are operated on a denominational basis；grants to denominational schools amounted to $\$ 15,507,000$ ．$\quad 6$ Excludes $\$ 2,879,000$ expenditures by the province to meet debt charges of various school corporations．${ }_{7}$ Local schools are operated by the territorial government and by religious denominations．$\quad 8$ Local schools are operated by the Federal Government，religious denominations and school districts；amount shown was paid to school districts． 9 Movements of coal．

## Subsection 2.-Debt of Provincial Governments

Table 30 shows total bonded debt, by province, as at Mar. 31, 1960-62. Table 31 shows that the majority of bond issues are payable in Canada. Table 32 provides details of total direct and indirect debt of provincial governments as at Mar. 31, 1962.

## 30.-Gross Bonded Debt (exclusive of Treasury Bills) of Provincial Governments, as at Mar. 31, 1960-62

| Province and Year | Bonded Debt | Average <br> Interest Rate | Average Term of Issue | Province and Year | Bonded Debt | Average Interest Rate | Average Term of Issue |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | p.c. | yrs. |  | \$'000 | p.c. | yrs. |
| Newfoundland- |  |  |  | Ontario-concluded |  |  |  |
| $1960 \ldots .$ | 60,500 | 4.58 | 18.8 | 1961................ | 1,691,5311 | 4.02 | 18.7 |
| 1961... | 76,500 | 4.86 | 18.8 | 1962................. | 1,820,378 | 4.14 | 18.3 |
| 1962................ | 86,500 | 4.97 | 19.5 |  |  |  |  |
| Prince Edward |  |  |  | $\left\lvert\, \begin{aligned} & \text { Manitoba- } \\ & 1960 . . . . . . . . . . . . . . . . . . . . . ~ \end{aligned}\right.$ | 253,672 | 3.57 | 14.5 |
| Island- |  |  |  | 1961................. | 298,892 | 3.94 | 15.4 |
| 1960.. | 27,196 | 4.18 | 15.1 | 1962................ | 305,302 | 4.18 | 15.7 |
| 1961............... | 28,480 | 4.33 | 14.7 |  |  |  |  |
| 1962................ | 29,960 | 4.59 | 14.5 |  | 364,081 | 4.28 | 18.7 |
| Nova Scotia- |  |  |  | 1961.................. | 449,127 | 4.40 | 18.2 |
| $1960 .$. | 270,739 | 3.58 | 16.3 | 1962................ | 487,734 | 4.51 | 18.3 |
| 1961. | 295, 860 | 3.72 | 16.4 |  |  |  |  |
| 1962. | 330,870 | 4.06 | 17.5 | Alberta1960 | 18,889 |  |  |
| New Brunswick- |  |  |  | 1961.................. | 16,164 | 2.78 | 16.4 17.0 |
| 1960................ | 248,451 | 3.93 | 17.9 | 1962................. | 14,528 | 2.80 | 17.6 |
| 1961. | 244,881 | 4.01 | 18.1 |  |  |  |  |
| 1962. | 250,138 | 4.15 | 18.4 | British Columbia- |  |  |  |
|  |  |  |  | 1960............... | 80,094 | 3.39 | 23.6 |
| Quebec- | 447,153 | 3.48 | 17.6 |  | 75,806 74,916 | 3.42 3.41 | 24.0 24.1 |
| 1961... | 532,153 | 3.88 | 18.1 |  |  |  |  |
| 1962. | 635,975 | 4.27 | 18.4 | Totals- |  |  |  |
|  |  |  |  | 1960. | 3,414,109 | 3.87 | 18.3 |
| Ontario- 1960............. |  |  |  | 1961............... | 3,709,394 | 4.02 | 18.1 |
| 1960............... | 1,643,334 ${ }^{1}$ | 3.98 | 19.2 | 1962................ | 4,036,301 | 4.21 | 17.9 |

${ }^{1}$ Excludes bonds assumed by the province.
31.-Gross Bonded Debt ${ }^{1}$ (exclusive of Treasury Bills) of Provincial Governments, by Place of Payment, as at Mar. 31, 1960-62

| Payable in- | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 |
| Canada. | 2,384,101 | 2,711,043 | 3,060,981 |
| Britain. | 2,312 | 2,312 | 2,312 |
| Britain and Canada. | 2,974 | 2,974 | 2,974 |
| United States.. | 828,661 | 839,024 | 836,959 |
| United States and Canada. | 97,207 | 84,487 | 67,710 |
| Britain, United States and Canada. | 98, 854 | 60,451 | 56,262 |
| Switzerland. | - | 9,103 | 9,103 |
| Totals. | 3,414,109 | 3,709,394 | 4,036,301 |

[^314]32.-Provincial Government Direct and Indirect Debt (less Sinking Funds), as at Mar. 31, 1962

${ }^{1}$ Includes bonds issued by the Ontario Junior Farmer Establishment Loan Corporation $\$ 20,000,000$ and by the Ontario Municipal Improvement Corporation $\$ 40,300,000$. ${ }^{2}$ Excludes bonds due $\$ 4,000$. ${ }^{3}$ Includes province's share, at Mar. 31,1962 amounting to $\$ 39.552,000$, of the debt relating to the cost of the Metropolitan Boulevard constructed by the Montreal Metropolitan Corporation and the City of Montreal. ${ }^{4}$ Includes net liability of the province re Province of Ontario Savings Office $\$ 75,984,000$ at Mar. 31, 1962 .
${ }^{5}$ Excludes debt of toll road authority. ${ }^{6}$ Excludes bonds of the Halifax-Dartmouth Bridge Commission, $\$ 6,561,000$.
formation re amount actually outstanding not available; this figure is amount authorized. ${ }^{8}{ }^{8}$ In addition, the province has guaranteed the interest on school distric debentures having a par value of $\$ 5,630,000$ and on sewage disposal and water supply systems debentures having a par value of $\$ 3,134,000$. 9 Excludes guaranteed interest under the School Borrowing Assistance Act and the School Buildings Assistance Act on principal borrowings of $\$ 15,102,000$; includes guarantee of debentures issued by the Alberta Municipal Financing Corporation to finance the purchase of municipal debentures-see footnote 1, Table 38.

## Subsection 3.-Statistics of Provincial Government Enterprises

The first report on the financial statistics of provincial government business enterprises, covering the years 1958 to 1961, was released in early 1964 (Catalogue No. 61-204), a sequel to the publication dealing with the finances of Federal Government enterprises. It follows the same concepts and classification schema, presenting the data comparatively, industrially and geographically. Table 33, gives assets, liabilities and net worth of such enterprises as at the fiscal year ends nearest to Dec. 31, 1958-61.

## 33.-Assets, Liabilities and Net Worth of Provincial Government Enterprises, as at Fiscal Year Ends Nearest Dec. 31, 1958-61

| Item | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$'000 |
| Assets |  |  |  |  |
| Cash. | 63,014 | 134,407 | 98,946 | 141,672 |
| Accounts receivable | 70,985 | 75,268 | 79,380 | 95,143 |
| Inventories. | 143,263 | 135, 324 | 132,394 | 140, 206 |
| Interest, dividends and rents receivable. | 254 | 451 | 321 | 1,174 |
| Accrued revenue (interest owing from federal, provincial and municipal governments, etc.). | 9,408 | 11,361 | 14,016 | 16,637 |
| Prepaid expenses.......................................... | 2,832 | 2,576 | 2,942 | 3,347 |
| Fixed assets... | 4,116,0291 | 4,494,9371 | 4,815,0661 | 5, 819,382 ${ }^{1}$ |
| Loans and advances receivable from governments, etc. | 156,161 | 216, 285 | 279,216 | 327, 842 |
| Securities held as investments................... | 84,348 | 107,816 | 86, 289 | 101,301 |
| Mortgages receivable and agreements of sale. | 5,367 | 8,984 | 14,708 | 22,187 |
| Depreciation funds, trust and deposit accounts and other restricted funds. | 217,522 | 246,283 | 289,801 | 336,943 |
| Deferred charges................................................... | 248, 107 | 271,500 | 267,321 | 272,734 |
| Other assets... | 9,344 | 11,919 | 10,873 | 12,331 |
| Totals, Assets | 5,126,634 | 5,717,111 | 6,091,273 | 7,290,899 |
| Liabilities and Net Worth |  |  |  |  |
| Accounts payable. | 72,669 | 56, 552 | 58,732 | 85,990 |
| Temporary loans, advances and notes payable | 178,487 | 170,317 | 181,055 | 194,727 |
| Interest payable. | 921 | 1,058 | 331 | 64 |
| Accrued expenditure (interest owing, provision for income tax and other). | 54, 277 | 59,501 | 663,165 |  |
| Long-term loans and advances owing......................... | 1,153,373 | 1,265, 258 | 1,329,329 |  |
| Long-term debt (bonds, debentures, mortgages and agreement for sale and other) | 2,460,2822 | 2,863,3772 | 3,080, $363{ }^{2}$ | 4,055,827 ${ }^{2}$ |
| Deferred credits............................................... | 8,331 | 9,086 | 9,724 15 | 10,692 13 |
| Trust and deposit accounts. | 7,484 | 15,214 | 15,619 30 | ${ }^{13,102}$ |
| Liability reserves | 25,388 8,634 | 29,530 | 30,760 6,203 | 15,051 |
| Other liabilities... | 1,156,788 | 1,239,457 | 1,315,992 | 1,443,401 |
| Totals, Liabilities and Net Worth | 5,126,634 | 5,717,111 | 6,091,273 | 7,290,899 |
| Current Revenue |  |  |  |  |
| Revenue from sales and services on current operations......... | 1,085,625 | 1,156,290 | 1,236,536 | 1,373,576 |
| Financial income. | 23,576 | 30, 171 | 35,368 <br> 31 <br> 682 | ${ }_{37}^{17,205}$ |
| Interest. | 20,169 | 25,167 | 31,682 <br> 3,686 <br> 1 | 4,613 |
| Other. | 3,407 | ${ }^{5,004}$ | 3,680 1,502 | 1.810 |
| Rental income | 1,007 1,102 | 1,234 | 1,563 | ${ }^{1} 844$ |
| Contributions from provincial govern Other current income. | 1,102 4,198 | 4,735 | 4,882 | 5,284 |
| Totals, Current Revenue | 1,115,508 | 1,192,903 | 1,278,851 | 1,422,932 |
| Current Expenditure |  |  |  |  |
| Cost of goods and services sold from current operations. | 644,310 | 687,115 | 729,393 |  |
| Wages and salaries.......................... | 163,373 | 180,432 | 195,563 | $\begin{aligned} & 220,180 \\ & -3,286^{3} \end{aligned}$ |
| Net drawing on ( + ) or net additions to ( - ) inventories... | 1,962 478,975 | 7,939 498,744 | 2,631 531,199 | 570, 396 |

[^315]
## 33.-Assets, Liabilities and Net Worth of Provincial Government Enterprises, as at Fiscal Year Ends Nearest Dec. 31, 1958-61-concluded

| Item | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$'000 |
| Current Expenditure-concluded |  |  |  |  |
| Provision for depreciation. | 82,005 | 88,182 | 99,993 | 115, 802 |
| Interest on debt........... | 103,696 | 130,425 | 162,342 | 199,314 |
| Other current expenditure | 14,018 | 17,523 | 19,713 | 19,191 |
| Totals, Current Expenditure. | 844,029 | 923,245 | 1,011,441 | 1,121,597 |
| Net profit before provision for income tax | 271,479 | 269,658 | 267,410 | 301,335 |
| Estimated income tax ...... |  |  |  |  |
| Net profit after provision for income tax. | 271,479 | 269,658 | 267,395 | 301,335 |
| Totals, Current Expenditure plus Net Profit. | 1,115,508 | 1,192,903 | 1,278,851 | 1,422,932 |

[^316]
## Section 5.-Municipal Public Finance

## Subsection 1.-Municipal Assessed Valuations and Taxation

Table 34 shows municipal assessed valuations and total exemptions, by province, for the year 1960 together with local taxes levied by municipalities and by some school authorities and total taxes outstanding at the end of the year. Assessment figures in the various provinces are not entirely comparable as there are still variations in methods, schedules and rates, not only between provinces but also between municipalities within the same province.

## 34.-Municipal Assessed Valuations and Taxation, by Province, 1960

| Item | Newfoundland ${ }^{1}$ | Prince <br> Edward <br> Island | Nova Scotia | New Brunswick | Quebec | Ontario |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Assessed Valuations |  |  |  |  |  |  |
| Taxable Valuations on which Taxes are Levied- |  |  |  |  |  |  |
| Real property............. \$ \$000 | 8,417 | 36,778 | 770,713 | 512, 678 | 8,778,072 | 8,376,297 |
| Personal property........... " ${ }_{\text {Business }}$ |  | 7,638 | 134,792 | 113,784 | .. |  |
|  | 3,359 | 8,210 | 31,748 312 | 34,300 3,902 | - | 1,036,717 |
| Totals................ s'000 | 11,776 | 52,626 | 937,565 | 664,664 | . | 9,413,014 |
| Total exemptions ${ }^{\text {² }}$............ \& $\mathbf{\prime}^{\prime} 000$ | .. | 10,0004 | 420,762 | . | 2,589,513 ${ }^{5}$ | 1,693,353 ${ }^{4}$ |
| Taxation |  |  |  |  |  |  |
| Tax levy. . . . . . . . . . . . . . . s'000 | 4,306 | 2,446 | 36,095 | 28,663 | 370,310 |  |
| Tax Collections, Current and Arrears- |  | 2,446 | 36,055 | 28,603 | 370,310 | 592,378 |
| Total....................... \$'000 | 3,715 | 2,386 | 34,465 | 27,810 |  |  |
| Percentage of levy.......... p.c. | 86.28 | 97.55 | 95.48 | 97.02 |  | 97.91 |
| Taxes receivable, current and arrears..................... §'000 | 1,362 | 748 |  |  |  |  |
| Percentage of levy.......... p.c. | 31.63 | 30.58 | 11,419 | 10,168 | 16.21 | 10.49 |

[^317]34.-Municipal Assessed Valuations and Taxation, by Province, 1960-concluded

| Item | Manitoba | Saskatchewan | Alberta | British Columbia | Yukon ${ }^{6}$ | N.W.T. ${ }^{7}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Assessed Valuations |  |  |  |  |  |  |
| Taxable Valuations on which Taxes are Levied- |  |  |  |  |  |  |
| Real property............. \$'000 | 1,081,853 | 1,176,113 | 1,658,345 | 1,843,967 | 11,735 | 4,203 |
| Business..................... . | 49,309 | 60,662 | 80,818 | $\cdots$ | ㅍ. | $\because 2,506$ |
|  |  | 318 |  | - | - |  |
| Totals............... . \$'000 | 1,143,796 | 1,237,093 | 1,739,163 | .. | 11,735 | 6,709 |
| Total exemptions ${ }^{\mathbf{3}} . .$. ........ \$'000 | 240, 942 | 612,765 | 347,022 ${ }^{4}$ | 553,396 ${ }^{8}$ | 5,459 | 3,730 |
| Taxation |  |  |  |  |  |  |
| Tax levy.................... \$'000 | 67,964 | 81,338 | 111,907 | 128,554 | 173 | 330 |
| Tax Collections, Current and Arrears- |  |  |  |  |  |  |
| Total...................... \$'000 | 65,886 | 79,825 | 109,536 | 128,105 | 165 | 267 |
| Percentage of levy.......... p.c. | 96.94 | 98.14 | 97.88 | 99.65 | 95.38 | 80.91 |
| Taxes receivable, current and arrears. ................... §'000 | 12,115 | 19,566 | 22,334 | 6,911 | 64 | 75 |
| Percentage of levy.......... p.c. | 17.83 | 24.06 | 19.96 | 5.38 | 36.99 | 22.73 |

[^318]Because of the considerable differences in the division of responsibility for services between the provincial governments and their respective municipalities, extreme caution should be exercised in using the figures in Table 34 as a basis for interprovincial comparisons of the relative burden of municipal taxation. Also, in Saskatchewan municipalities are required to levy certain taxes for and on behalf of hail insurance associations and rural telephone companies and for other special purposes for which there is no comparable situation in other provinces. The amounts of such taxes excluded in the Saskatchewan municipal levies in Table 34 are: hail, $\$ 2,802,426$; telephone, $\$ 1,022,663$; and drainage, $\$ 143$.

## Subsection 2.-Municipal Revenue, Expenditure and Debt

Tables 35, 36 and $\mathbf{3 7}$ show comparative totals and details of gross ordinary revenue and expenditure of municipal governments, by province. Table 38 sets out the direct and indirect debt of local governments for the year 1960. The amounts shown include debt incurred for general and school purposes, debenture debt incurred for and by utilities, and debenture debt incurred by certain special areas organized to provide specific local services.

## 35.-Gross Ordinary Revenue and Expenditure of Municipal Governments, by Province, Fiscal Years Ended Nearest Dec. 31, 1960

| Province | Gross Ordinary Revenue | Gross Ordinary Expenditure | Province or Territory | Gross Ordinary Revenue | Gross Ordinary Expenditure |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 |  | \$'000 | \$'000 |
| Newfoundland. | 6,491 | 6,350 | Saskatchewan. | 108,479 | 109,798 |
| Prince Edward Island | 3,126 | 3,119 | Alberta....... | 165,601 | 165,079 |
| Nova Scotia... | 46,879 | 47,112 |  | 184,385 | 181,198 |
| New Brunswick | 41,218 | 40,398 | Yukon Territory ....... | 360 550 | 361 520 |
| Quebec. | 428,541 790 | 425,735 782,671 | Northwest Territories. | 550 | 52 |
| Manitoba | 87,216 | 86,946 | Totals. | 1,863,550 | 1,849,287 |

36.-Details of Gross Ordinary Revenue of Municipal Governments, Fiscal Years Ended Nearest Dec. 31, 1960

| Source | Nfld. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Yukon | N.W.T. | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Taxes- <br> General and School- |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Real property...... | 2,473 | 1,807 | 26,882 | 19,552 | 220,100 | 571,714 | 56,473 | 75,901 | 95,740 | 117,851 | 142 | 257 | 1,188,892 |
| Personal property | 4 | 251 | 5,987 | 4,737 |  | ... | 1 |  |  |  | ... |  | - 10,979 |
| Business........... | 915 | 226 | 1,483 | 1,867 | 23,592 | 1 | 5,269 | 1 | 6,720 | 3,509 | ... | 2 | 43,581 |
| Poll. | 142 | 155 | 1,260 | 2,269 |  | 134 | 6 | 1,184 | $\ldots$ | ... | ... | 7 | 5,157 |
| Amusement. | 78 | ... | ... | $\cdots$ | 1,538 | ... | $\cdots$ | 167 | ... | ... | ... | ... | 1,783 |
| Sales............................................ | 419 | ... | $\cdots{ }_{6}$ | $\cdots$ | 80,235 | ... | 434 | 567 | $\ldots$ | $\cdots$ | $\cdots$ | ... | 81,655 |
| Household and tenant............................................................ | $\cdots{ }^{*} 2$ | ㅍ. | $7{ }^{6}$ | ${ }^{3} 150$ | 3,546 | - | ${ }^{*} 61$ | $\cdots 422$ | - | ${ }^{*}{ }_{51}$ | .... | … | 4,323 ${ }^{6}$ |
| Special assessments (owners' share) and charges. | 253 | 7 | 406 | 88 | 41,299 | 20,530 | 5,721 | 3,097 | 9,447 | 7,143 | 31 | 66 | 88,088 |
| Totals, Taxes. | 4,306 | 2,446 | 36,095 | 28,663 | 370,310 | 592,378 | 67,964 | 81,338 | 111,907 | 128,554 | 173 | 330 | 1,424,464 |
| Licences and permits. | 147 | 55 | 421 | 250 | 5,294 | 6,907 | 1,504 | 1,974 | 2,369 | 6,201 | 22 | 8 | 25,152 |
| Interest, tax penalties, etc. | 10 | 3 | 464 | 257 | 5,498 | 6,231 | 1,355 | 1,615 | 1,752 | 2,371 | 2 | 3 | 19,561 |
| Contributions, Grants and SubsidiesGovernments. | 1,561 | 435 | 6,489 | 10,531 | 17,274 | 134,520 | 9,124 | 12,935 |  |  | 155 | 199 |  |
| Government enterprises | 1,58 | 85 | -773 | 10,531 430 | 12,095 | 6,779 | 2,526 | 5,173 | 9,583 | 3,331 | - | 2 | 40,835 |
| Other.. | 130 | 5 | 340 | 74 | 1,821 | 739 | 366 | 650 | 198 | 1,055 | - | - | 5,378 |
| Miscellaneous revenue. | 279 | 61 | 1,575 | 718 | 12,445 | 33,137 | 2,188 | 4,525 | 10,244 | 11,786 | 4 | 8 | 76,970 |
| Totals, Revenue.. | 6,491 | 3,090 | 46,157 | 40,923 | 424,737 | 780,691 | 85,027 | 108,210 | 164,919 | 183,210 | 356 | 550 | 1,844,361 |
| Surplus from previous years......................... | - | 36 | 722 | 295 | 3,804 | 10,013 | 2,189 | 269 | 682 | 1,175 | 4 | - | 19,189 |
| Grand Totals. | 6,491 | 3,126 | 46,879 | 41,218 | 428,541 | 790,704 | 87,216 | 108,479 | 165,601 | 184,385 | 360 | 550 | 1,863,550 |

${ }^{3}$ Included with business.

| Function | Nfid. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Yukon | N.W.T | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| General government. | 771 | 221 | 3,172 | 2,949 | 40,408 | 50,015 | 5,588 | 6,985 | 8,738 | 10,543 | 44 | 64 | 129,498 |
| Protection of persons and property.. | 340 | 344 | 5,922 | 4,309 | 52,732 | 96,160 | 10,865 | 7,559 | 17,048 | 26,186 | 53 | 29 | 221,547 |
| Public works. | 1,713 | 329 | 2,630 | 2,933 | 57,959 | 119,502 | 14,465 | 24,210 | 25,291 | 15,684 | 76 | 44 | 264,836 |
| Sanitation and waste removal. | 582 | 20 | 1,084 | 635 | 9,445 | 34,492 | 3,309 | 2,597 | 5,408 | 6,286 | 26 | 37 | 63,921 |
| Health. | 15 | 1 | 2,676 | 975 | 8,848 | 14,583 | 1,670 | 6,145 | 7,474 | 2,294 | 1 | 12 | 44,693 |
| Social welfare. | ... | 48 | 2,453 | 1,986 | 6,872 | 43,241 | 3,559 | 5,576 | 4,066 | 18,718 | - | 52 | 86,571 |
| Education. | 214 | 1,412 | 20,484 | 18,925 | 157,709 | 264,701 | 30,176 | 40,004 | 54,266 | 56,968 | ... | 151 | 645,010 |
| Recreation and community services. | 156 | 65 | 1,193 | 833 | 11,264 | 29,544 | 2,305 | 2,943 | 5,385 | 8,699 | 11 | 14 | 62,412 |
| Debt Charges- <br> Debenture and other long term. | 767 | 451 | 4,414 | 4,385 | 55,618 1,333 | 63,456 10,530 | 6,847 194 | 4,935 599 | 19,411 47 | 23,518 596 | 35 | 34 | 183,871 15,016 |
| Other.. | 116 | 72 | 762 | 337 | 1,333 | 10,530 | 194 | 599 | 477 | 596 |  |  | 15,016 |
| Utilities and other municipal enterprises (deficits and levies). | 375 | 13 | 56 | 147 | 1,402 | 10,953 | 1,154 | 1,400 | 2,868 | 1,782 | 35 | 17 | 20,202 |
| Provision for reserves. | 81 | 49 | 892 | 726 | 2,710 | 6,868 | 1,979 | 1,353 | 1,413 | 2,432 | 20 | 4 | 18,527 |
| Contributions to capital and loan fund... | 1,081 | 80 | 648 | 380 | 15,731 | 19,024 | 2,941 | 3,624 | 8,698 | 6,464 | 56 | 51 | 58,778 |
| Joint or special expenditure. | - | - | - | 17 | - | 6,500 | 400 | - | 1,056 | 18 | - | - | 7,991 |
| Miscellaneous expenditure........................... | 139 | 14 | 466 | 837 | 3,704 | 11,012 | 583 | 1,723 | 3,356 | 1,008 | 5 | 11 | 22,858 |
| Totals, Expenditure...................... | 6,350 | 3,119 | 46,852 | 40,374 | 425,735 | 780,581 | 86,035 | 109,653 | 164,955 | 181,196 | 361 | 520 | 1,845,731 |
| Deficit from previous years....... | - | - | 260 | 24 | - | 2,090 | 911 | 145 | 124 | 2 | - | - | 3,556 |
| Grand Totals. | 6,350 | 3,119 | 47,112 | 40,398 | 425,735 | 782,671 | 86,946 | 109,798 | 165,079 | 181,198 | 361 | 520 | 1,849,287 |

[^319]38.-Debt of Municipal and School Corporations, as at Fiscal Year Ends Nearest Dec. 31, 1960

| Direct and Indirect Debt | Nfld. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Yukon | N.W.T. | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Direct Debt (less Sinking Funds)- |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Debenture debt. | 16,885 | 8,330 | 89,111 | 90,897 | 1,324,219 | 1,558,233 | 159,851 | 145,073 | 432,588 | 452,063 | 987 | 218 | 4,278,455 |
| Less sinking funds. | 134 | 1,482 | 6,944 | 7,553 | 15,636 | 46,066 | 16,630 | 8,379 | 3,614 | 45,638 | - | - | 152,076 |
| Net debenture debt | 16,751 | 6,848 | 82,167 | 83,344 | 1,308,583 | 1,512,167 | 143,221 | 136,694 | 428,974 | 406,425 | 987 | 218 | 4,126,379 |
| Temporary loans and bank overdrafts..... | 203 | 844 | 15,089 | 6,099 | 110,365 | 91,038 | 16,025 | 7,951 | 10,769 | 5,272 | 3 | - | 263,658 |
| Accounts payable and other liabilities.. | 2,644 | 367 | 10,604 | 7,549 | 114,318 | 142,325 | 13,165 | 20,366 | 42,219 | 27,214 | 111 | 92 | 380,974 |
| Totals, Direct Debt (less Sinking Funds). | 19,598 | 8,059 | 107,860 | 96,992 | 1,533,266 | 1,745,530 | 172,411 | 165,011 | 481,962 ${ }^{1}$ | 438,911 | 1,101 | 310 | 4,771,011 |
| Indirect Debt (less Sinking Funds)- |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Guaranteed bonds or debentures. | - | - | 1,407 | 4,286 | 60,497 ${ }^{2}$ | 4,860 | 2,828 | - | - | - | - | - | 73,878 |
| Less sinking funds. | - | - | 262 | - | 1,293 | - | - | - | - | - | - | - | 1,555 |
| Net guaranteed bonds or debentures.. | - | - | 1,145 | 4,286 | 59,204 | 4,860 | 2,828 | - | - | - | - | - | 72,323 |
| Guaranteed bank loans. | - | - | - | - | - | - | - | - | 13 | - | - | - | 13 |
| Totals, Indirect Debt (less Sinking Funds) | - | - | 1,145 | 4,286 | 59,204 | 4,860 | 2,828 | - | 13 | - | - | - | 72,336 |
| Grand Totals....................... | 19,598 | 8,059 | 109,005 | 101,278 | 1,592,470 | 1,750,390 | 175,239 | 165,011 | 481,975 | 438,911 | 1,101 | 310 | 4,843,347 |
| ${ }^{1}$ Includes debentures sold to the Alberta Municipal Financing Corporation; see footnote 9, Table 32. ${ }^{\text {a }}$, Debentures of the Montreal Transportation Commissionguaranteed by the City of Montreal. |  |  |  |  |  |  |  |  |  |  |  |  |  |

# CHAPTER XXII.-NATIONAL AGCOUNTS, INDUSTRY PRODUCTION TRENDS, BALANCE OF INTERNATIONAL PAYMENTS AND INTERNATIONAL INVESTMENTS* 

## CONSPECTUS



The interpretation of the symbols used in the tables throughout the Year Book will be found facing $p .1$ of this volume.

In this Chapter various statistical statements 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 inter-related 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 businessmen 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 all other tables the data are expressed in current dollars so that year-to-year changes must be considered in relation to price changes over the period.

National accounts calculated on a quarterly basis are a logical extension of the annual national accounts and have been published since 1953. However, their preparation on a reliable and analytically useful basis is rather more difficult because of the scarcity of quarterly data, special problems arising from the measurement of farm production and problems in connection with seasonal variation.

[^320]The tables on pp. 1016-1017 cover the more important aspects of the national income analysis in annual terms. Table 1 gives total gross national product in current and constant dollars for the years 1926-62. Tables 2 and 3 show the main aggregates of national income, gross national product, gross national expenditure and their components; other tables are included to show the source and disposition of personal income and expenditure and government revenue and expenditure.

National Income.-Net national income at factor cost measures the current earnings 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, measures 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 non-residents (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 1962.-The economic expansion that began in 1961 continued in 1962 when gross national product rose to $\$ 40,401,000,000$, an 8 -p.c. advance over the previous year. This increase represented the largest year-to-year gain since 1956 when the economy was stimulated by an exceptionally high level of capital expenditure. Price increases were moderate in 1962, accounting for less than 2 p.c. of the increase in gross national product, leaving a gain in volume of a little more than 6 p.c.

All the main components of gross national expenditure contributed to the increase in the aggregate. Consumer spending, which rose more than 5 p.c., was a major expansionary influence. The strength in the consumer sector was particularly evident in the first and last quarters of the year; purchases of durables, notably passenger cars, were especially heavy in the fourth quarter. The increase in consumer spending was accompanied by a large rise in personal income and personal saving. Investment in fixed capital resumed its upward course, the bulk of the increased outlays being for machinery and equipment. Except in the third quarter, the accumulation of business inventories made only a modest contribution to the expansion of economic activity. With a near-record crop in 1962, in contrast to a poor crop in 1961, there was a considerable accumulation of farm inventories in place of the liquidation of a year earlier. Largely in response to a higher level of demand in the United States, exports of goods and services were up nearly 8 p.c. while imports also rose but not to the same extent; these increases reflected, in part, the lower exchange value of the Canadian dollar. Government expenditure was up substantially, mainly reflecting larger outlays at the provincial-municipal level. However, the deficit of all governments combined declined significantly.

The salient developments on the income side were a 7 -p.c. rise in labour income, a 13-p.c. increase in corporate profits, and a sharp expansion in accrued farm income, largely a reflection of a near-record crop. Personal income rose at about the same rate as national income.

All the major components of demand showed price increases, ranging from 1.5 p.c. in consumer expenditure to 3.7 p.c. in government expenditure. Prices of imports rose 4.4 p.c., largely as a result of the depreciation of the Canadian dollar. This increase is not reflected in the over-all implicit price index of gross national expenditure since imports are excluded by definition from Canada's gross national product.

## Production and Employment

Real output for 1962 was higher by just over 6 p.c. than the corresponding figure for 1961. If agriculture is excluded, the increase amounted to about 5 p.c. The 8 -p.c. gain in the goods-producing industries is reduced to 7 p.c. in the same manner.

Manufacturing, with an 8-p.c. gain, was the largest single contributor to the expansion during 1962, accounting for approximately one third of the total increase. The considerable advance ( 11 p.c.) in the cyclically volatile durables component formed the basis for this growth, with particular strength occurring in the transportation equipment and the electrical apparatus and supplies groups. Iron and steel and non-metallic mineral products increased by 9 p.c. each. Non-durable manufacturing continued to expand in 1962, showing a 5 -p.c. increase over 1961, with the largest gain of any major industry group in textile products ( 8 p.c.), and the smallest ( 2 p.c.) in the leather and clothing products groups.

Considerable gains were also made in mining and forestry, which increased by about 7 p.c. each, while construction expanded by 2 p.c.

The service-producing industries showed a 4-p.c. gain, about two fifths of which was accounted for by a considerable increase in wholesale trade ( 8 p.c.) and retail trade ( 4 p.c.), which paralleled the rapid expansion in manufacturing output. The most significant development within retail trade was an 11-p.c. increase in the motor vehicle dealer component. Oil and gas pipeline transport accounted for about half of the 4-p.c. increase in transportation, as the growth in output of this industry was well above average. The only major decline ( 12 p.c.) occurred in storage, largely as a result of declines in the volume of receipts and shipments at grain elevators during the first part of the year. Public administration and defence showed a smaller-than-average gain ( 2 p.c.), while electric power and gas utilities increased by 6 p.c. The remaining service-producing industries continued their steady advance, increasing by approximately 4 p.c.

The market for labour improved in 1962. The total number of employed persons increased by nearly 3 p.c., and the non-agricultural component of this number increased 3.5 p.c. In contrast to the previous year when the rate of rise in the employment of women substantially exceeded that of men, both men and women shared equally in the 1962 increase. Gains in employment occurred in all industries except agriculture and other primary industries, the largest being in construction and non-government service (community, business, personal, and recreational service). The average rate of unemployment in 1962 was 5.9 p.c. of the labour force, compared with the rate of 7.2 p.c. in 1961.

## The Components of Demand

Consumer expenditure rose to $\$ 25,749,000,000$ in 1962 , a gain of more than 5 p.c. over the previous year. This increase was associated with a strong upward movement in personal disposable income and was accompanied by a higher level of personal saving.

The expansion in personal expenditure, which took place mainly in the first and final quarters of the year, was the largest since 1959. It was attributable mainly to a particularly sharp increase in net purchases of new and used automobiles-motor vehicle dealers'
sales rose by 11 p.c. Purchasing of durable goods in total was higher by 8 p.c. in 1962 in contrast to the lack of any strong movement in either of the years 1960 and 1961; prices were unchanged, indicating an equivalent rise in volume. Consumer spending on nondurable goods also rose but more in line with the annual increases experienced in recent years; an increase of 5 p.c. from 1961 to 1962 compared with 4 p.c. in the two previous years. A part of this slightly larger increase reflected the first full year's impact of the Ontario sales tax which was introduced in September 1961. Spending on food, tobacco and alcohol all contributed to the over-all picture of strength as their rate of increase was significantly higher than between 1960 and 1961. Price increases of about 1 p.c. associated with consumer goods in total were mainly a reflection of price increases in non-durable goods.

The slackening rate of increase in personal expenditure on services, apparent in recent years, continued in 1962 -expenditures rose by 4.5 p.c. In part, this reflected significant movements in personal spending of non-residents in Canada and of Canadians travelling abroad. Abstracting this influence, outlays for services increased by 6 p.c. The increases were general, although a diminished rate of growth in spending on shelter was noticeable as increases in rental rates became less pronounced, a tendency apparent since 1960.

Capital expenditure in 1962 amounted to $\$ 6,954,000,000$, nearly 5 p.c. higher than in the previous year. Roughly similar rates of increase (over 8 p.c.) occurred in outlays for housing and for machinery and equipment; expenditure on non-residential construction showed little change.

The rise in fixed capital formation in 1962, mainly a result of the strength in demand for producers' durable equipment, occurred in the first three quarters of the year. This strength was centred in the primary metal manufacturing industries, mining and agricultural sectors of the economy, the last probably reflecting to some extent spending from the higher farm incomes received during the year. Although there was little change from 1961 to 1962 in the value of construction of non-residential buildings and works, there were offsetting movements within the year. Expansion took place in spending for plant and equipment by manufacturers; the utilities spending program appeared on balance slightly lower, with increased spending by electric power and telephone utilities more than offset by completion of a large-scale pipeline construction program. Offsets also occurred between higher outlays by the agricultural and fishing industries and lower spending by the mining industry.

The rise in housing expenditure in 1962 reflected not only a higher number of housing starts but a larger carry-over of houses under construction at the beginning of 1962 than in the previous year. Starts rose from 125,577 in 1961 to 130,095 in 1962, approximately 4 p.c., while completions were higher by 9.5 p.c., increasing from 115,608 in 1961 to 126,682 in 1962. An increase in starts of rental dwellings more than offset a decline in starts of dwellings for home-ownership; partly associated with this trend was an increase in conventional mortgage lending and a shift away from financing under the National Housing Act.

Investment in business inventories played only a small part in the expansion of gross national product in 1962. For the year as a whole the addition to stocks amounted to $\$ 375,000,000$, although in the third quarter of the year stock-building at an annual rate of $\$ 800,000,000$ was very important.

The largest build-up of stocks occurred in manufacturing industries, with widespread accumulation in both durable and non-durable lines. The ratio of stocks to shipments throughout the year remained below the average of the previous year.

The accumulation of stocks in wholesale trade was virtually negligible, the liquidation in the first half of the year being largely offset by accumulation in the second. There was a considerable accumulation of stocks in the hands of retail dealers. Most of this accumulation was in the hands of automotive dealers, where sales were sharply higher and stocks had been drawn down slightly in the previous year.

Some of the most notable developments of the year occurred in the field of foreign trade where both exports and imports of goods and services rose to record levels. Exports amounted to $\$ 8,224,000,000$, close to 8 p.c. higher than in 1961, the rate of increase for goods being somewhat higher than for services. At the same time, imports of goods and services reached a value of $\$ 9,033,000,000$, nearly 6 p.c. above the level of 1961 ; all the increase was in the merchandise part of the account. The result was that the deficit on international current account fell from about $\$ 911,000,000$ to about $\$ 809,000,000$, all of the improvement occurring in the non-merchandise items.

The pattern of trade in 1962 was affected, among other things, by the stabilization of the Canadian dollar in May, at 92.5 cents in terms of United States currency. Furthermore, the foreign exchange crisis in June 1962 culminated in government action to relieve pressure on the Canadian dollar, to bring about a greater stabilization in Canada's international transactions, and to strengthen the exchange reserves. The net effect of these factors in terms of Canadian production was to contribute to an increase in exports of Canadian goods and services and to lower the portion of domestic demand being met from foreign sources. The deficit with non-residents on current account, on a year-to-year basis, showed a fairly small change but within the year it declined progressively from just over $\$ 1,000,000,000$ in the first quarter to less than half that in the final quarter, although some of this improvement may have resulted from a decline in imports from an irregularly high third-quarter level.

The rise in exports of goods occurred mainly in the second quarter of the year, but the high level was sustained throughout the remainder of the year. It was attributable in part to the economic expansion in the United States (the increase in exports to the United States on a year-to-year basis was greater than the total increase in exports), in part to the effect of changes in the exchange rate, and in part to aggressive export sales promotion by both business and government. Although newsprint and wheat remained the two principal commodity exports, the level of exports for both of these was lower than in 1961. The major gains were in sales abroad of iron ore, crude petroleum and natural gas. Of less importance in dollar terms, but items in which very substantial advances were recorded, were non-farm machinery, aircraft and parts, aluminum and lumber and products. Almost three quarters of the increase in exports was attributable to the commodity groups noted above.

Receipts for services also rose sharply in the second quarter and then remained at the new high level. This increase was due primarily to the increased travel expenditures of foreigners, encouraged in part by the more favourable rate of exchange, and to an increase in receipts of interest, and from freight and shipping services resulting from the increased volume of merchandise exports, such as iron ore, petroleum and natural gas.

Imports of goods rose through the first three quarters of the year, despite an unfavourable exchange rate which raised the price of imports to Canadians, and despite the imposition of an import surcharge on certain classes of goods at mid-year which had the same effect. However, in the final quarter of the year imports fell off sharply, reflecting in part the earlier changes, including the unusually high level of the previous quarter. Even with this decline at the year-end, imports of goods for the year were the highest on record, although some of the increase, as in exports, was due to the change in the exchange rate. The figures indicate a particularly sharp pick-up in non-farm machinery, electrical apparatus and automobile, parts, all of which are consistent with the strong demand, noted earlier, for producers' durables and automobiles. However, increases in the level of imports were general and occurred in almost all classes of goods. About 80 p.c. of the increase in merchandise imports arose from increased purchases from the United States.

Payments for services rose to a peak in the second quarter of 1962, reflecting accelerated transfer of interest and dividends on non-resident investment, larger payments for business services and the continued high level of Canadians' travel expenditures abroad; they fell
back in the third quarter and remained stable in the latter part of the year. The reductions were largely a result of lower travel expenditures, a reduced rate of payments of dividends, and a decline in miscellaneous expenditures.

## The Government Sector

At $\$ 7,721,000,000$, expenditures on goods and services of all levels of government combined, excluding inter-governmental transfers, were 7 p.c. higher in 1962, with divergent movements concealed in the total figure. Purchases by provincial and municipal governments rose by over 11 p.c., reflecting the increased building of vocational schools under the federal-provincial cost-sharing plan; this increase is in contrast to the small gain at the federal level, where a 4-p.c. expansion of defence outlays was almost offset by a fall in non-defence expenditures. Within 1962, total government purchases rose sharply from the first to the second quarter but declined gradually thereafter, reflecting the contraction in spending by the Federal Government.

Transfer payments to persons from all governments advanced by more than 7 p.c. At the federal level, primarily because of the increase in monthly payments from $\$ 55$ to $\$ 65$ in February 1962, the payments from the Old Age Security Fund rose by nearly 20 p.c. This increase was offset largely by a decline of more than 17 p.c. in unemployment insurance benefits, reflecting the improved employment situation. Provincial transfers to hospitals under the Hospital Insurance and Diagnostic Services Act were higher by almost 10 p.c. Subsidies paid by the Federal Government showed an increase of nearly 18 p.c., principally because of the loss incurred by the Agricultural Commodities Stabilization Board.

At the combined level, all revenue components showed increases in 1962 over the previous year. Federal indirect tax revenue was up almost 10 p.c., reflecting in part the imposition of the temporary surcharges announced in June 1962 and the rise in the value of imports between the two years. There was an increase in indirect taxes of more than 13 p.c. at the provincial-municipal level, including increases in receipts from provincial sales tax of over 60 p.c. (mainly because of the introduction of a sales tax in Ontario in September 1961), from provincial gasoline taxes of over 7 p.c., and from municipal real property taxes of about 8 p.c.

Where there was a considerable rise in total expenditures of all governments combined, the increase in revenues was even larger, with the result that the deficit on a national accounts basis declined significantly from $\$ 905,000,000$ in 1961 to $\$ 770,000,000$ in 1962.

## Income Flows

In 1962, labour income reached an estimated total of $\$ 20,359,000,000$, nearly 7 p.c. higher than in the previous year, reflecting an expansion in employment and a further rise in wage rates. Labour income rose most rapidly in the early part of the year. As in the recent past, the largest gains in labour income among the major industries occurred in the non-government service group (close to 11 p.c.). The next highest rate of change was in construction (more than 8 p.c.).

In 1962, more than 42 p.c. of wages and salaries originated in goods-producing industries and the remainder in service-producing industries, in contrast to the beginning of the postwar period when the contribution of the two segments to the total was about equal. This changed relationship reflects the tendency for wages and salaries to rise more rapidly in the service-producing than in the goods-producing industries.

Estimated at $\$ 3,254,000,000$, corporation profits (before taxes and before dividends paid to non-residents) continued to remain at record levels in 1962. During the first three quarters of the year, profits tended to level off at the peak attained in 1961, but showed a gain in the fourth quarter; for the year as a whole, they increased by 10.5 p.c. All industries
showed strength except wholesale trade, and finance, insurance and real estate. Manu-facturing-particularly metal industries (including transportation equipment)-mining, quarrying and oil wells, and retail trade showed notable gains.

Rent, interest, and miscellaneous investment income rose by about 5 p.c. in 1962. All components showed gains except net residential non-farm rents (paid and imputed), which were estimated to have fallen as the rate of increase in gross rents slowed down although operating expenses indicated no such change. The trading profits of government business enterprises showed a substantial increase of about 9 p.c. in the year. Interest, dividends and net rental income of persons was up about 7 p.c., mainly as a result of a rise in bond interest and in dividends received.

Accrued net income of farm operators reached a level of $\$ 1,391,000,000$ in 1962, over 42 p.c. higher than the estimate for 1961 and the highest level attained since the mid-1950's. Although cash receipts from the sale of farm products were at an all-time high, the largest part of the increase in accrued net income may be attributed to the greatly increased production of grains in Western Canada, resulting in a build-up of inventories on farms. The 1962 estimate of the value of crop production was $\$ 1,175,000,000$, about $\$ 550,000,000$ higher than the 1961 estimate. Farm cash receipts, the largest component of farm net income, increased over 4 p.c. Major items contributing to the increase were larger participation payments by the Canadian Wheat Board and higher returns from the sale of wheat, oats, cattle and calves, poultry, and dairy products. Farm operating expenses showed a further increase in 1962, slightly dampening the increase in gross income. Contributing to the increase were substantially higher outlays for farm rents, livestock feeds, and the operation of farm machinery, including repairs.

In a comparison with the year 1961, net income of non-farm unincorporated business increased 4 p.c. in 1962 to a level of $\$ 2,380,000,000$. Net income in most industry groups showed some increase, the greatest increases occurring in the retail trade, construction, community service and fishing industries. Slight declines were registered in the transportation and finance industries.
1.-Gross National Product, in Current and Constant (1949) Dollars, 1926-62

| Year | Millions of Current Dollars | $\begin{gathered} \text { Millions of } \\ \text { Constant (1949) } \\ \text { Dollars } \end{gathered}$ | Year | Millions of Current Dollars | $\begin{gathered} \text { Millions of } \\ \text { Constant (1949) } \\ \text { Dollars } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1926. | 5,152 | 7,576 | 1946. | 11,850 | 15, 251 |
| 1927. | 5,549 | 8,270 | 1947. | 13,165 | 15,446 |
| 1928. | 6,046 | 9,037 | 1948 | 15,120 | 15,735 |
| 1929. | 6,134 | 9,061 | 1949. | 16,343 | 16,343 17,471 |
| 1930. | 5,728 | 8,679 | 1950... | 18,006 |  |
| 1931. | 4,699 | 7,567 |  |  |  |
| 1932. | 3,827 | 6,798 | 1951. | 21,170 2395 | 18,547 20,027 |
| 1933. | 3,510 3,984 | 6,359 7,127 | 1952. | 23,995 25020 | 20,794 |
| 1935.... | 4,315 | 7,678 | 1954 | 24,871 | 20,186 |
|  |  |  | 1955. | 27,132 | 21,920 |
| 1936.... | 4,653 | 8,022 |  |  |  |
| 1937. | 5,257 | 88820 |  |  |  |
| 1938. | 5,278 5,636 | 8,871 9,536 | 1956. | 31,909 | 24,117 |
| 1940..... | 6,743 | 10,911 | 1958. | 32,894 | 24,397 |
|  |  |  | 1959 r | 34,915 | ${ }_{25,242}$ |
| 1941.... | 8,328 | 12,486 | 1960 r | 36,254 | 25,805 |
| 1942. | 10,327 | 14, 816 |  |  |  |
| 1944. | 11,850 | 15,927 | 1961 r. | 37,421 | 26,468 |
| 1945. | 11,835 | 15,552 | 1962. | 40,401 | 28,111 |

## 2.-National Income and Gross National Product, by Component, 1958-62

Note.-Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1122; for 1954 in the 1959 edition, p. 1089; for 1955 in the 1960 edition, p. 1116; and for 1956 and 1957 in the 1961 edition, p. 1091.
(Millions of dollars)

| Item | 1958 | 1959 r | 1960 ${ }^{\text {r }}$ | 1961 r | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Wages, salaries and supplementary labour income.......... | 16,521 | 17,459 | 18,251 | 19,068 | 20,359 |
| Military pay and allowances. | 491 | 496 | 509 | 550 | 586 |
| Corporation profits before taxes ${ }^{\text {a }}$. | 2,605 | 3,003 | 2,905 | 2,873 | 3,254 |
| Rent, interest and miscellaneous investment income. | 2,104 | 2,315 | 2,442 | 2,628 | 2,768 |
| Accrued net income of farm operators from farm production ${ }^{2}$ | 1,200 | 1,121 | 1,184 | 975 | 1,391 |
| Net income of non-farm unincorporated business ${ }^{3}$. . . . . . . . | 2,125 | 2,210 | 2,213 | 2,289 | 2,380 |
| Inventory valuation adjustment. | -35 | -122 | -80 | -67 | -132 |
| Net National Income at Factor Cost. | 25,011 | 26,482 | 27,424 | 28,316 | 30,606 |
| Indirect taxes less subsidies. | 3,882 | 4,259 | 4,470 | 4,716 | 5,261 |
| Capital consumption allowances and miscellaneous valuation adjustments. | 3,899 | 4,204 | 4,459 | 4,539 | 4,755 |
| Residual error of estimate. | 102 | -30 | -99 | -150 | -221 |
| Gross National Product at Market Prices. | 32,894 | 34,915 | 36,254 | 37,421 | 40,401 |

${ }^{1}$ Excludes dividends paid to non-residents. ${ }^{2}$ Includes changes in farm inventories. ${ }^{3}$ Includes net income of independent professional practitioners.

## 3.-Gross National Expenditure, 1958-62

Notz.-Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1124; for 1954 in the 1959 edition, p. 1089; for 1955 in the 1960 edition, p. 1117; and for 1956 and 1957 in the 1961 edition, p. 1092.
(Millions of dollars)

| Item | 1958 | 1959 r | 1960 r | 1961 r | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Personal expenditure on consumer goods and services. | 21,245 | 22,591 | 23,512 | 24,486 | 25,749 |
| Government expenditure on goods and services. | 6,180 | 6,490 | 6,755 | 7,205 | 7,721 |
| Current expenditure.......... | 4,791 | 4,967 | 5,185 | 5,668 | 5,937 |
| Gross fixed capital formation | 1,389 | 1,523 | 1,570 | 1,537 | 1,784 |
| Business gross fixed capital formation | 6,975 | 6,894 | 6,692 | 6,635 | 6,954 |
| New residential construction. | 1,763 | 1,734 | 1,443 | 1,458 | 1,577 |
| New non-residential construction | 2,811 | 2,589 | 2,577 | 2,683 | 2,668 |
| New machinery and equipment. | 2,401 | 2,571 | 2,672 | 2,494 | 2,709 |
| Change in inventories. | -322 | 357 | 361 | -144 | 565 |
| Non-farm business inventories. . . . . . . . . . . . . . . | -197 | 421 | 275 | 276 | 975 |
| Farm inventories and grain in commercial channels. | -125 | -64 | 86 | -420 | 190 |
| Exports of goods and services. <br> Deduct: Imports of goods and services | 6,340 $-7,423$ | 6,683 $-8,131$ | 7,008 $-8,172$ | 7,631 $-8,542$ | 8,224 $-9,033$ |
| Residual error of estimate. | -101 | 31 | 98 | 150 | 221 |
| Gross National Expenditure at Market Prices. | 32,894 | 34,915 | 36,254 | 37,421 | 40,401 |

## 4.-Gross National Expenditure in Constant (1949) Dollars, 1958-62

Nore.-Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the $1957-58$ Year Book, p. 1124; for 1954 in the 1959 edition, p. 1090; for 1955 in the 1960 edition, p. 1117; and for 1956 and 1957 in the 1961 edition, p. 1092.
(Millions of dollars)

| Item | 1958 | 1959 r | 1960 r | 1961 r | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Personal expenditure on consumer goods and services. | 16,585 | 17,392 | 17,908 | 18,480 | 19,157 |
| Government expenditure on goods and services. | 4,093 | 4,155 | 4,188 | 4,383 | 4,528 |
| Current expenditure | 3,044 | 3,055 | 8,059 | 3,222 | 8,255 |
| Gross fixed capital formation | 1,056 | 1,109 | 1,141 | 1,169 | 1,285 |
| Adjusting entry. | -7 | -9 | -12 | -8 | -12 |
| Business gross fixed capital formation. | 4,761 | 4,575 | 4,345 | 4,270 | 4,365 |
| New residential construction | 1,219 | 1,157 | 937 | 941 | 989 |
| New non-residential construction | 1,884 | 1,683 | 1,637 | 1,698 | 1,654 |
| New machinery and equipment. | 1,650 | 1,735 | 1,770 | 1,626 | 1,717 |
| Adjusting entry.. | 8 |  | 1 | 1,6 | 5 |
| Change in inventories. | -286 | 308 | 314 | -130 | 500 |
| Non-farm business inventories.......................... | -158 | 334 | 219 | 220 | 290 |
| Farm inventories and grain in commercial channels........ | -141 | -91 | 89 | -497 | 228 |
| Adjusting entry........ | 18 | 65 | 6 | 147 | -18 |
| Exports of goods and services. $\qquad$ <br> Deduct: Imports of goods and services. | 5,368 $-6,150$ | 5,574 $-6,776$ | 5,806 $-6,743$ | 6,240 $-6,823$ | 6,517 $-6,911$ |
| Residual error of estimate. Adjusting entry. | -74 | 22 -8 | 69 -82 | 106 -58 | 153 -198 |
| Gross National Expenditure in Constant (1949) Dollars. | 24,397 | 25,242 | 25,805 | 26,468 | 28,111 |
| Index of gross national expenditure ( $1949=100$ ) | 149.3 | 154.4 | 157.9 | 162.0 | 172.0 |

## 5.-Personal Income, by Source, 1958-62

Note.-Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1125 ; for 1954 in the 1959 edition, p. 1090 ; for 1955 in the 1960 edition, p. 1118; and for 1956 and 1957 in the 1961 edition, p. 1093.
(Millions of dollars)

| Item | 1958 | 1959 r | 1960r | 1961 r | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Wages, salaries and supplementary labour income | 16,521 | 17,459 | 18,251 | 19,068 | 20,359 |
| Deduct: Employer and employee contributions to social |  |  |  |  |  |
| insurance and government pension funds................ | -615 | -652 | -745 | -787 | -816 |
| Military pay and allowances.......................... | 491 | + 496 | 509 1 178 | ${ }_{949}^{550}$ | 1,402 |
| Net income received by farm operators from farm production Net income of non-farm unincorporated business. | 2,125 | 1,126 2,210 | 2,213 | 2,289 | 2,380 |
| Interest, dividends and net rental income of persons......... | 2,277 | 2,599 | 2,836 | 2,985 | 3,186 |
| Transfer Payments (excluding interest)- |  |  |  |  |  |
| From governments....... | 2,637 38 | 2,755 43 | 3,129 40 | 3,408 | 3,652 45 |
| Totals, Personal Income | 24,675 | 26,036 | 27,411 | 28,506 | 30,794 |

## 6.-Disposition of Personal Income, 1958-62

Note.-Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1125; for 1954 in the 1959 edition, p. 1092; for 1955 in the 1960 edition, p. 1118; and for 1956 and 1957 in the 1961 edition, p. 1093.
(Millions of dollars)

| Item | 1958 | 1959 r | 1960 r | 1961 r | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Personal Direct Taxes- |  |  |  |  |  |
| Income taxes. | 1,554 | 1,744 | 1,978 | 2,131 | 2,311 |
| Succession duties... | ${ }_{115}^{126}$ | ${ }_{214}^{130}$ | ${ }_{224}^{158}$ | ${ }_{236}^{144}$ | ${ }_{237}$ |
|  | 21,245 | 22,591 | 23,512 | 24,486 | 25,749 |
| Personal net savings........... | 1,635 | 1,357 | 1,539 | 1,509 | 2,331 |
| Totals, Personal Income | 24,675 | 26,036 | 27,411 | 28,506 | 30,794 |

## 7.-Personal Expenditure on Consumer Goods and Services, 1958-62

Note.-Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1126; for 1954 in the 1959 edition, p. 1092; for 1955 in the 1960 edition, p. 1118; and for 1956 and 1957 in the 1961 edition, p. 1093.
(Millions of dollars)

| Item | 1958 | 1959 r | 1960 r | 1961 r | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Foods.. | 5,236 | 5,465 | 5,701 | 5,796 | 5,985 |
| Tobacco and alcoholic beverages. | 1,441 | 1,552 | 1,601 | 1,640 | 1,729 |
| Clothing and personal furnishings. | 2,179 | 2,267 | 2,355 | 2,409 | 2,501 |
| Shelter. | 3,154 | 3,442 | 3,636 | 3,811 | 3,993 |
| Household operation. | 2,701 | 2,873 | 2,918 | 3,031 | 3,187 |
| Transportation.............................. | 2,511 | 2,723 | 2,806 | 2,847 | 3,074 |
| Personal and medical care and death expenses | 1,611 | 1,769 | 1,924 | 2,068 | 2,229 |
| Miscellaneous................................... | 2,412 | 2,500 | 2,571 | 2,884 | 3,051 |
| Totals. | 21,245 | 22,591 | 23,512 | 24,486 | 25,749 |
| Durable goods. | 2,499 | 2,678 | 2,669 | 2,697 | 2,913 |
| Non-durable goods. | 10,878 | 11,373 | 11,785 | 12,257 | 12,877 |
| Services............. | 7,868 | 8,540 | 9,058 | 9,532 | 9,959 |

## 8.-Federal, Provincial and Municipal Government Revenue and Expenditure, 1958-62

Note.-Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1126 ; for 1954 in the 1959 edition, pp. 1092 and 1094; for 1955 in the 1960 edition, p. 1119; and for 1956 and 1957 in the 1961 edition, p. 1094.
(Millions of dollars)

| Item | 1958 | 1959 r | 1960 r | 1961 ${ }^{\text {r }}$ | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Revenue |  |  |  |  |  |
| Direct Taxes: Persons- |  |  |  |  |  |
| Income taxes... |  | 1,744 | 1,978 | 2,131 | 2,311 |
| Succession duties... | 126 | 130 | 158 | 144 | 166 |
| Miscellaneous taxes. | 115 | 214 | 224 | 236 | 237 |
| Direct taxes: corporations. | 1,315 | 1,581 | 1,562 | 1,612 | 1,750 |
| Withholding taxes........................................ | 48 | 74 | 79 | 116 | 125 |
| Indirect taxes. | 4,028 | 4,464 | 4,706 | 4,970 | 5,552 |
| Investment Income- <br> Interest. | 363 | 415 | 463 | 487 | 519 |
| Profits of government business enterprises................. | 574 | 583 | 590 | 643 | 692 |
| Employer and employee contributions to social insurance and government pension funds. | 615 | 652 | 745 | 787 | 816 |
| Totals, Revenue. | 8,738 | 9,857 | 10,505 | 11,126 | 12,168 |
| Expenditure |  |  |  |  |  |
| Purchase of goods and services. | 6,180 | 6,490 | 6,755 | 7,205 | 7,721 |
| Transfer PaymentsInterest. | 782 | 963 | 1,096 | 1,164 | 1,274 |
| Other.. | 2,637 | 2,755 | 3,129 | 3,408 | 3,652 |
| Subsidies. | 146 | 205 | 236 | 254 | 291 |
| Surplus or deficit (on transactions relating to the national accounts). | -1,007 | -556 | -711 | -905 | -770 |
| Totals, Expenditure. | 8,738 | 9,857 | 10,505 | 11,126 | 12,168 |

## 9.-Analysis of Corporation Profits, 1958-62

Note.-Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1127; for 1954 in the 1959 edition, p. 1094; for 1955 in the 1960 edition, p. 1119; and for 1956 and 1957 in the 1961 edition, p. 1094.
(Millions of dollars)

| Item | 1958 | 1959 r | 1960 ${ }^{\text {r }}$ | 1961 r | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Corporation profits before taxes. Dividends paid to non-residents. | 2,605 470 | 3,003 501 | 2,905 454 | 2,873 587 | $\begin{array}{r} 3,254 \\ 570 \end{array}$ |
| Corporation profits including dividends paid to non-residents | 3,075 | 3,504 | 3,359 | 3,460 | 3,824 |
| Deduct: Corporation income tax liabilities Excess of tax liabilities over collections. Tax collections. | $\begin{array}{r} -1,315 \\ -24 \\ 1,399 \end{array}$ | $\begin{array}{r} -1,581 \\ 156 \\ 1,425 \end{array}$ | $\begin{array}{r} -1,562 \\ -104 \\ 1,666 \end{array}$ | $\begin{array}{r} -1,612 \\ 61 \\ 1,551 \end{array}$ | $\begin{array}{r} -1,750 \\ 995 \\ 1,655 \end{array}$ |
| Corporation profits after taxes. | 1,760 | 1,923 | 1,797 | 1,848 | 2,074 |
| Deduct: Dividends paid to non-residents.................. | -470 | -501 | -454 | -587 | -570 |
| Corporation profits retained in Canada....................... <br> Deduct: Dividends paid to Canadian persons................. <br> Deduct: Charitable contributions from corporations. | 1,290 -376 -38 | 1,422 -393 -43 | 1,343 -430 -40 | 1,261 -439 -44 | 1,504 -480 -45 |
| Undistributed Corporation Profits............. | 876 | 986 | 873 | 778 | 979 |

## 10.-Corporation Profits before Taxes (including Dividends Paid to Non-residents), by Industry, 1958-62

Note.-Comparable figures for the years 1954 and 1955 are given in the 1957-58 Year Book, p. 1127; and for 1956 and 1957 in the 1959 edition, p. 1094.
(Millions of dollars)

| Industry | 1958 | 1959 r | 1960 r | 1961 r | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Agriculture... |  |  |  |  |  |
| Forestry....... | 9 | 11 | 3 | 16 | 16 |
| Fishing and trapping |  |  |  |  |  |
| Mining, quarrying and oil wells. | 246 | 326 | 361 | 395 | 430 |
| Manufacturing.......... | 1,401 | 1,658 | 1,519 | 1,542 |  |
| Construction.. | 173 | 113 | 79 133 | 95 129 | ${ }_{127}$ |
| Transportation. | 96 12 | 134 15 | 133 13 | 129 | 11 |
| Communications | 81 | 116 | 129 | 139 | 160 |
| Electric power, gas and water utilit | 57 | 72 | 84 | 88 | 94 |
| Wholesale trade................... | 241 | 272 | 240 | 227 | 220 |
| Retail trade. | 241 | 256 | 219 | 217 | 505 |
| Finance, insurance and real estate | 445 73 | 446 85 | 497 82 | 523 75 | 85 |
| Totals. | 3,075 | 3,504 | 3,359 | 3,460 | 3,824 |

## Section 2.-Industry Production Trends*

The Dominion Bureau of Statistics has made available a new set of historical 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 gross domestic product (GDP) at factor cost originating by industry". $\dagger$

[^321]In measuring the production of a single product such as steel, it is normal to think of so many 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, in such a case, it is appropriate to use the average unit prices of some time period (chosen as a base) to value the quantities produced before adding them together. The resultant quantity, volume, or real output measure can subsequently be left in its constant or base 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 inputs (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 value added or GDP volume indexes can be regarded as an extension of the index of industrial production to encompass the remainder of the economy. Concepts and basic methodology used to construct the indexes are the same in both cases. 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 encompass all other major industrial divisions-agriculture, forestry, fishing and trapping, construction, retail and wholesale trade, finance, insurance and real estate, transportation, storage, communication, public administration and defence, and community, recreation, business and personal service; however, only the index of industrial production and its components are published currently and on a monthly basis. 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 accounts.*

[^322]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 following chart.


Factors Underlying Industrial Output Trends, 1935-62.-Over the course of the past three decades, the world has undergone profound economic changes, the more dramatic and far-reaching of which were: the depression of the 1930's and the subsequent slow recovery; the unprecedented upheaval of the Second World War; the emergence of new national and international spheres of influence in the postwar era, both on the political and on the economic fronts; the ever-present social flux with its attendant changes in mode of living; and the striking advances in the fields of science and technology-two forces which are themselves among the greatest contributors to change. Canada has not escaped these influences. Insofar as it has an open economy, sensitive to changes in world economic climate and affected in many ways by the powerful and technologically advanced economy of the United States, Canada may be said to be particularly susceptible to them. It is against this background that Canadian economic development during the 1935-62 period should be reviewed.

During this period, Canada's real domestic product more than tripled, growing at an average annual compound rate of 4.4 p.c. This growth resulted from the combined pressures brought to bear upon the various goods-producing and service-producing industries by the inter-related changes in demand (both domestic and foreign), technology, capital formation, marketing techniques and the labour force. The domestic market expanded considerably during this period, especially in the 1950's when immigration and net family formation reached a postwar peak. The population of Canada increased from $10,845,000$ in mid-1935, through $13,712,000$ in 1950 to $18,570,000$ in mid-1962, an average annual compound rate of increase of 2.2 p.c.

The tremendous expansion in productive activity following the outbreak of World War II, when output almost doubled within a period of five years, was facilitated by the existence of a large unused labour pool at the outset of hostilities. During the war years a large proportion of resources was diverted to the war effort, resulting in the expansion of many defence-oriented industries. At the same time, shortages of consumer goods and investment goods were created in other areas while income and savings were rising. During the immediate postwar period a certain amount of industrial dislocation occurred as a result of re-tooling and a large-scale changeover to peacetime production, coupled with major labour unrest in some industries. This phase of readjustment, however, did not generally extend beyond 1946, following which production resumed its upward trend.

The postwar period was marked by three 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. The second was based on the requirements of defence-supporting industries following the outbreak of the Korean hostilities, and on stock-piling requirements at home and abroad. The third was the investment boom of the mid-1950's during which output reached a new high level. These strong demand influences combined to make most of the period one of fairly rapid and sustained growth. Production data reveal, however, a diminishing rate of increase during the late 1950's, as external sources of supply for many commodities multiplied and as the competition encountered by many Canadian producers 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 periods. During the early 1960's, however, the first waves of the postwar generation were beginning to swell the labour force and to exercise their influence on the demand for goods and services.

Along with the increases in total final demand there were also 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, while the share of exports declined from 26.4 p.c. in 1935 to 20.4 p.c. in 1962, 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 77.4 p.c. in 1935 to 63.7 p.c. in 1962.

Even more remarkable than some of the-demand-induced changes were the striking changes brought about by the technological discoveries and innovations that have transformed whole production processes and opened up hitherto unknown areas in the fields of manufacturing, transportation and communication. Newer industries, such as air transport, have assumed major importance in a comparatively short time; entirely new industries, such as gas pipelines, have appeared; and a profusion of new products have been created, such as the petrochemicals of the chemicals industry and the television and other electronics 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. From 1946 to 1962, agriculture decreased its share of total employment by 15 p.c., while total employment continued to expand. In the same period the service-producing industries increased their share from 39 p.c. to just over 53 p.c. of the total.

## 11.-Quantity Indexes of Gross Domestic Product at Factor Cost, by Industry of Origin, 1935-62

$(1949=100)$

| Industry | 1935 | 1936 | 1937 | 1938 |  | 1939 | 1940 | 1941 | 1942 | 1943 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Goods-producing industries. | 49.2 | 51.9 | 58.1 | 58.0 |  | 63.3 | 72.5 | 83.7 | 102.1 | 99.0 |
| Agriculture. | 95.0 | 85.0 | 85.5 | 109.5 |  | 126.8 | 127.8 | 106.6 | 164.2 | 102.4 |
| Forestry. | 59.2 | 66.8 | 87.1 | 56.8 |  | 71.1 | 83.7 | 82.9 | 81.5 | 84.1 |
| Fishing and trapping | 72.4 | 76.0 | 73.9 | 75.5 |  | 78.4 | 79.8 | 83.9 | 80.0 | 80.9 |
| Mining ${ }^{1}$. | 60.8 | 68.3 | 79.4 | 83.7 |  | 90.3 | 96.2 | 101.0 | 99.1 | 88.8 |
| Manufacturing ${ }^{2}$ | 39.0 | 43.0 | 49.2 | 45.3 |  | 48.7 | 60.4 | 78.7 | 96.1 | 104.0 |
| Construction. | 33.5 | 37.5 | 44.7 | 42.2 |  | 43.4 | 49.1 | 63.6 | 67.9 | 65.6 |
| Electric power and gas utilities.. | 39.1 | 42.1 | 46.1 | 46.3 |  | 49.7 | 55.9 | 64.2 | 72.2 | 77.2 |
| Service-producing industries. | 50.2 | 52.9 | 55.5 | 55.2 |  | 57.3 | 66.2 | 77.9 | 88.5 | 9.2 |
| Transportation, storage, communication. $\qquad$ | 43.2 | 46.8 | 49.7 | 48.7 |  | 51.6 | 63.4 | 77.8 | 87.7 | 8.0 |
| Trade. | 45.1 | 48.5 | 52.3 | 50.9 |  | 53.4 | 58.4 | 65.1 | 67.2 | 68.8 |
| Finance, insurance and real estate | 58.4 | 60.7 | 60.4 | 59.8 |  | 60.4 | 61.3 | 64.3 | 67.4 | 69.7 |
| defence | 47.9 | 49.0 | 51.6 | 56.3 |  | 61.6 | 104.8 | 159.6 | 235.3 | 311.2 |
| Community, recreation, business and personal service............ | 55.7 | 57.9 | 61.4 | 61.8 |  | 62.5 | 66.2 | 70.9 | 71.9 | 4.4 |
| Gross Domestic Product. ... | 49.7 | 52.4 | 56.7 | 56.5 |  | 60.2 | 69.2 | 80.6 | 95.0 | 99.0 |
|  | 1944 | 1945 | 1946 | 1947 |  | 1948 | 1949 | 1950 | 1951 | 1952 |
| Goods-producing indust | 101.4 | 89.5 | 88.2 | 93.4 |  | 98.3 | 100.0 | 107.4 | 117.7 | 127.0 |
| Agriculture | 126.2 | 94.8 | 109.4 | 102.8 |  | 106.1 | 100.0 | 106.2 | 120.9 | 148.8 |
| Forestry. | 87.1 | 93.5 | 103.1 | 118.7 |  | 118.8 | 100.0 | 118.9 | 141.5 | 129.7 |
| Fishing and trapping | 78.5 | 87.6 | 87.1 | 81.0 |  | 87.6 | 100.0 | 108.9 | 111.5 | 101.6 |
| Mining ${ }^{1}$ | 79.7 | 77.2 | 74.3 | 78.5 |  | 90.0 | 100.0 | 109.5 | 123.4 | 131.0 |
| Manufacturing ${ }^{2}$ | 106.1 | 92.9 | 85.2 | 93.2 |  | 97.3 | 100.0 | 106.2 | 115.0 | 118.5 |
| Construction | 53.5 | 54.9 | 68.4 | 79.7 |  | 89.2 | 100.0 | 106.7 | 110.6 | 123.2 |
| Electric power and gas utilities.. | 78.2 | 75.7 | 79.4 | 89.8 |  | 94.8 | 100.0 | 113.2 | 129.4 | 140.7 |
| Service-producing industries. | 104.7 | 104.3 | 91.6 | 94.2 |  | 95.8 | 100.0 | 105.2 | 111.1 | 117.8 |
| Transportation, storage, communication. | 100.1 | 98.7 | 90.5 | 98.2 |  | 99.8 | 100.0 | 103.3 | 113.1 | 119.4 |
| Trade. | 72.8 | 77.4 | 89.4 | 97.3 |  | 96.0 | 100.0 | 106.9 | 108.1 | 114.6 |
| Finance, insurance and real estate | 72.1 | 75.5 | 81.6 | 87.7 |  | 93.4 | 100.0 | 105.6 | 113.4 | 118.4 |
| Public administration and defence | 342.1 | 309.3 | 124.7 | 92.6 |  | 92.3 | 100.0 | 106.6 | 119.0 | 136.3 |
| Community, recreation, business and personal service. | 77.1 | 81.5 | 89.3 | 92.9 |  | 95.9 | 100.0 | 103.3 | 107.9 | 112.1 |
| Gross Domestic Product. ... | 103.0 | 97.0 | 89.8 | 93.8 | 97.1 |  | 100.0 | 106.4 | 114.6 | 122.7 |
|  | 1953 | 1954 | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 | 1962 |
| Goods-produci | 130.3 | 123.5 | 139.2 | 152.5 | 148.3 | 3149.1 | 155.9 | 156.7 | 157.9 | 170.6 |
| Agriculture | 136.3 | 104.3 | 132.1 | 141.7 | 117.5 | 5125.1 | 125.2 | 128.0 | 116.0 | 134.7 |
| Forestry.. | 123.7 | 128.4 | 135.7 | 143.4 | 130.5 | 5115.6 | 130.6 | 141.8 | 130.8 | 140.5 |
| Fishing and trappin | 103.6 | 112.3 | 105.6 | 111.6 | 105.5 | 5117.8 | 105.9 | 104.1 | 115.7 |  |
| Mining ${ }^{\text {Manufacturing }}{ }^{\text {2 }}$ | 142.1 | 158.7 | 185.2 134.7 | 212.3 145.1 | 227.8 142.9 | 8 227.0 <br> 140.7  | 251.1 149.8 | 253.3 149.3 | 156.9 153.0 | 164.9 |
| Construction. | 130.1 | 129.8 | 139.8 | 165.7 | 174.7 | 7178.4 | 170.7 | 163.0 | 168.4 | 171.0 |
| Electric power and gas utilities.. | 147.9 | 161.4 | 183.3 | 204.9 | 220.3 | 3239.1 | 268.7 | 298.0 | 317.7 | 337.7 |
| Service-producing industries. | 122.7 | 124.3 | 132.9 | 142.3 | 145.6 | 6148.7 | 157.1 | 160.5 | 165.3 | 172.4 |
| Transportation, storage, communication. | 120 | 117.9 | 133.6 | 149.2 | 149.5 | 5146.6 | 160.6 | 163.9 | 172.1 | 179.2 |
| Trade... | 121.3 | 120.6 | 132.0 | 144.2 | 144.6 | 147.4 | 156.4 | 156.6 | 158.2 | 166.8 |
| Finance, insurance and real estate | 123.2 | 129.9 | 136.5 | 141.5 | 150.9 | 156.1 | 163.5 | 169.5 | 175.5 | 182.9 |
| Public administration and defence. $\square$ | 144.2 | 151.3 | 156.3 | 158.9 | 163.7 | 7171.3 | 175.0 | 177.8 | 183.9 | 187.9 |
| Community, recreation, business and personal service. | 115.7 | 117.3 | 119.9 | 127.0 | 130.6 | 6135.2 | 141.4 | 147.4 | 152.2 | 158.2 |
| Gross Domestic Product. . | 126.7 | 123.9 | 136.3 | 147.7 | 147.0 | 148.9 | 156.5 | 158.5 | 161.4 | 171.4 |

${ }^{1}$ Contract drilling (excluding drilling for oil and gas) is not included here but is included in the totals "Goodsproducing industries" and "Gross Domestic Product". $\quad{ }^{2}$ Repair service establishments classified to manufacturing are not included here but are included in the totals "Goods-producing industries" and "Gross Domestic Product'.

Industrial Expansion, 1935-62.-An examination of industrial expansion since 1935 reveals certain well-defined patterns of development. Individual industries have flourished or, in rare instances such as coal mining, have declined but the major industry groups have all expanded. Development, however, has not been uniform throughout the period. Three major types of factors affecting the expansionary path of industry have been in evidence in the Canadian economy 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 played such an important role in the mining industry during the latter half of the 1950 's, the opening up of new mineral resources such as the iron ore mines in QuebecLabrador, and certain technological innovations such as the development of synthetic textiles 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, 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-1950's or the rapid expansion in production immediately following the Second World War.

The third type of factor would be some unique and far-reaching event, of which the Second World War and the Korean War might serve as conspicuous examples. Each afforded a powerful stimulus to growth in a large cross-section of industries.

All three factors, jointly or in turn, have reacted on the various industries resulting in the upswings in aggregate production. The effect of these factors on the individual industries is revealed to some extent by their relative rates of growth.
12.-Growth Rates of the Main Industrial Groups, 1935-62 and 1946-62

| Industry | 1935-62 | 1946-62 | Industry | 1935-62 | 194^-62 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | p.c. | p.c. |  | p.c. | p.c. |
| Goods-producing industries. | 4.4 | 4.1 | Service-producing industries. | 4.5 | 4.3 |
| Agriculture. | 0.9 | 1.3 | Transportation, storage and com- |  |  |
| Forestry.. | 3.1 | 1.4 | munication..................... | 5.0 | 4.4 |
| Fishing and trapping | 2.2 | 1.8 | Finance, insurance and real estate... | 5.2 | 5.1 |
| Mining. | 7.3 | 9.3 | Public administration and defence | 3.4 | 4.5 |
| Manufacturing . | 5.0 | 3.9 | Community, recreation, business |  |  |
| Construction. | 6.7 | 5.8 | and personal service.............. | 4.0 | 3.6 |
| Electric power and gas utilities. | 8.3 | 9.7 | Gross Domestic Product | 4.4 | 4.2 |

Foremost in growth was the electric power and gas utilities industry which showed an average annual compound rate of growth of close to 10 p.c. during the postwar period, while its longer-term growth rate was 8.3 p.c.; large-scale hydro-electric power developments along with the expansion of natural gas distribution helped to sustain this remarkable performance. The mining and construction industries ranked second and third, respectively. All three industries have been strongly affected by technological advances, new discoveries and a fairly well sustained demand for their products. In the case of mining, this demand 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-1950's but demand for housing proved to be a sustaining influence during most of the period.

The industry divisions consisting of manufacturing, transportation, storage and communication, trade, and finance, insurance and real estate all expanded at roughly the same average rate during the $1935-62$ period-close to 5 p.c. The rates of growth of these industries for the postwar period diverged slightly but still fell within the range of 4 to 5 p.c. During the latter period, public administration and defence also had a growth rate within this range. Although these industries expanded at about the same rates, the manufacturing, trade, and transportation, storage and communication industry divisions, which together account for about one half of total output, also showed strikingly similar cyclical patterns. In fact, these are the three industry divisions within the Canadian economy that showed the most pronounced and consistent patterns of cyclical swings during the postwar period.

The Second World War and, to some extent, the Korean War provided strong impetus to the output of the manufacturing industries and to transportation. Within manufacturing, it was the durable manufactures component which expanded considerably during both periods of hostilities and which benefited from the need for machinery and equipment during the investment boom and from consumer demand during the early part of the postwar expansion. Non-durables maintained a fairly steady rate of expansion for most of the period, largely in response to increased population and demand for industrial materials. Trade was less strongly affected by defence requirements. Retail trade, in particular, exhibited a relatively smooth expansionary path.

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, and non-durables, it helped to sustain aggregate production and growth during periods of contraction and expansion. Within the division, business services showed very rapid advances, reflecting increased use of advertising, accounting and legal services. Among the community services group, education and hospitals showed very pronounced gains but recreation services did not participate in the general upsurge during the 1950's. Within the personal services group, one of the more interesting developments was the decline in the domestic service component, while other industries such as restaurants, hotels and motels made considerable gains. Thus, while this division as a whole showed a less-than-average rate of growth, some of its components 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 output. Forestry experienced sharp year-to-year fluctuations because of the nature of its production process and also, to some extent, because of its sensitivity to changes in world demand and price. The volume of agricultural production varies, of course, with the crop produced and its output depends to a far greater extent on weather conditions and similar factors than to changes in prices and demand. It is interesting to note, however, that particularly poor crop years have coincided with the cyclical declines in the gross domestic product during the postwar period. Generally speaking, there has been a lack of buoyant expansion in agricultural production but, although the rate of growth was low, the year-to-year changes were sometimes quite spectacular. In absolute terms, the industry production levels have continued to rise over the longer term, and this increase has been accomplished with a declining labour force.



## Section 3.-Canadian Balance of International Payments*

Developments connected with the Canadian balance of international payments have drawn a good deal of public attention in recent years. For a long period wide degrees of imbalance in Canada's international accounts have been characteristic. Each year since 1950 Canada's current expenditures abroad have exceeded current external income with the exception of 1952. These large current deficits, which have ranged as high as $\$ 1,504,000,000$ in 1959, have been financed by massive inflows of capital. Although the deficits since then have been reduced, the current imbalance even by 1961 was still $\$ 982,000,000$. In 1962 the deficit for the year was reduced to $\$ 848,000,000$ due to improvements in the second half of the year, and the trend toward improvement continued in 1963.

Developments within 1962 were diverse and, as a result, the accounts for the year as a whole reflect two contrasting periods. In the first half of the year there was a rapid loss of foreign exchange holdings which led to the exchange crisis in June and to the series of official measures introduced in the second quarter with the object of stabilizing the international exchange value of the Canadian dollar and Canada's international transactions. In the first half of the year there had been net outflows of capital and a growing current account deficit. In the second half of the year there was a rapid restoration in official holdings of exchange accompanying large capital inflows and a contraction in the size of the current account deficit.

The official measures introduced in the second quarter of 1962 included the stabilization of the foreign exchange value of the Canadian dollar announced by the Minister of Finance on May 2, and the comprehensive program announced by the Prime Minister late in June 1962. This program included temporary graduated surcharges ranging between 5 p.c. and 15 p.c. on approximately half of all Canadian imports, a reduction in the amount of goods that Canadians travelling abroad were permitted to bring duty-free into Canada, reductions in government expenditures and the fixing of the bank rate at 6 p.c. To reinforce the reserves, Canada arranged for international financial support for well over

[^323]$\$ 1,000,000,000$ in cash and stand-by credits from the International Monetary Fund, the Federal Reserve System of the United States, the Bank of England, and the Export-Import Bank of Washington. After drawing $\$ 650,000,000$ of these resources, Canada's official holdings of gold and foreign exchange at the mid-year were $\$ 1,809,000,000$.

In the third quarter there were large increases in the official reserves of foreign exchange and other evidences of the restoration of confidence in Canada's ability to defend the exchange rate. A return of short-term capital from abroad contributed initially to the recovery of the reserves and the resumption of long-term capital inflows helped to consolidate the restoration. Accordingly, the above-mentioned international short-term credits were progressively retired so that at the end of 1962 only the drawing of $\$ 300,000,000$ from the International Monetary Fund remained outstanding. It was also possible to withdraw some of the surcharges on imports before the end of 1962 and these were all removed by the end of the first quarter of 1963.

From their low point in June 1962, the official holdings of gold and United States dollars increased rapidly to $\$ 1,159,000,000$ at the end of the month, $\$ 1,795,000,000$ by the end of the third quarter and $\$ 2,239,000,000$ by the end of the year, expressed in United States funds and exclusive of the international financial assistance.

Current Account Transactions.-The surplus on merchandise trade,* which emerged in 1961 for the first time since 1954, was maintained in 1962, although at a slightly lower level of $\$ 155,000,000$. However, a better than $10-$ p.c. reduction in net payments on non-merchandise transactions from $\$ 1,155,000,000$ to $\$ 1,003,000,000$ caused the current account deficit to decline from $\$ 982,000,000$ to $\$ 848,000,000$ in 1962 . The balance on merchandise trade has varied widely, with the peak deficit of $\$ 728,000,000$ occurring in 1956, when it accounted for more than one half of the total deficit. On the other hand, the non-merchandise deficit has risen steadily since 1952, except for the decline in 1962.

Since 1954, when merchandise exports and imports were almost equal at $\$ 3,900,000,000$, exports have increased fairly steadily to a peak of $\$ 6,364,000,000$ in 1962 , a 60 -p.c. advance. 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 remained at about that level until 1961, except for a sharp drop of nearly 8 p.c. to $\$ 5,066,000,000$ in 1958 . In 1962 imports rose more than 8 p.c. over 1961 to a record level of $\$ 6,209,000,000$.

In the past decade or so, the relative importance of exports of metals and minerals increased markedly, the relative importance of other materials for industry, such as chemicals and fertilizers, advanced more moderately, and the percentage shares for farm and forest products narrowed visibly. The relative position of wheat and wheat flour, which had been diminishing, recovered sharply in 1961, owing to large shipments of grain to mainland China and other communist countries. Notwithstanding a decline of some 6 p.c. in 1962, exports of wheat and wheat flour in the two most recent years were nearly as high as in 1952 and 1953, which were the years of peak shipments in the past decade. In addition to newer products for export, such as iron ore, uranium, petroleum and natural gas, there were general increases in more traditional staples such as lumber, pulp and paper, nickel, aluminum and copper, with the metal items showing above-average gains. About 80 p.c. of the rise of $\$ 475,000,000$ in exports in 1962 originated from larger shipments of farm and fish products other than grain, forestry products excluding newsprint, iron ore, crude petroleum and natural gas, and aircraft and parts. After the substantial gain in 1961, exports of grain and flour declined some 7 p.c. in 1962, with the reductions largely concentrated in shipments to countries in Eastern Europe. For the third successive year, exports of uranium dropped in 1962 to a level slightly more than half that of the peak year

[^324]1959. The rise of nearly $\$ 500,000,000$ in imports in 1962 was distributed widely over industrial materials, investment goods and consumer commodities. Each of the latter two groups accounted for just under one third of total imports in 1962, while industrial materials together with fuels and lubricants accounted for the remainder (see also Part I of Chapter XX on Foreign Trade).

The deficit on non-merchandise transactions of $\$ 1,003,000,000$, down 13 p.c. from the high level of $\$ 1,155,000,000$ of the preceding year, was over eight times as great as that of 1949 and double that of as recent a year as 1955. This expansion was attributable largely to the continuing rapid growth in Canada's indebtedness to foreign countries and to the rising population with higher per capita incomes. A total of $\$ 570,000,000$, or over one half of the 1962 deficit on "invisibles", was directly related to Canada's indebtedness abroad, with total interest and dividend payments by Canadians to non-resident investors reaching $\$ 781,000,000$. In addition, transfers in other forms of investment income amounted to well over $\$ 100,000,000$, and there were also substantial payments for a variety of business services by Canadian subsidiaries to their home offices and to other non-residents. Furthermore, some hundreds of millions of dollars worth of earnings, which accrued to foreigners but were retained in Canada for re-investment, are excluded from the current account.

From a peak of $\$ 207,000,000$ in 1959 and 1960 , net travel payments were reduced to $\$ 160,000,000$ in 1961, and were further cut down to $\$ 50,000,000$ in 1962 , which was about the level of the deficit on travel account in the early 1950's. In both 1961 and 1962, the improvement occurred wholly in transactions with the United States. Receipts from American visitors were up more than 15 p.c. each year, while expenditures by Canadians visiting the United States declined, particularly in the latter year. The stabilization of the Canadian dollar at a lowered value in terms of foreign currency and the additional restriction in the second quarter of 1962 to the privilege of duty-free purchases by Canadians abroad were important factors behind the narrowing of the deficit. To these net payments were added deficits of $\$ 90,000,000$ on freight and shipping services, $\$ 39,000,000$ on inheritances and transfers by migrants and $\$ 419,000,000$ covering government transactions, personal remittances, business services and miscellaneous income. Included in government expenditures were official contributions amounting to $\$ 32,000,000$, which compared with $\$ 56,000,000$ in the previous year. Against the expenditures in 1962 was an amount of $\$ 155,090,000$, representing gold production available for export.

The characteristic bilateral distribution of the Canadian balance of payments was maintained in 1962; a surplus from transactions with overseas countries partially covered a deficit-four times as large in absolute terms-with the United States. However, a larger decline in this deficit from $\$ 1,386,000,000$ to $\$ 1,116,000,000$ than in the surplus with overseas countries from $\$ 404,000,000$ to $\$ 268,000,000$ contributed to reducing the over-all deficit from $\$ 982,000,000$ to $\$ 848,000,000$. In current dollars, the 1962 deficit with the United States approximated the level in 1958 and was much higher than in any year before 1956. The surplus on current transactions with Britain continued to grow in 1962-from $\$ 26,000,000$ to $\$ 213,000,000$-while the substantial surplus of 1961 with other overseas countries was reduced by three quarters to $\$ 55,000,000$.

Capital Movements.-In 1962, Canada continued to draw substantially on the resources, both real and financial, of the other countries of the world. The outline of Canada's balance of international payments for the year, as traced out in capital movements and in the current account deficit, was broadly similar to that for 1961. But encompassed within the 1962 total were the exchange crisis of early summer, the effects of remedial measures and other developments through the course of the year. Capital movements in long-term forms, including direct investment, portfolio stocks and bonds, official loans and other long-term investments, totalled $\$ 693,000,000$ in 1962 , as compared with
$\$ 790,000,000$ in the previous year. Long-term capital financed 82 p.c. and 80 p.c., respectively, of the current account deficits in 1962 and 1961. The proportions were smaller in 1955, 1959 and 1960, but averaged about 94 p.c. for the postwar period as a whole.

The net inflow of capital to Canada for direct investment in foreign-controlled enterprises during 1962 was estimated at $\$ 525,000,000$, some $\$ 10,000,000$ higher than in 1961, and was exceeded only in three earlier postwar years-1956, 1959 and 1960. An unusually large proportion, perhaps as much as a third of the movement in 1962, was related to the acquisition of existing enterprises and interests and for refinancing. Approximately 60 p.c. of the direct investment inflow in 1962 originated in the United States and the remainder was about evenly divided between Britain and other overseas countries. Direct investment abroad of Canadian capital was estimated at $\$ 100,000,000$, up $\$ 20,000,000$ over the total for 1961.

Owing to the mid-year exchange crisis and to the re-entry in the final quarter of the Government of Canada as a borrower in the United States capital market for the first time since 1950, transactions in stocks and bonds between Canada and other countries were of more than usual interest in 1962. Net inflows from transactions in Canadian and foreign securities amounted to $\$ 257,000,000$, as compared with $\$ 306,000,000$ in 1961 and with an average of nearly $\$ 680,000,000$ for the four years 1956 to 1959 . While retirements of Canadian securities worth $\$ 322,000,000$ in 1962 were only moderately above the levels of recent years, new issues increased by a third to $\$ 710,000,000$, reaching a total exceeded only in 1957. At the same time, trade in outstanding Canadian securities led to a moderate net capital outflow, the first since 1955, as did also transactions in foreign securities. The over-all movement to Canada of portfolio security capital in 1962 came entirely from the United States with net inflows from that country of $\$ 430,000,000$, as there were outflows of $\$ 90,000,000$ to Britain and $\$ 83,000,000$ to other countries. Repayments totalling $\$ 129,000,000$ on loans made by the Government of Canada were received during 1962 from a number of European and Asian countries and included large prepayments from France and the Netherlands; and Canada subscribed $\$ 7,000,000$ for bonds of the United Nations.

The export of capital represented by the growth of Canada's official gold and foreign exchange holdings over the course of the year totalled $\$ 537,000,000$, or $\$ 207,000,000$ apart from the special international financial assistance received in connection with the exchange crisis in the second quarter of the year. In all, this aid amounted to $\$ 707,000,000$, representing a drawing from the International Monetary Fund of various foreign currencies equivalent to $\$ 300,000,000$ in United States funds, and of reciprocal currency arrangements with the central banks of the United States and Britain, under which amounts of $\$ 250,000,000$ and $\$ 100,000,000$, respectively, in terms of United States funds were made available to Canada. However, with the rapid restoration of confidence and of the official holdings of gold and foreign exchange, the latter arrangement was terminated in the final quarter and a Canadian dollar equivalent of $\$ 377,000,000$ was returned to the two countries, leaving a net balance of $\$ 330,000,000$ for international financial assistance. From a variety of factors including changes in accounts receivable and payable and due also to a repayment of bank loans financed from the sale abroad of a new corporate bond issue, inflows of "other capital movements" declined substantially from $\$ 467,000,000$ in 1961 to $\$ 280,000,000$. A more detailed description of the exchange crisis and of the corrective measures adopted and their effects are found in the relevant issues of the Quarterly Estimates of the Canadian Balance of International Payments (Catalogue No. 67-001).

Since the shift upward at the beginning of the 1950's, direct investment inflows have been a specially significant element in the capital account. Continuing and substantial, these receipts contributed in particular to resource development and the growth of associated industries. By far the largest part of the new capital went into the petroleum and natural gas industry, a dynamic element in the expansion of the Canadian economy in this period. Large amounts were also invested in other mining industries, particularly for the development of iron ore, and in various branches of manufacturing.

From 1956 to 1959, 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 in this period. Statistics and comments on the effects of the unprecedented capital inflows upon the ownership of investments in Canada will be found in Section 4 on Canada's International Investment Position.

## 13.-Current Account Transactions between Canada and,All Countries, 1943-62

(Millions of dollars)

| Year | Current Receipts ${ }^{1}$ | Current Payments ${ }^{2}$ | Net Balance including Mutual Aid Exports | Wartime Grants and Mutual Aid | Net Balance on Current Account indicating Net Movement of Capital |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1943. | 4,064 | 2,858 | +1,206 | -518 | +688 |
| 1944. | 4,557 | 3,539 | +1,018 | -960 | $+58$ |
| 1945. | 4,456 | 2,910 | +1,546 | -858 | +688 |
| 1946. | 3,365 | 2,905 | +460 | -97 | +363 |
| 1947..... | 3,748 | 3,699 | +49 | - | +49 |
| 1948. | 4,147 | 3,696 | +451 | - | +451 |
| 1949. | 4,089 | 3,912 | +177 | - | +177 |
| 1950 | 4,297 | 4,574 | -277 | -57 | -334 |
| 1951. | 5,311 | 5,683 | -372 | -145 | -517 |
| 1952. | 5,858 | 5,494 | +364 | -200 | +164 |
| 1953. | 5,737 | 5,934 | -197 | -246 | -443 |
| 1954. | 5,520 | 5,668 | -148 | -284 | -432 |
| 1955. | 6,072 | 6,548 | -476 | -222 | -698 |
| 1956. | 6,621 | 7,830 | -1,209 | -157 | -1,366 |
| 1957. | 6,622 | 7,970 | -1,348 | -107 | -1,455 |
| 1958. | 6,579 | 7,568 | -989 | -142 | -1,131 |
| 1959. | 6,855 | 8,296 | -1,441 | -63 | -1,504 |
| 1960. | 7,153 | 8,353 | -1,200 | -43 | -1,243 |
| 1961. | 7,769 | 8,716 | -947 | -35 | -982 |
| 1962p.. | 8,389 | 9,196 | -807 | -41 | -848 |

${ }^{1}$ Includes Mutual Aid exports.
${ }^{2}$ Excludes Mutual Aid offsets.

## 14.-Geographical Distribution of the Balance on Current Account between Canada and Other Countries, 1943-62

Nots.-In the years 1943-46 balances include exports of currently produced goods provided as Mutual Aid or Official Contributions. (See also Table 1.)
(Millions of dollars)

| Year | United States ${ }^{1}$ | Britain | Other Overseas Countries | $\underset{\text { Countries }}{\text { All }}$ | Year | United States ${ }^{1}$ | Britain | Other Overseas Countries | $\underset{\text { Countries }}{\text { All }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |
|  | -19 | +1,149 | +76 | +1,206 | 1953. . | -904 | +133 | +328 | -443 |
| 1944.... | +31 | +746 | +241 | +1,018 | 1954. | -807 | +229 | +146 | -432 |
| 1945. | +36 | +747 | +763 | +1,546 | 1955. | -1,035 | +330 | +7 | -698 |
| 1946. | -607 | +500 | +567 | +460 | 1956 | -1,639 | +252 | +21 | $-1,366$ |
| 1947. | -1,134 | +633 | +550 | +49 | 1957 | -1,579 | +118 | +6 | -1,455 |
|  |  | +486 | +358 | +451 | 1958. | -1,176 | +104 | -59 | -1,131 |
| 1949... | -601 | +446 | +332 | +177 | 1959. | -1,230 | +13 | -287 | -1,504 |
| 1950. | -400 | +24 | +42 | -334 | 1960. | -1,361 | +166 | -48 | -1,243 |
| 1951. | -951 | +223 | +211 | -517 | 1961. | -1,386 | +187 | +217 +55 | -982 |
| 1952.. | -849 | +388 | +625 | +164 | 1962p | -1,116 | +213 | +55 | -848 |

[^325]15.-Balance of International Payments between Canada and All Countries, 1956-62
(Millions of dollars)

| Item | 1956 | 1957 | 1958 | 1959 r | 1980 r | 1961 r | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| A. Current Receipts- |  |  |  |  |  |  |  |
| Merchandise exports (adjusted). | 4,837 | 4,894 | 4,887 | 5,150 | 5,392 | 5,889 | 6,364 |
| Mutual Aid to NATO countries. | 157 | 107 | -142 | 5,63 | - 43 | 5,889 35 | 6,364 |
| Gold production available for export | 150 | 147 | 160 | 148 | 162 | 162 | 165 |
| Travel expenditures. | 337 | 363 | 349 | 391 | 420 | 482 | 560 |
| Interest and dividends | 142 | 154 | 168 | 182 | 173 | 209 | 211 |
| Freight and shipping. | 457 | 445 | 401 | 420 | 442 | 486 | 498 |
| All other current credits | 541 | 512 | 472 | 501 | 521 | 506 | 550 |
| Totals, Current Receipts. | 6,621 | 6,622 | 6,579 | 6,855 | 7,153 | 7,769 | 8,389 |
| B. Current Pa |  |  |  |  |  |  |  |
| Merchandise imports (adjusted). | 5,565 | 5,488 | 5,066 | 5,572 | 5,540 | 5,716 | 6,209 |
| Travel expenditures. | 498 | 525 | 542 | 598 | 627 | 642 | 610 |
| Interest and dividends | 523 | 589 | 612 | 671 | 653 | 770 | 781 |
| Freight and shipping | 502 | 515 | 460 | 525 | 533 | 568 | 588 |
| Official contributions ${ }^{1}$ | 187 | 147 | 195 | 135 | 104 | 91 | 73 |
| All other current debits | 712 | 813 | 835 | 858 | 939 | 964 | 976 |
| Totals, Current Payment | 7,987 | 8,077 | 7,710 | 8,359 | 8,396 | 8,751 | 9,237 |
| Balance on merchandise trade | -728 | -594 | -179 | -422 | -148 | +173 | +155 |
| Balance on other transactions | -638 | -861 | -952 | -1,082 | -1,095 | -1,155 | -1,003 |
| C. Current Account Balance. | -1,366 | $-1,455$ | -1,131 | -1,504 | -1,243 | -982 | -848 |
| D. Capital Account- <br> Direct Investment- |  |  |  |  |  |  |  |
| Direct Investment- <br> Direct investment in Canada |  |  |  |  |  |  |  |
| Direct investment abroad.... | $\underline{+104}$ | ${ }_{+68}^{+514}$ | +428 -48 | +550 -80 | +650 -50 | +515 -80 | ${ }_{-100}^{+525}$ |
| Canadian Securities-. |  |  |  |  |  |  |  |
| Trade in outstanding issues. | +199 | +92 | +88 | +201 | +54 | +103 | -52 |
| New issues.. | +667 | +798 | +677 | +707 | +447 | +533 | +710 |
| Retirements.. | -141 | -133 | -158 | -258 | -265 | -297 | -322 |
| Foreign security transactions | +2 | + 6 | +3 | -33 | -19 | -33 | -79 |
| Repayments on Government of Canada loans... | +69 | +50 | +30 | +33 | +32 | +37 | +122 |
| Subscriptions in gold and U.S. dollars to international financial agencies | -4 | - |  | -59 | -3 | - | -1 |
| Change in Canadian dollar holdings of foreigners. | -24 | -35 | +106 | +13 | +120 | -34 | -28 |
| Change in official holdings of gold and foreign exchange (increase, minus) | -33 +152 | +105 +126 | -109 +122 | +70 +360 | +39 +238 | -229 +467 | -537 +610 |
| E. Net Capital Movement |  |  |  |  |  |  |  |
| E. Net Capital Movement | +1,366 | +1,455 | +1,131 | +1,504 | +1,243 | +982 | +848 |

${ }^{1}$ Includes Mutual Aid to NATO countries. and special international financial assistance of $\$ 330,000,000$ in 1962.
16.-Current and Capital Account Transactions between Canada and the United States, 1956-62
(Millions of dollars)

| Item | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 r | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
|  | 2,854 | 2,931 | 2,908 | 3,191 | 3,040 | 3, ${ }^{162}$ |  |
|  | 150 | 147 | 160 | 148 | 162 <br> 375 | 162 | 510 |
|  | 309 | 325 | 309 | 351 99 | 102 | 435 109 | 124 |
|  | 223 | 222 | ${ }_{206}$ | 228 | 220 | 230 | 260 |
|  | 399 | 350 | 327 | 363 | 380 | 361 | 382 |
|  | 4,015 | 4,070 | 4,010 | 4,380 | 4,279 | 4,510 | 5,183 |

16.-Current and Capital Account Transactions between Canada and the United States, 1956-62-concluded

| Item | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| B. Current Payments- |  |  |  |  |  |  |  |
| B. Merchandise imports (adjusted). | 4,021 | 3,878 | 3,443 | 3,727 | 3,713 | 3,828 | 4,217 |
| Travel expenditures.............. | 391 | 403 | 413 | 448 | 462 | 459 | 420 |
| Interest and dividends | 427 | 480 | 500 | 547 | 531 | 642 | 655 |
| Freight and shipping. . | 351 | 351 | 294 | 326 | 324 | 333 | 350 |
| All other current payments | 464 | 537 | 536 | 562 | 610 | 634 | 657 |
| Totals, Current Payments. | 5,654 | 5,649 | 5,186 | 5,610 | 5,640 | 5,896 | 6,299 |
| C. Current Account Balance. | -1,639 | $-1,579$ | $-1,176$ | $-1,230$ | $-1,361$ | -1,386 | $-1,116$ |
| D. Capital Account- |  |  |  |  |  |  |  |
| Direct Investment- |  |  |  |  |  |  |  |
| Direct investment in Canada. | +406 | +390 | +303 | +424 | +446 | +335 | $\cdots$ |
| Direct investment abroad. Canadian Securities- | -70 | -35 | -3 | -7 | -19 | -26 | $\cdots$ |
| Trade in outstanding issues. | +34 | -65 | +60 | +94 | $+47$ | +196 |  |
| New issues..... | +601 | +722 | +600 | +622 | +381 | +473 | $\cdots$ |
| Retirements. | -133 | -105 | $-132$ | -211 | -214 | -215 |  |
| Foreign security transactions................. | -3 | +9 | +2 | -36 | +4 | -7 | . |
| Subscriptions in gold and U.S. dollars to international financial agencies. | - | - | - | -59 | -3 | - | . |
| Change in Canadian dollar holdings of foreigners. | -48 | -10 | +83 | +8 | +60 | -23 | .. |
| Change in official holdings of gold and foreign exchange (increase, minus) | -34 | +104 | -108 | +67 | +39 | -227 |  |
| Other capital movements ${ }^{1}$....... | +103 | +58 | +147 | +447 | +285 | +633 |  |
| E. Net Capttal Movement | +856 | +1,068 | +952 | +1,349 | +1,026 | +1,139 | .. |
| F. Balance Settled by Exchange Transfers... | +783 | +511 | +224 | -119 | +335 | +247 | .. |
| Totals, Financing of Current Account Balance. | +1,639 | +1,579 | +1,176 | +1,230 | +1,361 | +1,386 | . |

${ }^{1}$ Includes unrecorded capital movements, and errors and omissions.

## 17.-Current Account Transactions between Canada and Britain, 1956-62

(Millions of dollars)

| Item | 1956 | 1957 | 1958 | 1959 | 1960 | $1961{ }^{\text {r }}$ | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| A. Current Receipts- |  |  |  |  |  |  |  |
| Merchandise exports (adjusted). | 818 | 734 | 766 | 781 | 924 | 924 | 924 |
| Travel expenditures...... | 14 | 18 | 18 | 18 | 20 | 21 | 22 |
| Interest and dividends. | 14 | 10 | 32 | 35 | 32 | 34 | 35 |
| Freight and shipping. | 98 | 95 | 84 | 80 | 93 | 100 | 92 |
| All other current receipts | 71 | 81 | 60 | 69 | 76 | 74 | 78 |
| Totals, Current Receipts. | 1,015 | 938 | 960 | 983 | 1,145 | 1,153 | 1,151 |
| B. Current Payments- |  |  |  |  |  |  |  |
| Merchandise imports (adjusted)............... | 493 | 520 | 537 | 618 | 611 | 593 | 575 |
| Travel expenditures. | 46 | 47 | 52 | 62 | 70 | 71 | 72 |
| Interest and dividends. | 73 | 78 | 76 | 90 | 83 | 86 | 82 |
| Freight and shipping. | 59 | 69 | 70 | 85 | 89 | 93 | 89 |
| All other current payments. | 92 | 106 | 121 | 115 | 126 | 123 | 120 |
| Totals, Current Payments. | 763 | 820 | 856 | 970 | 979 | 966 | 938 |
| C. Current Account Balance. | +252 | +118 | +104 | +13 | +166 | +187 | +213 |

## Section 4.-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 $\$ 27,800,000,000$ at the end of 1961 ; non-resident-owned long-term investments in Canada had reached a book value of $\$ 23,600,000,000$, having more than tripled since the end of World War II (by the end of 1963 they totalled well over $\$ 25,000,000,000$ ). The part of these investments in establishments controlled outside of Canada totalled $\$ 13,700,000,000$. These direct investments have been growing more rapidly than the total. 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 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 $\$ 9,800,000,000$ at the end of 1961 and govern-ment-owned assets 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 $\$ 17,900,000,000$, almost two thirds of which was incurred in the eight years since 1953. By the end of 1962, Canada's net balance of international indebtedness had risen to well over $\$ 19,000,000,000$.

Foreign Investments in Canada.-Dependence upon external sources of capital for financing in earlier periods of heavy investment activity has been characteristic of Canadian development. During the exceptional growth period that occurred before World War I the rate of increase in non-resident investment was very high and dependency upon external sources of capital was greater than in later periods. Total non-resident investments in Canada increased from an estimated $\$ 1,232,000,000$ in 1900 to $\$ 3,837,000,000$ by 1914, mainly in the form of bonded debt for railway and other expansion guaranteed by the Canadian Government. This was the period when the principal external source

[^326]of capital was London, and in 1914 British investments in Canada were estimated at $\$ 2,778,000,000$. By the same date, United States investments, although they had been increasing rapidly, had only about one third of the value of British-owned investments.

During the first part of the inter-war period the United States became the principal source of external capital, and by 1926 the United States-owned portion of Canada's international debt exceeded that owned in Britain, which had not increased since 1914. Growth in United States investments in Canada continued for some years but was interrupted in the 1930's when the total was reduced by repatriations of securities and other withdrawals of capital. Increases began again in the 1940's and by the end of World War II United States investments of $\$ 4,990,000,000$ compared with British investments of $\$ 1,750,000,000$. The latter had been reduced by wartime repatriation measures and the proceeds were used in financing British expenditures in Canada. Following the War, up to 1948, some further declines occurred in British investments in Canada but since then they have increased.

United States investments have risen each year since the end of World War II, particularly since 1947 when the period of intense activity in the petroleum industry got under way following new discoveries. More than half the growth in United States investment in Canada has occurred since 1953. At $\$ 17,966,000,000$, United States investments in 1961 continued to represent more than three quarters of all non-resident investments in Canada and also made up a similar ratio of the increase since 1953. The main rise occurred in direct investments in companies controlled in the United States, which are prominent in many branches of Canadian industry. By 1961 these had increased to well over twice their value in 1953. In the same period portfolio investments in Canada owned in the United States rose by more than four fifths. A considerable part of this latter rise occurred in the period 1956-59 when large sales of new issues of securities were made in that country.

British investments in Canada totalled $\$ 3,385,000,000$ at the end of 1961 . Although these investments then exceeded by more than $\$ 600,000,000$ the levels reached at the end of World War I and again in the early 1930's, they accounted for only about 14 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. British investments in Canada had more than doubled from the low point in 1948; the increase had been particularly concentrated in direct investments which had more than quadrupled and which, at the end of 1961, represented a much larger portion of the total than in the prewar period. In absolute terms, this rise in total British investments in Canada was slightly below the rise in investments by all other overseas countries in the same period, although the rate of increase was lower.

Investments of countries other than the United States and Britain reached a record total of $\$ 2,219,000,000$ at the end of 1961 . Exceeding four times the corresponding 1952 figure, this represented a much higher rate of increase than had occurred in either United States or British investments and large increases had taken place in portfolio holdings of securities as well as in direct investments. At about 10 p.c. of the total, this group of countries, mostly in Western Europe, made up a larger portion of total investments than ever before. Over 90 p.c. of the direct investments, which totalled $\$ 840,000,000$ in 1961 , also came from Western Europe; more than one quarter was of Belgian origin with Dutch, 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 1955 the net use of foreign resources amounted to about one fifth of net capital formation in Canada, and direct foreign financing amounted to about one third. But from 1956 to 1960 when these ratios had increased considerably to 33 p.c. and 45 p.c., respectively, they were still less than the corresponding ratios in the period 1929 to 1930 when inter-war investment activity was at its highest 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. 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 social 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 1959 and it should be noted that subsequent changes may have increased non-resident ownership even more. In that year the Canadian manufacturing industry was 51 p.c. owned by non-residents but capital subject to foreign control was 57 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 63 p.c. and 75 p.c., respectively, at the end of 1959 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 59 p.c. and 61 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 of business as a whole, including manufacturing, petroleum, mining, merchandising and railways and utilities, rose only slightly from 32 p.c. in 1948 to 34 p.c. in 1959 (the last year for which the calculation has been made). But, in the same years, companies subject to non-resident control increased from 25 p.c. to 32 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.

The petroleum and natural gas industry, including exploration and development, refining, merchandising, pipelines and other distribution facilities, has been the largest single recipient of capital inflows in the postwar period, accounting directly for far more than 40 p.c. of the inflow of United States capital for direct investment in Canada. By the end of 1959, investments in Canadian petroleum concerns controlled in the United States made up 69 p.c. of the total. Another 6 p.c. of the investment was controlled in overseas countries. Investments owned in the United States and overseas were 57 p.c. and 6 p.c., respectively, of the total.

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 in the United States. Such establishments having an investment of $\$ 1,000,000$ or more accounted for about 30 p.c. of Canadian manufacturing production in 1953 and 21 p.c. of employment in that field. These ratios in non-residentcontrolled plants were considerably higher than in 1946-the previous year for which a study of this kind was made.

In some industries the proportions of production and employment in plants controlled in the United States were much higher than this. Automobiles, for example, are mainly produced in United States-controlled plants, but this is exceptional. Among other industries where well over one half of the production is in United States-controlled firms are the smelting and refining of non-ferrous metals, petroleum refining, rubber products, and motor vehicle parts. In several major industries like electrical apparatus and supplies and non-ferrous metal products the distribution of control between Canadian and United States-controlled companies is more evenly divided. In other industries the non-resident share is large although less than one half the total. These include pulp and paper, other paper products, chemicals, medicinal and pharmaceutical products, sheet-metal products, and certain branches of the machinery industry.

There are, however, many industries where the largest part of production is in Canadian-controlled plants. Prominent among these are such important branches of
industry as primary iron and steel, and some other subdivisions of the iron and steel industry, textiles, clothing, and divisions of the foods and beverages industry, such as bakery products, beverages and dairy products. But even in some of these industries changes in ownership and control have been occurring in recent years.
18.-Estimate of the Canadian Balance of International Indebtedness, as at Dec. 31, 1939-61

Note.-Totals are rounded and may not represent the sum of their components.
(Billions ['000 millions] of dollars)


[^327] distribution not available.
${ }^{4}$ Excludes Government of Canada holdings of gold and foreign exchange.

## 19.-Foreign Capital Invested in Canada, by Type of Investment, as at Dec. 31, 1930-61

(Millions of dollars)

| Type of Investment | 1930 | 1945 | 1951 | 1955 | 1956 | 1958 | 1959 | 1960 ${ }^{\text {r }}$ | 1961p |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Government Securities- |  |  |  |  |  |  |  |  |  |
| Federal. | 682 | 726 | 1,013 | 529 | 502 | 564 | 612 | 611 | 657 |
| Provincial | 592 | 624 | 771 | 888 | 1,081 | 1,276 | 1,585 | 1,632 | 1,743 |
| Municipal | 432 | 312 | 319 | 452 | , 552 | ${ }^{1} 781$ | ${ }^{1} 915$ | 1,026 | 1,038 |
| Totals, Government Securities | 1,706 | 1,662 | 2,103 | 1,869 | 2,135 | 2,621 | 3,112 | 3,269 | 3,438 |
| Public Utilities- |  |  |  |  |  |  |  |  |  |
| Other (excluding pipelines and public enterprises) | 2,244 634 | $493$ | $524$ | $57$ | $628$ | 712 | 1,405 739 | 1,406 743 | 1,366 649 |
| Totals, Public Utilities | 2,878 | 2,092 | 1,960 | 1,938 | 2,054 | 2,125 | 2,144 | 2,149 | 2,015 |
|  |  |  |  |  |  |  |  |  |  |
| Petroleum and natural gas........ | 150 | 160 | '693 | 1,854 | 2,275 | 3,187 | 3,455 | 3,727 | 4,023 |
| Other mining and smelting | 311 | 356 | 586 | 1,121 | 1,330 | 1,657 | 1,783 | 1,977 | 2,089 |
| Merchandising. | 190 | 220 | 377 | 616 | 683 | 784 | 878 | 872 | 917 |
| Financial. | 543 | 525 | 595 | 1,231 | 1,488 | 1,938 | 2,190 | 2,380 | 2,614 |
| Other enterprises | 82 | 70 | 120 | 178 | 1207 | , 254 | 284 | , 297 | 348 |
| Miscellaneous investments | 295 | 284 | 328 | 641 | 818 | 1,0631 | 1,285 | 1,428 | 1,681 |
| Totals, Investment. . . . . . . . . | 7,614 | 7,092 | 9,477 | 13,473 | 15,569 | 19,010 | 20,857 | 22,214 | 23,570 |
| United States ${ }^{2}$. | 4,660 | 4,990 | 7,259 | 10,275 | 11,789 | 14,441 | 15,826 | 16,718 | 17,966 |
| Britain ${ }^{2}$. | 2,766 | 1,750 | 1,778 | 2,356 | 2,668 | 3,088 | 3,199 | 3,359 | 3,385 |
| Other countries. | 188 | 352 | 440 | 842 | 1,112 | 1,481 | 1,832 | 2,137 | 2,219 |

${ }^{1}$ New series. $\quad 2$ Includes some investments held for residents of other countries.

## 20.-Foreign Capital Invested in Canada by Type of Investment, classified by Estimated Distribution of Ownership, as at Dec. 31, 1961p

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.


[^328]Canadian Assets Abroad.-While there has been a great growth in non-resident investment in Canada and in the balance of indebtedness to other countries, it will be noted that Canadian assets abroad, shown in Tables 21 and 22, have continued to rise in value each year. These now represent a larger proportion of liabilities abroad than was the case before World War II, but more than half of the increase since then has been in government-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 1962 the government credits outstanding had a value of $\$ 1,379,000,000$ while official holdings of exchange amounted to $\$ 2,154,000,000$ 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, the International Finance Corporation and the International Monetary Fund which, by March 1963, amounted to $\$ 80,500,000, \$ 24,900,000, \$ 3,500,000$, and $\$ 577,300,000$, respectively; these were more than offset by liabilities to these institutions, including outstanding assistance to Canada by the International Monetary Fund.

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 1961 were made up of direct investments of $\$ 2,619,000,000$ and portfolio investments of $\$ 1,465,000,000$. More than 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 1961 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 there were investments in mining and petroleum as well as in industry. In foreign overseas countries the largest part is in the countries of Latin America where Canadian holdings in public utilities are substantial.

## 21.-Canadian Assets Abroad, 1939, 1948 and 1955-61

Nore.-Excludes investments of insurance companies and banks, Canada's subscriptions to international financial institutions and short-term assets, other than official holdings of gold and foreign exchange. Holdings of stocks are at book values as shown in the books of issuing companies; holdings of bonds are shown at par values. Foreign currencies are converted into Canadian dollars at current market rates. The series for portfolio investment was reconstructed in 1952 and is not strictly comparable with preceding years.
(Millions of dollars)

| Assets | 1939 | 1948 | 1955 | 1956 | 1957 r | $1958{ }^{\text {r }}$ | 1959 r | 1960 ${ }^{\text {r }}$ | 1961 p |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Direct investments in businesses outside Canada. | 671 | 788 | 1,742 | 1,891 | 2,073 | 2,149 | 2,295 | 2,481 | 2,619 |
| Portfolio holdings of foreign securities. | 719 | 605 | 991 | 1,006 | 1,068 | 1,118 | 1,183 | 1,315 | 1,465 |
| Government credits. | 31 | 1,878 | 1,635 | 1,565 | 1,515 | 1,484 | 1,451 | 1,418 | 1,379 |
| Official balances abroad and gold. | 459 | 1,006 | 1,908 | 1,866 | 1,807 | 1,879 | 1,786 | 1,830 | 2,154 |
| Totals. | 1,880 | 4,277 | 6,276 | 6,328 | 6,463 | 6,630 | 6,715 | 7,044 | 7,617 |

22.-Canadian Assets Abroad, by Location of Investment, as at Dec. 31, 1961p

Nore.-See headnote to Table 21.

| Location of Investment | Direct Investments | Portfolio Investment |  | Government Credits | Official Holdings of Exchange | Total <br> Investments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Stocks | Bonds |  |  |  |
|  | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 |
| United States.............. | 1,747 | 938 | 119 | - | 1,158 | 3,962 |
| Britain.......... | 288 | 45 | 16 | 1,030 | 9 | 1,388 |
| Other Commonwealth countries | 280 | 11 | 30 | 30 | - | 351 |
| Other foreign countries. | 304 | 195 | 111 | 319 | - | 929 |
| Official gold holdings... | - | - | - | - | 987 | 987 |
| Totals. | 2,619 | 1,189 | 276 | 1,379 | 2,154 | 7,617 |

# CHAPTER XXIII.-GURRENGY AND BANKING; MISCELLANEOUS COMMERCIAL FINANCE 

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing $p .1$ of this volume.

## PART I.-GURRENCY AND BANKING*

## Section 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 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

[^329]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.

While 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 liquid 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 and 1954. Some of these powers are outlined below.

The Bank may buy and sell securities issued or guaranteed by Canada or any province, short-term securities issued by Britain, treasury bills or other obligations of the United States, and certain classes of short-term commercial paper. The Bank is authorized by the Industrial Development Bank Act to purchase bonds and debentures issued by the Industrial Development Bank. The Bank may buy and sell gold, silver, nickel and bronze coin, and gold and silver bullion, and may also deal in foreign exchange. The Bank may accept deposits that do not bear interest from the Government of Canada, the government of any province, any chartered bank or any bank to which the Quebec Savings Bank Act applies. The Bank does not accept deposits from individuals and does not compete with the chartered banks in commercial banking fields.

The Bank acts as the fiscal agent for the Government of Canada in the payment of interest and principal and generally in respect of the management of the public debt of Canada.

The Bank has the sole right to issue paper money for circulation in Canada. Details regarding the note issue are given on p. 1046.

The Bank of Canada may vary the minimum cash reserve requirement of the chartered banks between 8 p.c. and 12 p.c. of their Canadian dollar deposit liabilities, provided that the chartered banks are given a minimum notice period of one month before each increase becomes effective and that any increase is not more than 1 p.c. during any one month. When this legislation became effective on July 1, 1954, the requirement was 8 p.c. and it has since remained at that level.

The Bank may make loans or advances for periods not exceeding six months to chartered banks, or to banks to which the Quebec Savings Bank Act applies, on the pledge or hypothecation of certain classes of securities. Loans or advances on the pledge or hypothecation of readily marketable securities issued or guaranteed by Canada or any province may be made to the Government of Canada or the government of any province for periods not exceeding six months. Other loans may be made to the Government of Canada or the government of any province in amounts not exceeding a fixed proportion of such government's revenue; such loans must be repaid before the end of the first quarter after the end of the fiscal year of the borrower.

The Bank of Canada is required to make public at all times the minimum rate at which it is prepared to make loans or advances; this rate is known as the Bank Rate. From Nov. 1, 1956 until June 24, 1962, the Bank Rate was established weekly at a fixed margin of $\frac{1}{4}$ of 1 p.c. above the latest weekly average tender rate for 91 -day treasury bills. On June 24, 1962, the Bank Rate was fixed at 6 p.c.; it was reduced to $5 \frac{1}{2}$ p.c. on Sept. 7, 1962, to 5 p.c. on Oct. 12, 1962, to 4 p.c. on Nov. 13, 1962 and to $3 \frac{1}{2}$ p.c. on May 6, 1963 ; it was increased again to 4 p.c. on Aug. 11, 1963. Since June 24, 1962, the Money Market Rate, the rate at which the Bank of Canada is prepared to enter into purchase and resale agreements with money market dealers, has been $\frac{1}{4}$ of 1 p.c. above the average rate on 91day treasury bills at the preceding weekly tender, or the same as Bank Rate, whichever is lower.

The Bank of Canada is not required to maintain a minimum or fixed ratio of gold or foreign exchange to its liabilities unless the Governor in Council prescribes otherwise.

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 Governor is the chief executive officer of the Bank and Chairman of the Board of Directors. The Governor has the power to veto any action or decision of the Board of Directors or of the Executive Committee but such veto is subject to confirmation or disallowance by the Governor General in Council. In the absence of the Governor, the Deputy Governor, who is a member of the Board, exercises all the powers and functions of the Governor.

The capital of the Bank is $\$ 5,000,000$ and is held entirely by the Minister of Finance. The Bank of Canada Act as amended in 1954 provides that each year 20 p.c. of the Bank's annual profits (after provision for depreciation in assets, pension funds and such matters)
shall be allocated to the Rest Fund until the Rest Fund reaches an amount five times the paid-up capital of the Bank and the remainder shall be paid to the Receiver General and placed to the credit of the Consolidated Revenue Fund. At the end of 1957, the Rest Fund of the Bank reached its maximum of $\$ 25,000,000$ so that, since that date, the whole of the Bank's profits have been transferred to the Receiver General.

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. The agencies are concerned chiefly with the functions of the Bank as fiscal agent for the Government of Canada and with the issue and redemption of currency. The Industrial Development Bank, which is described below, is a subsidiary of the Bank of Canada.

The Bank of Canada Act requires that statements of the assets and liabilities of the Bank on each Wednesday and on the last day of each month be published in the Canada Gazette. A summary of the statements as at Dec. 31, 1959-62, appears in Table 1.
1.-Assets and Liabilities of the Bank of Canada, as at Dec. 31, 1959-62

| Item | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: |
|  | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 |
| Assets |  |  |  |  |
| Foreign exchange. | 41.2 | 54.5 | 44.8 | 47.4 |
| Bankers' acceptances. | - | - | - | 3.3 |
| Investments- |  |  |  |  |
| Treasury bills of Canada.. | 305.9 | 404.4 | 312.2 | 455.2 |
| Other securities issued or guaranteed by Canada maturing within 2 years. | 514.5 | 353.4 | 513.9 | 446.6 |
| Other securities issued or guaranteed by Canada not maturing within 2 years. | 1,800.2 | 1,931.9 | 1,999.6 | 1,980.8 |
| Bonds and debentures issued by Industrial Development Bank | 58.6 | 64.4 | 88.0 | 127.1 |
| Other securities............................................. | 18.5 | 24.4 | 25.0 | 25.7 |
| Industrial Development Bank capital stock | 25.0 | 25.0 | 27.0 | 31.0 |
| Bank premises............................. | 10.9 | 11.5 | 10.6 | 10.7 |
| All other assets. | 193.3 | 175.0 | 221.9 | 103.3 |
| Totals, Assets | 2,968.1 | 3,044.4 | 3,242.9 | 3,231.1 |
| Liabilities |  |  |  |  |
| Capital paid up. | 5.0 | 5.0 | 5.0 | 5.0 |
| Rest Fund. | 25.0 | 25.0 | 25.0 | 25.0 |
| Notes in Circulation- |  |  |  |  |
| Held by chartered banks. | 315.7 1 | 329.8 $1,731.9$ | 346.6 $1,800.2$ | 416.8 $1,817.0$ |
| All other. | 1,704.8 | 1,731.9 | 1,800.2 | 1,817.0 |
| Deposits- <br> Government of Canada |  |  |  | 42.9 |
| Government of Canada. | 637.0 | 662.6 | 749.4 | 745.6 |
| Other.... | 34.8 | 33.3 | 33.4 | 38.1 |
| Foreign currency liabilities. | 50.0 | 68.6 | 59.0 | 61.1 |
| All other liabilities. | 150.2 | 152.5 | 182.8 | 79.6 |
| Totals, Liabilities . . . . . . . . . . . . . . . . . . . . . . . . | 2,968.1 | 3,044.4 | 3,242.9 | 3,231.1 |

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:-
"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."

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 has entered into an underwriting agreement; and acquire certificates issued by a trustee to finance 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, Quebec, Trois Rivières, Montreal, Ottawa, Toronto, Hamilton, Waterloo, London, Sudbury, Port Arthur, Winnipeg, Regina, Saskatoon, Calgary, Edmonton, Vancouver, Victoria, Kelowna and Windsor.
2.-Assets and Liabilities of the Industrial Development Bank, as at Sept. 30, 1959-62

| Item |  |  |
| ---: | ---: | ---: | ---: | ---: | ---: |

[^330]
## Section 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 and Other Notes in Circulation, as at Dec. 31, 1958-62

| Denomination | 1958 | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | s'000 | \$'000 | \$'000 | \$'000 |
| Bank of Canada Notes- | 75,873 | 78,402 | 81,733 | 86,114 | 91,426 |
| \$2. | 53,597 | 55,076 | 57,622 | 60,640 | 63,837 |
| \$5. | 143,010 | 144,702 | 149,545 | 156,501 | 162,643 |
| \$10.. | 533,078 | 521,309 | 519,559 | 533,041 | 548,442 |
| \$20. | 627, 814 | 647,276 | 676,549 | 719,713 | 766,974 |
| \$25.. | 46 | 46 | 46 | 46 | 46 |
| \$50.. | 143,606 | 145,461 | 147,596 | 152, 106 | 155,938 |
| \$100.. | 391,629 | 395,383 | 396,328 | 407,307 | 413,460 |
| \$500. | 49 | 46 | 41 | 38 | 37 |
| \$1,000... | 15,928 | 19,549 | 19,547 | 18,198 | 17,951 |
| Totals. | 1,984,630 | 2,007,250 | 2,048,567 | 2,133,704 | 2,220,755 |
| Chartered banks' notes ${ }^{1}$. | 8,655 | 8,519 | 8,423 | 8,363 | 8,314 |
| Dominion of Canada notes ${ }^{1}$. | 4,645 | 4,641 | 4,638 | 4,637 | 4,637 |
| Provincial notes ${ }^{1}$. | 28 | 28 | 28 | 28 | 28 |
| Defunct banks' notes ${ }^{1}$. | 88 | 88 | 88 | 88 | 88 |
| Totals, Bank of Canada Note Liabilities... | 1,998,046 | 2,020,525 | 2,061,743 | 2,146,820 | 2,233,822 |
| Held byChartered banks. | 338,176 | 315,703 | 329,841 | 346,630 | 416,845 |
| Others. | 1,659,870 | 1,704,822 | 1,731,902 | 1,800, 190 | 1,816,977 |

[^331]
## 4.-Note Circulation in the Hands of the Public, as at Dec. 31, 1953-62

| As at Dec. 31- | Bank of Canada Notes ${ }^{1}$ | Per Capita | As at Dec. 31- | Bank of Canada Notes ${ }^{1}$ | Per Capita |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ |  | \$ | \$ |
| 1953.. | 1,335, 332, 954 | 89.95 | 1958. | 1,659,870,299 | 97.18 |
| 1954. | 1,361,874,433 | 89.09 | 1959. | 1,704,822,198 | 97.51 |
| 1955. | 1,449,045, 166 | 92.31 | 1960. | 1,731,902,386 | 96.92 |
| 1956. | 1,497,765,781 | 93.14 | 1961. | 1,800,190,122 | 98.70 |
| 1957.. | 1,555, 115, 143 | 93.63 | 1962 | 1,816,977, 132 | 98.33 |

${ }^{1}$ 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.

## 5.-Canadian Coin in Circulation, as at Dec. 31, 1953-62

Notr.-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 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | \$ | \$ | \$ | \$ |
| 1953............... | 89, 550, 236 | 7,813,081 | 570,847 | 3,109, 691 | 12,130,181 | 113, 174,036 | 7.62 |
| 1954............... | 91,350,637 | 7,810,723 | 560,577 | 3,458,758 | 12,392,389 | 115,573,084 | 7.56 |
| 1955. | 95, 574,457 | 8,076,800 | 555,912 | 3,457,712 | 12,956,807 | 120,621,688 | 7.68 |
| 1955. | 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 |
| 1980. | 136,710,958 | 11,599, 263 | 549, 090 | 3,452,876 | 16, 895,953 | 169, 208, 140 | 9.47 |
| 1981. | 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 |

${ }^{1}$ Tombac, a copper-zinc alloy, was used to conserve nickel for war purposes; no coins of this metal have been issued since 1944.

The Royal Canadian Mint.*-The Mint at Ottawa was established as a branch of the Royal Mint under the (Imperial) Coinage Act 1870 and opened on Jan. 2, 1908. In 1931 (RSC 1952, c. 240) it was constituted a branch of the Canadian Department of Finance and has since operated as the Royal Canadian Mint. In its earlier years the operations of the Mint in Canada were confined to the production of gold, silver and bronze coins for domestic circulation and of British sovereigns and small coins struck under contract for Newfoundland and Jamaica. Before 1914 only small quantities of gold bullion

[^332]were refined but during World War I the Mint came to the assistance of the British Government by establishing a refinery in which nearly $20,000,000$ oz.t. of South African gold were treated on Bank of England account. The subsequent development of the gold mining industry in Canada resulted in gold refining becoming one of the principal activities of the Mint. Fine gold produced from the rough bullion shipments received from the mines is purchased by the Mint and later delivered to the Bank of Canada for account of the Minister of Finance in bars of approximately $400 \mathrm{oz.t}$. each or, for those mines authorized to sell gold in the open market, the bullion is shipped according to instructions from the mines. The fine silver extracted from the rough gold is generally used for coinage purposes.

## 6.-Receipts of Gold Bullion at the Royal Canadian Mint and Bullion and Coinage Issued, 1953-62

Note.-Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1946 edition.

| Year | Gold Received | Gold <br> Bullion Issued | Silver Coin Issued | Nickel Coin Issued | Steel Coin Issued | Bronze Coin Issued |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | oz. t. | oz. t. | \$ | \$ | \$ | \$ |
| 1953. | 3,684,074 | 3,626,497 | 6.138,686 | 234 | 831,915 | 655,130 |
| 1954. | 3,829,431 | 3,998, 836 | 1,864,968 | 27 | 350, 229 | 263,897 |
| 1955. | 3,947,637 | 3,952,764 | 4,269,157 | 267,801 | - | 566,863 |
| 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. | 3,908,649 | 3,836,680 | 8,273,563 | 576,680 | - | 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 | 3,520,406 | 16,114,240 | 2,324,212 | - | 2,284,925 |

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, 1953-62
(Millions of dollars)

| As at <br> Dec. 31- | Currency Outside Banks |  |  | Chartered Bank Deposits |  |  |  | Total Currency and Chartered Bank Deposits ${ }^{1}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Notes | Coin | Total | Personal Savings Deposits ${ }^{2}$ | Government of Deposits | Other Deposits ${ }^{1,2}$ | Total ${ }^{1}$ | Total Including Government Deposits | Held by <br> General Public |  |
|  |  |  |  |  |  |  |  |  | Including <br> Personal Savings Deposits | Excluding Personal Savings Deposits ${ }^{2}$ |
| 1953. | 1,335 | 94 | 1,430 | 4,756 | 473 | 3,130 | 8,359 | 9,789 | 9,316 | 4,560 |
| 1954. | 1,362 | 96 | 1,458 | 5,218 | 176 | 3,462 | 8,856 | 10,314 | 10,137 | 4,920 |
| 1955. | 1,449 | 101 | 1,550 | 5,633 | 517 | 3,697 | 9,847 | 11,397 | 10,880 | 5,248 |
| 1956. | 1,498 | 108 | 1,605 | 6,007 | 246 | 3,580 | 9,833 | 11,438 | 11, 192 |  |
| 1957. | 1,555 | 112 | 1,667 | 6,108 ${ }^{2}$ | 423 | $3,725^{2}$ | 10,256 | 11,923 | 11,500 | 5,392 ${ }^{2}$ |
| 1958. | 1,660 | 121 | 1,781 | 6,844 | 319 | 4,303 | 11,466 | 13,247 | 12,927 | 6,084 |
| 1959. | 1,705 | 128 | 1,832 | 6,900 | 404 | 4,057 | 11,360 | 13,193 | 12,789 | 5,890 |
| 1960. | 1,732 | 144 | 1,876 | 7,215 | 510 | 4,313 | 12,037 | 13,914 |  |  |
| 1961. | 1,800 | 158 | 1,959 | 7,618 | 588 | 4,998 | 13, 205 | 15,163 1568 | 14,575 15,119 | 6,957 7,187 |
| 1962. | 1,817 | 177 | 1,994 | 7,932 | 564 | 5,193 | 13,689 | 15,683 | 15,119 | 7,187 |

[^333]
## Section 3.-The Commercial Banking System*

The Canadian commercial banking system consists of eight privately owned banks, chartered by Parliament and operating under the provisions of the Bank Act. Of these eight, five are nation-wide institutions; two operate mainly in the Province of Quebec and in other French-speaking areas and one, a subsidiary of a Netherlands bank, has a branch in each of the three largest cities. At the end of 1962, these banks together operated 5,496 banking offices of which 5,332 were in Canada and 164 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 had 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 $\dagger$ 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 years 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.

Certain characteristic features of the Canadian financial system have thus emergednotably the traditional emphasis of the chartered banks on "commercial" banking. The early banks were established by merchants for merchants. Their note issues provided a badly needed medium of internal exchange and they advanced working capital to finance the processes of trade. The aim was to make lending as far as possible short-term and self-liquidating. The bank charters from the first contained prohibitions against lending on the security of real property, except as secondary or subsequent security. Now, however, exceptions to the rule against lending upon security of real property, incorporated in the Bank Act in 1944 and 1954, allow the banks to participate in government-guaranteed loans to farmers and fishermen and for housing constructed under the National Housing Act, to lend to oil companies on the security of oil "in, under or upon the ground" and production equipment, and to extend their consumer-finance lending by taking chattel

[^334]mortgages. It is also permissible for banks to make advances on the security of natural products and goods, wares and merchandise while they remain in the borrower's possession. These 'pledge' arrangements have facilitated loans to small businesses and farmers and have aided in commercial and manufacturing development, while giving the banks a reasonable degree of protection for their loans.

Today 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 specifies 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 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. Offices have been established in suburban areas, in new towns, oil fields and mining camps, as well as in the long-established urban centres where industrial and commercial growth have so enlarged the demand for banking services. In all, the number of banking offices in Canada, which was about 3,300 at the end of 1939 and 3,100 at the end of 1945 , grew by over 2,200 in the next seventeen 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. Loans had declined sharply during the depression and shown only a slightly rising trend during the prewar years of incomplete recovery and, of
course, in the wartime economy bank lending was subject to a variety of restrictive influences. The result was a marked change in the composition of bank assets; by the end of 1945 security holdings accounted for about 55 p.c. 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 years of postwar reconstruction, 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 was 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.c. 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 restraint 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 1961-62. In this period the banks have not regained the liquidity that characterized earlier postwar recessions, and there has been a growing 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.

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. These loans are often for sizable amounts (an average about $\$ 1,500$ ) and the terms have been gradually extended to a maximum sum of $\$ 7,500$ 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 $\$ 400,000,000$ for the lending period to end in mid-1965. By the end of 1962 the total amount of loans made under this Act was more than $\$ 1,240,000,000$ (see also pp. 419-420).

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, 1962 they held

[^335]some $\$ 920,000,000$ in NHA mortgages, representing about 5 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 1962, Home Improvement Loans amounting to $\$ 275,000,000$ had been approved and the banks had about $\$ 70,000,000$ 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 interests, 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. While 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 $\$ 1,330,000,000$ outstanding at June 30, 1963.

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 have found it necessary to withdraw. Elsewhere abroad, the banks have expanded their representation 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.

## Subsection 1.-Statistics of Chartered Banks

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 is given in Table 8.

## 8.-Branches of Chartered Banks, by Province, as at Dec. 31 for Certain Years 1868-1962

Note.-Figures for 1920 and subsequent years include sub-agencies in Canada receiving deposits for the banks employing them; there were 768 such sub-agencies at Dec. 31, 1962.

| Province or Territory | 1868 | 1902 | 1905 | 1920 | 1926 | 1930 | 1940 | 1943 | 1946 | 1950 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| Newfoundland. ${ }^{\text {P }}$. ${ }^{\text {a }}$.... | 二 | 9 | 10 | - | - 28 | 28 | - | 23 | - 2 | 39 | 71 | 76 | 81 |
| Prince Edward Island.... | 5 | 9 89 | 10 | 41 169 | 28 134 | 28 138 | $\begin{array}{r}25 \\ 134 \\ \hline\end{array}$ | 23 | 123 | 23 144 | $\begin{array}{r}27 \\ 173 \\ \hline\end{array}$ | 27 176 | 27 178 |
| Nowa Brotia | 4 | $\stackrel{89}{35}$ | 101 | 121 | 101 | 102 | 184 | 93 | 96 | 100 | 113 | 117 | 118 |
| Quebec. | 12 | 137 | 196 | 1,150 | 1,072 | 1,183 | 1,083 | 1,041 | 1,067 | 1,164 | 1,427 | 1,454 | 1,489 |
| Ontario. | 100 | 349 | 549 | 1,586 | 1,326 | 1,409 | 1,208 | 1,092 | 1,117 | 1,257 | 1,785 | 1,869 | 1,916 |
| Manitoba. | - | 52 | 95 | 349 | 224 | 239 | 162 | 148 | 151 | 165 | 234 | 246 | 248 |
| Saskatchewan |  | 30 | 87 | 591 | 427 | 447 | 233 | 213 | 226 | 238 | 296 | 301 | 299 |
| Alberta. |  | 30 | 87 | 424 | 269 | 304 | 172 | 163 | 190 | 246 | 394 | 409 | 417 |
| British Columbia | 2 | 46 | 55 | 242 3 | 186 3 | 229 4 | 192 5 | 180 5 | 216 6 | 294 9 | 514 17 | 534 15 | 545 14 |
| Canada | 123 | 747 | 1,145 | 4,676 | 3,770 | 4,083 | 3,311 | 3,084 | 3,219 | 3,679 | 5,051 | 5,224 | 5,332 |

## 9.-Branches of Individual Canadian Chartered Banks, by Province, as at Dec. 31, 1962

Note.-This table includes 768 sub-agencies in Canada for receiving deposits.

| Bank | Nfid. | P.E.I. | N.S. | N.B. | Que. | Ont. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. |
| Bank of Montreal. | 22 | 2 | 25 | 17 | 171 | 331 |
| The Bank of Nova Scotia. | 31 | 8 | 51 | 40 | 54 | 259 |
| Banque Canadienne Nationale. | - | - | - | - | 578 | 19 |
| Banque Provinciale du Canada.. | - | 3 | - | 18 | 315 | 23 |
| Canadian Imperial Bank of Commerce. | 9 | 8 | 25 | 15 | 156 | 566 |
| The Mercantile Bank of Canada....... | 1 | 5 | - |  | 1 | 1 |
| The Royal Bank of Canada... | 19 | 5 | 74 | 23 | 152 | 369 |
| The Toronto-Dominion Bank. | - | 1 | 3 | 5 | 62 | 348 |
| Totals. | 81 | 27 | 178 | 118 | 1,489 | 1,916 |
|  | Man. | Sask. | Alta. | B.C. |  | Total |
|  | No. | No. | No. | No. | No. | No. |
| Bank of Montreal.. | 50 | 57 | 97 | 124 | 4 |  |
| The Bank of Nova Scotia..... | 19 | 31 | 50 | 69 | - | 612 |
| Banque Canadienne Nationale. .................. |  | - | - | - | - | 601 |
| Banque Provinciale du Canada................... | - | 87 | - | - | - | 359 |
| The Mercantile Bank of of Commerce.......... | 65 | 87 | 130 | 181 | 7 | 1,249 |
| The Royal Bank of Canada..... | -72 | -86 | - 88 | 112 |  | 1,003 |
| The Toronto-Dominion Bank | 38 | 38 | 52 | +18 | 3 | 1,603 605 |
| Totals. | 248 | 299 | 417 | 545 | 14 | 5,332 |

## 10.-Branches of Individual Canadian Chartered Banks Outside Canada, as at Dec. 31, 1962

Note.-This table does not include sub-agencies operating outside Canada, of which there were 24 in 1962.

| Bank and Location | Number | Bank and Location | Number | Bank and Location | Number |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Bank of Montreal- | 2234 | Canadian Imperial Bank of CommerceBritain British West Indies..... United States. $\qquad$ | 2115 | The Royal Bank-concl. Haiti Dominican Republic. France. | 181 |
|  |  |  |  |  |  |
| United States. |  |  |  |  |  |
| France... |  |  |  |  |  |
| Germany |  |  |  | The Toronto-Dominion |  |
| The Bank of |  | The Royal Bank of |  | Bank- |  |
| Nova Scotia- <br> Britain | 2 | Canada- <br> Britain |  | United States............. | 2 |
| British West Indies.. | 27 | British West Indies | 27 | Banque Canadienne |  |
| Dominican Republic. | 2 | United States..... | 1 | Nationale- |  |
| United States.. | 1 | Puerto Rico............ | 5 | France. | 1 |
| Puerto Rico. | 2 | Central and South America. | 25 | Total. | 140 |

Financial 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 the following tables begins with that year. Month-end data are available from Dec. 31, 1954 to date in the Bank of Canada Statistical Summary.
11.-Assets and Liabilities of the Chartered Banks, as at Dec. 31, 1954-62
(Millions of dollars)

| As at <br> Dec. 31- | Assets |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Bank of Canada Deposits and Notes | Canadian <br> Day-to- <br> Day <br> Loans | $\underset{\substack{\text { Treasury } \\ \text { Bills }}}{ }$ | Government of Canada Direct and Guaranteed Bonds | Other Canadian Securities, Insured Residential Mortgages and Loans in Canada | Canadian Dollar Items in Transit (net) | Foreign Cash Items Securities and Loans | Total Assets ${ }^{1}$ |
| 1954...... 1955..... 1956..... $1957 \ldots \ldots$ | 791 840 882 866 | 68 81 74 210 | 360 427 740 805 | 2,953 2,632 1,675 1,835 | 4,963 6,207 6,820 6,953 | 827 1,002 1,330 1,151 | 1,142 1,127 1,486 1,970 | 11,433 12,702 13,428 14,244 |
| $1958 \ldots \ldots .$. $1959 \ldots \ldots$. $1960 \ldots \ldots$. $1961 \ldots \ldots$. $1962 \ldots \ldots$ | 1,001 953 992 1,096 1,162 | 123 101 172 215 293 | 950 974 967 1,157 1,127 | 2,562 1,827 2,088 2,639 2,241 | 7,365 8,172 8,510 8,886 9,737 | 1,224 919 884 981 1,010 | 2,165 2,393 2,725 3,510 3,876 | 15,840 15,835 16,917 19,153 20,273 |
|  | Liabmities |  |  |  |  |  |  |  |
|  | Canadian Dollar Deposits |  |  |  |  | Foreign Currency Deposits | Shareholders' Equity | Total Liabilities ${ }^{1}$ |
|  | Government of Canada | Notice |  | $\begin{aligned} & \text { All } \\ & \text { Other } \end{aligned}$ | Total |  |  |  |
|  |  | Personal Savings | Other Notice |  |  |  |  |  |
| 1954.. | 176 |  |  |  | 9,683 | 1,030 | 521 | 11,433 |
| 1955........ | 517 | 5,633 | 464 | 4,234 | 10,848 | 1,056 | 567 | 12,702 |
| 1956........ | 246 | 6,007 | 444 | 4,465 | 11,162 | 1,369 | 653 | 13,428 |
| 1957..... | 423 | 6,108 | 548 | 4,328 | 11,407 | 1,827 | 732 | 14,244 |
| 1958....... | 319 | 6,844 | 618 | 4,909 | 12,690 | 2,077 | 813 | 15,840 |
| 1959........ | 404 | 6,900 | 558 | 4,418 | 12,279 | 2,372 | 926 | 15, 835 |
| 1960........ | 510 | 7,215 | 576 | 4,621 | 12,921 | 2,654 | 1,004 | 16,917 19,153 |
| 1961....... | 588 | 7,618 | 929 | 5,051 | 14,186 14699 | 3,488 3,958 | 1,071 1,097 | 19,153 |
| 1962........ | 564 | 7,932 | 997 | 5,205 | 14,699 | 3,958 | 1,097 | 20,273 |

[^336]
## 12.-Detailed Statement of Chartered Bank Assets and Liabilities, as at Dec. 31, 1960-62

| Assets and Liabilities | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: |
|  | \$'000 | \$ 000 | \$'000 |
| Assets- |  |  |  |
| Gold and coin in Canada. | 39,184 | 30,980 | 38,311 |
| Gold and coin outside Canada | 1,032 | 1,085 | 1,117 |
| Notes of and deposits with Bank of Canada | 992,426 | 1,096,060 | 1,162,415 |
| Government and bank notes other than Canadian | 43,931 | 46,650 | 46,537 |
| Deposits with other banks in Canadian currency | 4,842 | 9,683 | 8,879 |
| Deposits with other banks in currencies other than Canadian | 531,516 | 1,007,270 | 1,204,006 |
| Cheques and other items in transit (net) | 832,874 | 844,782 | 867,398 |
| Government of Canada treasury bills................................ | 967,209 | 1,156,888 | 1,126,584 |
| Other Government of Canada direct and guaranteed securities maturing within two years, not exceeding market value. | 615,288 | 1,088,500 | 753,552 |
| Government of Canada direct and guaranteed securities maturing after two years, not exceeding market value. | 1,472,389 | 1,550,743 | 1,487,313 |
| Canadian provincial government direct and guaranteed securities, not exceeding market value. | 323,819 | 351,980 | 407,355 |
| Canadian municipal and school corporation securities, not exceeding market value. | 207,962 | 231,264 | 249,943 |
| Other Canadian securities, not exceeding market value. | 473,009 | 470,319 | 457,196 |
| Securities other than Canadian, not exceeding market value. | 556,838 | 672,745 | 705,238 |
| Mortgages and hypothecs insured under the National Housing Act 1954, less provision for estimated loss. | 970,592 | 952,671 | 921,112 |
| Call and short loans in Canada to brokers and investment dealers, secured | 310,208 | 344,897 | 481,998 |
| Call and short loans outside Canada to brokers and investment dealers, secured. | 814,479 | 843,833 | 683,678 |
| Loans to Canadian provincial governments. | 127,726 | 45,450 | 28,937 |
| Loans to Canadian municipalities and school corporations, less provision for estimated loss. | 216, 922 | 247,172 | 243,739 |
| Other current loans in Canada, less provision for estimated loss. | 6,050,474 | 6,455,888 | 7,237,913 |
| Other current loans outside Canada, less provision for estimated loss | 813,754 | 1,068,744 | 1,365,984 |
| Non-current loans, less provision for estimated loss. | 1,425 | 1,423 | 1,424 |
| Bank premises at cost, less amounts written off. | 233,760 | 254,255 | 276,763 |
| Shares of and loans to corporations controlled by the bank | 51,443 | 52,979 | 53,675 |
| Customers' liability under acceptances, guarantees and letters of credit as per contra. | 257, 220 | 323,086 | 456,706 |
| Other assets. | 6,774 | 4,137 | 4,935 |
| Totals, Assets. | 16,917,096 | 19,153,484 | 20,272,708 |
| Labllities- |  |  |  |
| Deposits by Government of Canada in Canadian currency. ............. | 509,892 | 587,955 | 563,616 |
| Deposits by Canadian provincial governments in Canadian currency | 118,836 | 134,313 | 155,293 |
| Deposits by other banks in Canadian currency. | 200,540 | 216,095 | 171,172 |
| Deposits by other banks in currencies other than Canadian............. | 646, 881 | 702,518 | 693,759 |
| Personal savings deposits payable after notice, in Canada, in Canadian currency | 7,214,692 | 7,618,100 | 7,932,383 |
| Other deposits payable after notice, in Canadian currency............... | 575, 861 | 928,971 | 997,463 |
| Other deposits payable on demand, in Canadian currency. | 4,301,354 | 4,700,545 | 4,878,869 |
| Other deposits in currencies other than Canadian. | 2,007,443 | 2,785,945 | 3,264,074 |
| Acceptances, guarantees and letters of credit. | 257,220 | 323,086 | 456,706 |
| Other liabilities. | 80,740 | 84,918 | 62,450 |
| Capital paid up. | 265,564 | 275,366 | 276,957 |
| Rest account. | 730,154 | 786,791 | 812,070 |
| Undivided profits at latest fiscal year-end | 7,919 | 8,881 | 7,896 |
| Totals, Llabilities. | 16,917,096 | 19,153,484 | 20,272,708 |

## 13.-Canadian Cash Reserves, 1953-62

Note.-For periods prior to July 1954 all figures are daily averages; from July 1954, in accordance with the Bank Act 1954, Bank of Canada deposits are averages of the juridical days in the month shown while Bank of Canada notes and Canadian dollar deposits are averages of the four consecutive Wednesdays ending with the second last Wednesday in the previous month.
(Millions of dollars)

| Year | Cash Reserves |  |  | Canadian Dollar Deposit Liabilities ${ }^{1}$ | Average Cash Reserve Ratio ${ }^{2}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Bank of <br> Canada <br> Deposits | Bank of Canada Notes | Total |  |  |
| 1953. | 627 | 256 | 883 | 8,624 | 10.2 |
| 1954-January to June | 634 | 260 | 894 | 8,820 | 10.1 |
| 1954-July to December | 525 | 286 | 811 | 9,097 | 8.9 |
| 1955. | 541 | 293 | 834 | 9,915 | 8.4 |
| 1956. | 548 | 325 | 873 | 10,527 | 8.3 |
| 1957. | 535 | 335 | 870 | 10.601 | 8.2 |
| 1958. | 607 | 336 | 943 | 11,452 | 8.2 |
| 1959. | 648 | 351 | 999 | 12,187 | 8.2 |
| 1960. | 625 | 360 | 985 | 12,052 | 8.2 |
| 1961. | 673 | 367 | 1,040 | 12,804 | 8.1 |
| 1962.................... | 748 | 376 | 1,124 | 13,812 | 8.1 |

${ }^{1}$ From July 1954 the figures are not adjusted for items in transit and are not strictly comparable with the figures for earlier periods. $\quad 2$ Prior to July 1, 1954, the statutory minimum requirement was 5 p.c. for each day; since that date it has been a monthly average of 8 p.c.

## 14.-Classification of Chartered Bank Deposit Liabilities Payable to the Public in Canada in Canadian Currency, as at Sept. 30, 1961 and 1962

| Deposit Accounts of the Public of - | 1961 |  |  | 1962 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Personal Savings Deposit Accounts | Other <br> Deposit Accounts of the Public | Total Deposit Accounts of the Public | Personal Savings Deposit Accounts | Other <br> Deposit Accounts of the Public | Total Deposit Accounts of the Public |
|  | No. | No. | No. | No. | No. | No. |
| Less than $\$ 100$ | 5,902, 275 | 1,175,674 | 7,077,949 | 6,214,773 | 1,353,989 | 7,568,762 |
| $\$ 100$ or over but less than $\$ 1,000$. | 3,218,097 | 835,455 | 4,053,552 | 3,334.923 | 948, 452 | 4,283,375 |
| \$1,000 or over but less than $\$ 10,000$. | 1,655, 959 | 345,564 | 2,001,523 | 1,737,532 | 378.535 | 2,116,067 |
| \$10,000 or over but less than $\$ 100,000$ | 82,981 | 57,827 | 140, 808 | 90,676 | 62,362 | 153,038 |
| \$100,000 or over.................... | 1,125 | 6,413 | 7,538 | 899 | 6,252 | 7,151 |
| Totals, Deposits. | 10,860,437 | 2,420,933 | 13,281,370 | 11,378,803 | 2,749,590 | 14,128,393 |

## 15.-Classification of Chartered Bank Loans in Canadian Currency, as at Dec. 31, 1960-62

| Class of Loan | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: |
|  | \$ 0000,000 | \$'000,000 | \$'000,000 |
| General Loans- |  |  |  |
| Personal.............................................. | $1,199.2$ 286.4 | 1, ${ }_{3351.0}$ | 1,624.4 |
| To individuals, fully secured by marketable bonds and stocks. | 286.4 56.0 | ${ }_{655.7}$ | 378.8 69.8 |
| To individuals, not elsewhere classified | 856.8 | 1,029.7 | 1,182.6 |
| Farmers- |  |  |  |
| Farm Improvement Loans Act. | 178.1 | 194.3 290.7 | ${ }_{343.4}^{212.6}$ |
| Other farm loans. |  |  | 1,470.6 |
| Industry....................... | 1,241.0 |  | 1, 69.8 |
| Chemical and rubber products... | 49.8 60.9 | 50.0 67.8 | \%9.8 79 |
| Foods, beverages and tobacco.. | 229.3 | 243.0 | 276.5 |
| Forest products........... | 179.7 | 185.7 | 195.5 |
| Furniture... | 24.4 | 28.0 | \$1.0 |
| Iron and steel products. | 197.7 | 206.0 | 220.9 105.6 |
| Mining and mine products.. | 85.9 116.4 | 101.8 | 111.8 |
| Petroleum and products..... | 116.4 | 1720.4 | 195.8 |
| Transportation equipment... | 62.8 | 111.3 | 88.3 |
| Other products. | 74.2 | 103.3 | 111.6 |

## 15.-Classification of Chartered Bank Loans in Canadian Currency, as at Dec. 31, 1960-62-concluded

| Class of Loan | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: |
|  | \$'000,000 | \$'000,000 | \$'000,000 |
| General Loans-concluded |  |  |  |
| Merchandisers. | 858.4 | 888.6 | 987.4 364.4 |
| Construction contractors. | 309.0 216.7 | 315.6 165.4 | 364.4 224.9 |
| Public utilities, transportation and communications. | 216.7 594.5 | 165.4 | 224.9 991.1 |
|  | 193.8 | 208.3 | 226.5 |
| Totals, General Loans. | 5,032.1 | 5,647.2 | 6,445.3 |
| Other Loans- |  |  |  |
| Provincial governments. | 127.7 | 45.5 | 28.9 |
| Municipal governments and school districts | 216.9 | 247.2 | 243.7 |
| Investment dealers. | 73.0 | 65.1 | 124.1 |
| Loans to finance the purchase of Canada Savings Bonds. | 185.9 | 189.2 | 199.6 |
| Grain dealers and exporters.............. | 462.9 | 348.0 | 310.8 |
| Instalment and other finance companies. | 371.0 | 272.9 | 283.7 |
| Totals, Other Loans. | . 1,502.3 | 1,232.3 | 1,256.0 |
| Grand Totals, Loans in Canadian Currency . . . . . . . . . | 6,534.5 | 6,879.5 | 7,701.3 |

## 16.-Chartered Bank Earnings, Expenses and Additions to Shareholders' Equity, Fiscal Years Ended in 1960-62

Nore.-The financial years of six banks end on Oct. 31, two on Nov. 30 and one on Sept. 30. (Millions of dollars)

| Item | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: |
| Current Operating Earnings- |  |  |  |
| Interest and discount on loans. . | 525.5 | 540.5 | 611.5 |
| Interest, dividends and trading profits on securities ${ }^{1}$. | 182.3 | 196.6 | 211.3 |
| Exchange, commission, service charges and other current operating earnings. | 134.6 | 143.1 | 154.0 |
| Totals, Current Operating Earnings. | 842.4 | 880.2 | 976.8 |
| Current Operating Expenses-2 |  |  |  |
| Interest on deposits... | 270.9 | 290.8 | 355.3 |
| Remuneration to employees | 229.7 | 243.8 | 260.9 |
| Contributions to pension funds | 13.2 | 13.3 | 13.6 |
| Provision for depreciation of bank premises | 18.4 | 19.6 | 22.4 |
| Other current operating expenses ${ }^{3}$. | 113.7 | 122.8 | 135.4 |
| Totals, Current Operating Expenses ${ }^{2}$. | 645.9 | 690.3 | 787.6 |
| Net current operating earnings ${ }^{2}$. | 196.5 | 189.9 | 189.2 |
| Capital profits and non-recurring items ${ }^{4}$. | 3.7 | 1.5 | 2.0 |
| Less provision for losses and addition to inner reserves, net ${ }^{5}$ | 25.2 | -10.6 | 24.7 |
| Less provision for income taxes ${ }^{6}$ | 90.7 | 101.7 | 84.7 |
| Leaving for dividends and shareholders' equity | 84.3 | 100.3 | 81.8 |
| Dividends to shareholders. | 54.0 | 57.8 | 60.3 |
| Additions to shareholders' equity. | 30.3 | 42.5 | 21.5 |
| Undivided Profits- Aditions to Shareholders' Equity |  |  |  |
| Undivided ProfitsFrom operating earnings, net after transfers to rest account. | -2.2 | 1.0 | -1.0 |
| Rest Account- |  |  |  |
| From operating earnings and undivided profits | 16.8 | 14.5 | 19.6 |
| From retransfers from inner reserves.. | 15.7 | 27.1 | 3.0 |
| From premium on new shares. | 36.2 | 14.6 | 3.5 |
| Capital Paid Up- |  |  |  |
| Net Additions to Shareholders' Equity | 78.0 | 66.6 | 27.2 |

[^337]Cheque Payments.-A monthly record of the value of cheques charged to customer accounts at all chartered bank offices in 35 major clearing-house centres of Canada is available from 1924. Except for a minor setback in 1938, the value of cheques cashed shows a continuously upward trend from 1932, the low point of the depression years. The total of $\$ 325,564,498$ in 1962 was a record, 953 p.c. greater than in 1938. The advance was well distributed throughout Canada's five economic areas. British Columbia showed the largest gain with an increase of 1,092 p.c. Ontario was second with an advance of 985 p.c., followed by the Prairie Provinces with 956 p.c., the Atlantic Provinces with 918 p.c. and Quebec with 882 p.c.

Value of cheques cashed in 34 of the original 35 centres was higher in 1962 than in 1961. Payments in Toronto showed a gain of 11.1 p.c. and Montreal rose by 12.2 p.c. In the western regions, Winnipeg showed little change and Vancouver advanced by 10.3 p.c.
17.-Cheques Cashed at 35 Clearing-House Centres, 1958-62

| Clearing-House Centre | 1958 | 1959 | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Atlantic Provinces | 4,438,573 | 5,119,612 | 5,499,101 | 5,876,687 | 6,509,096 |
| Halifax | 1,952,996 | 2,240,973 | 2,470,454 | 2,765,782 | 3,101,706 |
| Moncton | 644,873 | 687,497 | 703,300 | 725,886 | 771,911 |
| Saint John | 974,038 | 1,240, 454 | 1,292,907 | 1,282,369 | 1,352,215 |
| St. John's | 866,666 | 950,688 | 1,032,440 | 1,102,650 | 1,283,264 |
| Quebec. | 63,318,152 | 70,466,038 | 80,114,230 | 87,213,839 | 97,851,664 |
| Montreal | 57,779,114 | 64,370,687 | 73,203,832 | 78,593,811 | 88,211,663 |
| Quebec. | 4,994,969 | 5,515,388 | 6,285, 281 | 7,912,527 | 8,818,728 |
| Sherbrook | 544,069 | 579,963 | 625,117 | 707,501 | 821,273 |
| Ontario. | 102,798,608 | 117,852,356 | 125,319,946 | 134,719,363 | 149,812,492 |
| Brantford | 611,026 | 692,885 | 688,254 | 693,833 | 791,851 |
| Chatham | 639,883 | 618,778 | 655,467 | 654,195 | 665, 473 |
| Cornwall | 400,905 | 430,320 | 406,526 | 455,088 | 476, 467 |
| Fort Willia | 458,694 | 483,014 | 454,425 | 483,450 | 500,329 |
| Hamilton | 4,681,253 | 5,784,746 | 5,730,223 | 5,988,206 | 6,709,167 |
| Kingston. | 499,922 | 531,388 | 520,401 | 561,700 | , 627,367 |
| Kitchener | 1,050,153 | 1,212,701 | 1,268,458 | 1,321,571 | 1,580,719 |
| London | 2,756,333 | 3,248,221 | 3,438,475 | 3,728,758 | 4, 184,759 |
| Ottawa | 4,823,537 | 5,441, $744{ }^{1}$ | 5,428,6181 | 5,923,4691 | 6,765, 125 |
| Peterborough | 534,561 | 597, 133 | 588,320 | 566, 260 | 615,616 |
| St. Cath | 800,629 | 847,322 | 861,905 | 959,735 | 1, 089.736 |
| Sarnia. | 589,935 | 610,219 | 631,965 | 701, 576 | 761,867 |
| Sudbury | 613,037 | 646,385 | 650,352 | 711,292 | 792,746 |
| Toronto. | 82,217,905 | 94,286, 069 | 101,652,499 | 109, 570, 868 | 121,733,430 |
| Windsor | 2,120,835 | 2,422,431 | 2,344,058 | 2,399,362 | 2,517, 840 |
| Prairie Provinces. | 34,490,157 | 37,804,428 | 40,667,168 | 45,540,898 | 48,301,500 |
| Brandon. | 229,039 | 247,763 | 255,007 | 269,028 | 271,465 |
| Calgary | 7,646,109 | 8,528, 838 | 8,773, 941 | 10,326,214 | 11,415,990 |
| Edmonton | 5,149, 339 | 5,823,946 | 5,975, 975 | 6, 672,384 | 7,550,912 |
| Lethbridge | 441,664 | 498,787 | 488,953 | 501,226 | ${ }^{585} \mathbf{0}$,068 |
| Medicine Hat | ${ }_{392} 201480$ | 226,498 394,040 | 407, 835 | 2479,010 | 422,339 |
| Moose Jaw. | 392,210 204 | 229,736 | 235,304 | 247, 306 | 253,269 |
| Regina. | 3,622,192 | 3,859,211 | 4,377,349 | 4,869, 831 | 5,326,695 |
| Saskatoon | 971,924 | 1,085,023 | 1,101,592 |  |  |
| Winnipeg | 15,631,849 | 16,910,586 | 18,825,822 | 20,861,681 | 20,919,929 |
| British Columbia. | 16,244,464 | 17,626,917 | 18,018,609 | 20,433,555 | 23,089,746 |
| New Westminster | 824,007 | 925,926 | 863,876 |  |  |
| Vancouve | 13,143,566 | $14,230,065$ 2,470 | $14,653,833$ 2,500 | $17,766,910$ $2,666,645$ | $19,602,381$ $3,487,365$ |
| Victoria. | 2,276,891 | 2,470,926 | 2,500,900 |  |  |
| Totals | 221,289,954 | 248,869,351 | 269,619,054 | 293,784,342 | 325,564,498 |

[^338]${ }^{2}$ Included with Vancouver.

## Subsection 2.-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, 1960-63 follow. Figures back to 1868 are available in previous editions of the Year Book.

| Item | 1960 | 1961 | 1962 | 1963 |
| :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | \$ |
| Deposits and interest. | 8,010,334 | 6,898,062 | 6,466,358 | 5,714,720 |
| Deposits. | 7,235,391 | 6,199,420 | 5,790,429 | 5,0ヶ2,613 |
| Interest on deposits. | 774,943 | 698,642 | 675,929 | 642,107 |
| Withdrawals. | 12,793,511 | 7,757,737 | 7,614,025 | 7,199,360 |
| Balance on deposit... | 29,372,461 | 28,512,786 | 27,365,119 | 25,880,479 |

Provincial Government Savings Banks.-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 at Mar. 31, 1963 were $\$ 77,070,000$ and the number of depositors was approximately 95,000 . Twenty-one branches were in operation throughout the province.

Alberta.-Savings deposits are accepted at 56 Provincial Treasury Branches throughout Alberta. The total of these deposits at Mar. 31, 1962 was $\$ 37,104,790$, of which $\$ 34,298,016$ was payable on demand bearing interest at $2 \frac{3}{4}$ p.c. per annum, and $\$ 2,806,774$ in term savings for terms ranging from three months to five years bearing interest at rates from $2 \frac{3}{4}$ p.c. to 4 p.c. per annum depending on the term.

Authority was also given for the issue by the Provincial Treasury Department of savings certificates after Jan. 1, 1960 on the following basis: demand certificates bearing interest at $2 \frac{3}{4}$ p.c. per annum in denominations of $\$ 10$ and up, and five-year certificates bearing interest at $4 \frac{1}{2}$ p.c. per annum in denominations of $\$ 25$ and up. Nine of these certificates were outstanding as at Mar. 31, 1962.

Quebec Savings Banks.-The Montreal City and District Savings Bank, founded in 1846 and now operating under a charter of 1871 had, at Mar. 31, 1963, a paid-up capital and reserve of $\$ 11,000,000$, savings deposits of $\$ 287,930,422$ and total liabilities of $\$ 308,153,084$. Total assets amounted to $\$ 308,153,084$, including $\$ 137,729,318$ 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, 1963, savings deposits of $\$ 47,629,683$ and a paid-up capital and reserve of $\$ 3,500,000$. Total liabilities amounted to $\$ 54,227,442$ and total assets to a like amount.

Credit Unions.-Credit unions are savings and loan associations operated by people with a common bond. The bond of association may be in a parish, club, lodge or labour union, that of employment in a plant, industry or department, or that of residence in a rural or a well-defined urban community. Figures showing the growing importance of credit unions as savings and loan associations in Canada are given in Table 18. During the ten-year period 1952-61 the number of credit unions chartered increased by 40 p.c.; the number of members in reporting organizations by 117 p.c.; and the assets of reporting organizations by 255 p.c. Membership reached 2,740,251 in 1961. Quebec holds the lead in the Canadian credit union movement, having more than half of the total membership and about 60 p.c. of the total assets of all credit unions in Canada in 1961.

Occupational credit unions are growing at a faster rate than those of other types; they accounted for 33 p.c. of the number of credit unions in Canada in 1961, about the same percentage as rural credit unions. In Ontario they represented 60 p.c. of the provincial total in 1961. Occupational credit unions also lead in British Columbia. In Alberta and Manitoba, their number was about the same as that of rural credit unions. In the Atlantic Provinces, Quebec and Saskatchewan the credit unions are predominantly rural.

Savings, which include shares and deposits, reached $\$ 1,382,000,000$ in 1961, an increase of 15 p.c. over 1960 ; the average saving per credit union member was $\$ 504$. Loans made to members from these savings amounted to $\$ 578,663,000$ at interest rates of 1 p.c. per month or less on the unpaid balance.

There were 27 central credit unions in 1961. The main function of the central credit union is to act as a credit union for credit unions, mainly by accepting deposits from them and making loans to them. The centrals facilitate the flow of funds to credit unions that cannot meet the demand for local loans. Some of these central credit unions admit cooperative associations to membership. The centrals had assets of $\$ 207,975,000$ in 1961 , an increase of 18 p.c. over 1960; they made loans amounting to $\$ 84,741,000$ to member credit unions and co-operatives. The Canadian Co-operative Credit Society serves as a central credit union for provincial centrals and co-operatives all across Canada. In 1961, membership in this national organization included four provincial centrals, four commercial co-operatives, The Co-operative Life Insurance Company and The Co-operative Fire and Casualty Insurance Company.

## 18.-Credit Unions in Canada, 1952-61

| Year | Credit Unions Chartered | Credit Unions Reporting | Members ${ }^{1}$ | Assets ${ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | \$'000 |
| 1952. | 3,335 | 3,080 | 1,260,435 | 424,400 |
| 1953. | 3,606 | 3,413 | 1,434, 270 | 489, 266 |
| 1954. | 3,920 | 3,690 | 1,560,715 | 552, 363 |
| 1955. | 4,100 | 3,899 3,973 | 1,731,328 | 652,554 761,256 |
| 1956. | 4,253 | 3,973 | 1,870,227 | 761,256 |
| 1957. | 4.389 | 4,044 | 2,059,835 | 852,219 |
| 1958. | 4,485 | 4,156 | 2,187, 494 | 1,009,363 |
| 1959. | 4,570 | 4,202 | 2,360,047 | 1,157,995 |
| ${ }_{1961}^{1960}$. | 4,608 4,697 | 4,345 4,348 | $2,553,951$ $2,740,251$ | $1,314,290$ $1,506,167$ |

[^339]19.-Summary Statistics of Credit Unions, by Province, 1961

| Province | Credit Unions Chartered | Credit Unions Reporting | Members | Assets | Shares | Deposits | $\begin{gathered} \text { Loans } \\ \text { to } \\ \text { Members } \end{gathered}$ | Total Loans since Inception |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Newf | 64 | 48 | 3,178 | 451 | 371 | 23 | 360 | 4,923 |
| Prince Edward |  |  |  | 1,741 | 1,430 | 96 | 753 |  |
| Island........ | 210 | 198 | 62,881 | 17,044 | 14,696 | 483 | 11,369 | 99,709 |
| New Brunswick. | 161 | 161 | 83,526 | 18,328 | 16,251 | 251 | 8,103 | 80,139 |
| Quebec ${ }^{1}$.. | 1,491 | 1,468 | 1,458,093 | 886,503 | 93,481 | 740,665 | 217, 832 | 1,820,292 ${ }^{2}$ |
| Desjardins | 1,239 | 1,237 | 1,294,082 | 780,554 | 52,637 | 684,551 | 178,929 | 1,619,591 |
| Quebec League. | 225 | 204 | 81,000 | 38,674 | 28,949 | 5,752 | 17,625 ${ }^{3}$ | 101,305 |
| $\begin{aligned} & \text { Montreal } \\ & \text { Federation. } \end{aligned}$ | 22 | 22 | 65,963 | 58,411 | 4,076 | 50,236 | 15,343 | 99,396 |
| Cendel ${ }_{\text {Federation. }}$ |  |  |  |  |  |  |  |  |
| Federation. | 1535 |  | 16,798 570,540 | 8,603 266,908 | $\begin{array}{r}7,706 \\ 183 \\ \hline 883\end{array}$ |  | 5,842 |  |
| Ontario.. | 1,535 | 1,315 248 | 570,540 101,162 | 266,908 50,509 | 183,583 38,100 | 47,283 6,319 | $\begin{array}{r}165,764 \\ 34,733 \\ \hline\end{array}$ | 1,019, 942 |
| Manitoba..... | 285 | 248 280 | 101, 162 | 50,509 110,664 | 38,100 84,852 | 6,319 18,196 | 34,733 51,285 | 202,440 |
| Saskatchewan | 282 314 | 280 | 156,492 86,561 | 110,664 35,184 | 84,852 29,120 | 18,196 1,822 | 51,285 23,926 | 310,959 146,997 |
| British Columbia. | 327 | 302 | 208,553 | 118, 835 | 100,282 | 5,092 | 64,538 | 442, 380 |
| Totals, 1961..... | 4,697 | 4,348 | 2,740,251 | 1,506,167 | 562,256 | 820,230 | 578,663 | 4,139,590 ${ }^{2}$ |
| 1969r.... | 4,608 | 4,345 | 2,553,951 | 1,314,290 | 483,575 | 723,803 | 481,192 | 3,566,096 ${ }^{2}$ |

${ }^{1}$ Includes credit unions not in Federations or League. not in Federations or League.
${ }^{3}$ Estimated
${ }^{2}$ Excludes Cendel Federation and credit unions

## Section 4.-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

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 $\$ 3.18$.

[^340]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 exchange 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 $\$ 4.45$, respertively, 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 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

[^341]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 1955 to October 1963 are shown in Table 20.

## 20.-Price of the United States Dollar in Canada, by Month, 1955-63

Nore.-Rates published by Bank of Canada. Noon average market rate for business days in period.
(Canadian cents per U.S. dollar)

| Month | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 | 1962 | 1963 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| January | 96.60 | 99.87 | 96.07 | 98.47 | 96.69 | 95.31 | 99.29 | 104.50 | 107.71 |
| February | 97.69 | 99.91 | 95.83 | 98.10 | 97.49 | 95.17 | 98.96 | 104.88 | 107.76 |
| March. | 98.43 | 99.87 | 95.61 | 97.73 | 96.98 | 95.09 | 98.73 | 104.94 | 107.80 |
| April. | 98.62 | 99.68 | 95.97 | 97.06 | 96.35 | 96.29 | 98.89 | 104.98 | 107.68 |
| May. | 98.59 | 99.18 | 95.56 | 96.69 | 96.29 | 97.81 | 98.75 | 108.23 | 107.72 |
| June. | 98.44 | 98.53 | 95.32 | 96.18 | 95.88 | 98.23 | 100.55 | 108.79 | 107.82 |
| July. | 98.46 | 98.18 | 95.09 | 96.00 | 95.74 | 97.84 | 103.41 | 107.89 | 107.97 |
| August | 98.51 | 98.12 | 94.80 | 96.46 | 95.44 | 96.98 | 103.15 | 107.76 | 108.29 |
| September | 98.78 | 97.77 | 95.92 | 97.68 | 95.16 | 97.25 | 103.08 | 107.68 | 107.98 |
| October | 99.53 | 97.32 | 96.47 | 97.07 | 94.77 | 97.85 | 103.03 | 107.60 | 107.79 |
| November | 99.94 | 96.44 | 96.24 | 96.83 | 95.03 | 97.67 | 103.57 | 107.68 | 107.76 |
| December. | 99.95 | 96.05 | 97.74 | 96.46 | 95.12 | 98.24 | 104.27 | 107.60 | .. |
| Annual Average | 98.63 | 98.41 | 95.88 | 97.06 | 95.90 | 96.97 | 101.32 | 106.89 | .. |

21.-Canada's Official Holdings of Gold and United States Dollars, as at Dec. 31, 1944-62

Nore.-Holdings comprise gold, U.S. dollars and short-term securities 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. dollars)

| Year | Gold | U.S. <br> Dollars | Total | Year | Gold | U.S. Dollars | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1944. | 293.9 | 608.3 | 902.2 | 1954. | 1,072.7 | 869.9 | 1,942.6 |
| 1945. | 353.9 | 1,154.1 | 1,508.0 | 1955. | 1,133.9 | 766.9 | 1,900.8 |
| 1946. | 536.0 | 708.9 | 1,244.9 | 1956. | 1,103.3 | 832.9 | 1,936.2 |
| 1947. | 286.6 | 215.1 | 501.7 | 1957. | 1,100.3 | 728.0 | 1,828.3 |
| 1948. | 401.3 | 596.5 | 997.8 | 1958. | 1,078.1 | 861.0 | 1,939.1 |
| 1949. | 486.4 | 630.71 | 1,117.11 | 1959. | $959.6{ }^{2}$ | 909.6 | 1,869.22 |
| 1950. | 580.0 | 1,161.5 | 1,741.5 | 1960. | 885.3 | 943.9 | 1,829.2 |
| 1951. | 841.7 | 936.9 | 1,778.6 | 1961. | 946.2 | 1,109.6 | 2,055.8 |
| 1952. | 885.0 | 975.2 | 1,860.2 | 1962. | 708.5 | 1,830.9 | 2,539.4 ${ }^{\text {3 }}$ |
| 1953. | 986.1 | 832.4 | 1,818.5 |  |  |  |  |

${ }^{1}$ Does not include $\$ 18,200,000$ in U.S. funds borrowed in the U.S. in August 1949 by the Government of Canada and set aside for the purpose of retiring an equal amount of certain securities payable in U.S. dollars on Feb. 1, 1950. ${ }^{2}$ On Oct. 1, 1959, $\$ 62,500,000$ representing the gold portion of Canada's increased quota was transferred to the International Monetary Fund. ${ }^{3}$ 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 year-end.

## PART II.-MISCELLANEOUS COMMERCIAL FINANCE

## Section 1.-Loan and Trust Companies*

Canadian loan and trust companies, registered with either the federal or provincial governments, operate under the Loan and Trust Companies Acts (RSC 1952, c. 170 as amended by SC 1953, c. 5, SC 1958, c. 35, and SC 1961, c. 51; and RSC 1952, c. 272 as amended by SC 1953, c. 10 , SC 1958, c. 42 , and SC 1961, c. 55 , respectively) and corresponding provincial legislation. Although statistics of provincially registered companies are not collected in detail, it is estimated that more than 95 p.c. of the business of such

[^342]companies is represented in the figures of this Section, so that they may be accepted as fairly inclusive and representative of the volume of business transacted.

The principal function of loan companies is the lending of funds on first-mortgage security, the money thus made available for development purposes being secured mainly by the sale of debentures to the investing public and by savings department deposits. The extent of investments in mortgages by federal and provincial loan companies may be gauged by the following figures: total assets of such companies for the years 1960 and 1961 amounted to $\$ 751,369,090$ and $\$ 771,995,209$, respectively, which amounts include mortgage loans of $\$ 583,982,535$ and $\$ 595,251,243$, respectively; thus, the resulting percentages of mortgages to total assets for those years were approximately 78 p.c. and 77 p.c., respectively.

Trust companies act as executors, trustees and administrators under wills or by appointment, as trustees under marriage or other settlements, as agents in the management of the estates of the living, as guardians of minor or incapable persons, as financial agents for municipalities and companies, as transfer agents and registrars for stocks and bond issues, as trustees for bond issues and, where so appointed, as authorized trustees in bankruptcy. Such companies receive deposits for investment but the investing and lending of such deposits and of actual trust funds are restricted by law. The assets of trust companies (not including estates, trust and agency funds, which cannot be regarded as assets in the same sense as company and guaranteed funds) increased from $\$ 154,202,165$ in 1928 to $\$ 1,608,484,326$ in 1961 . In the former year the total of estates, trust and agency funds administered amounted to $\$ 1,077,953,643$ and in 1961 to $\$ 8,118,543,169$.

A summary of operations of provincial and federal loan and trust companies is given in Table 1. As a result of the nature of the operations of the latter companies, which are intimately connected with the matter of probate, the larger trust companies usually choose to operate under provincial charters. The statistics of Tables 2, 3 and 4 refer to those companies incorporated both by the Government of Canada and by the provinces. Included in the statistics of federal companies are data of loan and trust companies incorporated by Nova Scotia and brought by the laws of that province under the examination of the federal Department of Insurance, as well as data for trust companies in New Brunswick and Manitoba.

## 1.-Operations of Provincial and Federal Loan and Trust Companies, as at Dec. 31, 1960 and 1961



[^343]
## 2.-Assets and Liabilities of Loan Companies, 195\%-61

| Item | Chartered by Government of Canada ${ }^{1}$ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1957 | 1958 | 1959 | 1960 | 1961 |
|  | \$ | \$ | \$ | \$ | \$ |
| Assets |  |  |  |  |  |
| Real estate ${ }^{2}$. | 8,176,745 | 8,503,266 | 9,568,209 | 9,995,987 | 11,315,716 |
| Mortgage loans and agreements of sale. | 245, 459,582 | 269,539, 879 | 312,248,782 | 360,338,064 | 425,789, 259 |
| Collateral loans. . . . . . . . . . . . . . . . . . . | 249,551 | 238,477 | 1,654,320 | 295,504 | 1,434,676 |
| Bonds and debentures. | 39,190,957 | 51,544,496 | 50,748,166 | 57,399,876 | 79.903,391 |
| Stocks. | 15, 907, 174 | 17,894,334 | 18,437,649 | 17, 841,834 | 29,313,096 |
| Cash.. | 8,578,259 | 7,382,089 | 11,596,706 | 8,782,834 | 9,881,139 |
| Totals, Assets ${ }^{3}$. | 320,144,380 | 358,735,601 | 408,793,088 | 460,640,322 | 566,511,576 |
| Liabilities |  |  |  |  |  |
| Liabilities to Shareholders- |  |  |  |  |  |
| Capital paid up | 17,695,087 | 18,726,524 | 18,675,472 | 18,727,117 | 20,410,770 |
| Reserves...... | 20,527,887 | 24,020,837 | 25,605,974 | 27,997,648 | 38,914, 179 |
| Totals, Liabilities to Shareholders ${ }^{4}$. . | 39,430, 170 | 43,764,477 | 45, 106, 321 | 47,403,413 | 60,183,500 |
| Liabilities to the Public- |  |  |  |  |  |
| Debentures. | 169,507,160 | 183,237,073 | 242,286,755 | 277,599,798 | 322,937,934 |
| Deposits.... | 105,761,097 | 124,444,060 | 112,227, 274 | 124,733,566 | 168,310,007 |
| Totals, Liabilities to the Public ${ }^{5}$.... | 280,238,094 | 314,971, 124 | 363,686,767 | 413,236,909 | 506, 328, 076 |
| Totals, Liabilities . | 319,668,264 | 358,735,601 | 408,793,088 | 460,640,322 | 566,511,576 |

Chartered by Provinces ${ }^{8}$

## Assets

Real estate ${ }^{2}$.
Mortgage loans and agreements of sale.
Collateral loans.
Bonds and debentures.
Stocks
Cash...................................................

| 1957 | 1958 | 1959 | 1960 | 1961 |
| :---: | :---: | :---: | :---: | :---: |
| \$ | \$ | \$ | \$ | \$ |
| 3,438,381 | 3,086,620 | 2,593,080 | 2,424,620 | 2,694,255 |
| 175, 175, 917 | 187,149, 974 | 197,420,587 | 223,644,471 | 169,461,984 |
| 3,381,018 | 2,938,213 | 2,892,144 | 2,974,674 | 1,448, 931 |
| 26,409, 535 | 34,005,594 | 33,936,518 | 35,799,773 | 9,766,188 |
| 6,700,522 | 7,707,552 | 11, 128,378 | 12,100, 803 | 12,550, 584 |
| 8,723,799 | 6,549,746 | 7,685,644 | 4,472,163 | 5,342,941 |
| 228,927,416 | 246,637,900 | 262,715,544 | 290,728,768 | 205,483,633 |
| 21,395,380 | 20,085,710 | 20,902,070 | 24,045,050 | 23,158,009 |
| 38,896,098 | 39, 933,681 | 41,683,880 | 30, 824,333 | 29,986,605 |
| 68, 498, 059 | 68,288, 901 | 70,274,619 | 67,664,075 | 59, 423,407 |
| 73, 586,634 | 81, 935,674 | 87,454,173 | 99, 559, 183 | 119, 196, 291 |
| 82, 434,034 | 91,774,807 | 98,592,261 | 117, 120,690 | 18,109,616 |
| 160,429,357 | 178,348,999 | 192,440, 925 | 223,064,693 | 146, 060,226 |
| 228,927,416 | 246,637,900 | 262,715,544 | 290,728,768 | 205,483,633 |

${ }^{1}$ Includes companies chartered by the Government of Nova Scotia which, by arrangement, are inspected by the federal Department of Insurance
${ }^{2}$ Book value of real estate for company, use and other real estate. ${ }^{2}$ Includes interest due and accrued and other assets. to the public. ${ }^{6}$ Exclusive of Nova Scotia.

## 3.-Assets and Liabilities of Trust Companies, 195\%-61

| Item | Chartered by Government of Canada ${ }^{1}$ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1957 | 1958 | 1959 | 1960 | 1961 |
|  | \$ | \$ | \$ | \$ | \$ |
| Assets |  |  |  |  |  |
| Company Funds ${ }^{2,3}$. | 38,843,072 | 36,551,294 | 39,702,594 | 42,503,686 | 59,858,136 |
| Real estate ${ }^{4}$. $\ldots \ldots . \ldots \ldots .$. | 2,988,961 | 3,500,377 | 3,496,168 | 3,510,871 | 7,334,471 |
| Mortgage loans and agreements of sale | 9,514,144 | 8,678,270 | 8,609, 888 | 7,914,553 | 9,398,702 |
| Collateral loans...................... | 404, 577 | 293,660 | ${ }^{324}, 523$ | 417,349 | -676,996 |
| Bonds and debentures. | 15,743, 144 | 14,235, 122 | 16,567,028 | 18,411,140 | 25,475,554 |
| Stocks. | 5, 881, 192 | 5,765,935 | 6,542,623 | $6,862,014$ | 9,615,703 |
| Cash. | 2,876,263 | 3,155,689 | 2,903,129 | 4,032,202 | 5,537,837 |
| Guaranteed Funds ${ }^{\text {2,3 }}$. | 176,964,312 | 238,743,359 | 261,752,047 | 325,792,913 | 519,401,875 |
| Mortgage loans and agreements of sale | 95, 833,151 | 122,379,881 | 147,003,172 | 178,921,263 | 278,153,089 |
| Collateral loans. | 4,729,770 | 7,180,379 | 6,786,105 | 9,659,284 | 11,556,406 |
| Bonds and debentures | 66,029,880 | 99,188,148 | 96, 526,399 | 124, 867, 826 | 210,620,896 |
| Stocks. | 1,539,685 | 1,650,340 | 1,524,926 | 2,753,835 | 4,426,981 |
| Cash. | 7,234,502 | 6,058,157 | 7,158,607 | 5,764,685 ${ }^{\text {r }}$ | 9,583,905 |
| Liabilities |  |  |  |  |  |
| Company Funds ${ }^{\text {5 }}$ | 38,583,249 | 36,551,294 | 39,702,594 | 42,503,686 | 59,858,136 |
| Capital paid up. | 18,332,563 | 16,565,308 | 17,072,542 | 17,553,140 | 22,004,140 |
| Reserves.. | 13,099, 813 | 16,385,119 | 18,832,621 | 21,214,519 | 32,823,231 |
| Guaranteed Funds-Trust Deposits and Certificates. | 176,964,312 | 238,743,359 | 261,752,047 | 325,792,913 | 519,401,875 |
|  | Chartered by Provinces ${ }^{6}$ |  |  |  |  |
|  | 1957 | 1958 | 1959 | 1960 | 1961 |
|  | \$ | \$ | \$ | \$ | \$ |
| Assets |  |  |  |  |  |
| Company Funds ${ }^{2,3}$. | 97,258,395 | 106,914,805 | 117,135,913 | 116,836,442 | 129,352,820 |
| Real estate ${ }^{4}$...... | 11,735,804 | 15,173,335 | 16,810,602 | 12,960,356 | 14, 186,725 |
| Mortgage loans and agreements of sale | 10,330,834 | 9,770,939 | 9,674,177 | 9,571,288 | 10,007,435 |
| Collateral loans..................... | 12,145, 388 | 12,896,627 | 14,546,216 | 12,803,895 | 16,277,588 |
| Bonds and debentures | 25, 342,514 | 24,235, 427 | 24,584,011 | 26, 406,676 | 24,104,945 |
| Stocks.. | 29,161,353 | 31,922,199 | 37,574,200 | 40,189,275 | 48,001,106 |
| Cash. | 3,222,485 | 6,673,663 | 6,928,724 | 6,465,350 | 7,245,667 |
| Guaranteed Funds ${ }^{2}$. . . . . . . . . . . . | 472,678,645 | 588,188,712 | 660,663,751 | 820,656,210 | 899,871,495 |
| Mortgage loans and agreements of sale | 159,294,108 | 202,195,999 | 243, 457,590 | 277,110,007 | 329, 404, 454 |
| Collateral loans...................... | 29,845,537 | 41,652,942 | 38,379,063 | 37, 858,967 | 39,809,753 |
| Bonds and debentures | 253,111,774 | 301, 913, 159 | 325, 946, 836 | 443,027, 864 | 481,645, 708 |
| Stocks. | 1,911,365 | 2,597,947 | 2,846,691 | 2,752,126 | 4,642,875 |
| Cash.. | 25,235,015 | 36,316,995 | 45,666,001 | 52,660,881 | 23,650,461 |
| Liabilities |  |  |  |  |  |
| Company Funds ${ }^{\text {. }}$ | 97,258,395 | 106,914,805 | 117, 135,913 | 116,836,442 | 129,352,820 |
| Capital paid up. | 31,600,360 | 31,724,725 | 31,847,000 |  | 32, 6450,400 |
| Reserves.. | 39,320,428 | 44,356, 427 | 53, 707, 938 | 54,760,891 | $60,400,074$ |
| Guaranteed Funds-Trust Deposits and Certificates. | 472,678,645 | 588,188,712 | 660,663,751 | 820,656,210 | 899,871,495 |
| ${ }^{1}$ Includes companies chartered by the Governments of Nova Scotia, New Brunswick and Manitoba, which, by arrangement, are inspected by the federal Department of Insurance. <br> ${ }^{2}$ Includes other assets. cludes interest due and accrued. <br> ${ }^{4}$ Book value of real estate for company use and other real estate. ${ }^{5} \mathrm{In}$ cludes other company fund liabilities. Manitoba (see text, p. 1064). <br> ${ }^{6}$ Chartered by all provinces except Nova Scotia, New Brunswick and |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

4.-Estates, Trust and Agency Funds of Trust Companies, Chartered by or Supervised by the Federal Government and by Provincial Governments, as at Dec. 31, 1952-61

| Year | Federal Companies ${ }^{1}$ | Provincial Companies ${ }^{2}$ | Total | Year | Federal Companies ${ }^{1}$ | Provincial Companies ${ }^{2}$ | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ |  | \$ | \$ | \$ |
| 1952 | 588,550,279 | 3,383,650,088 | 3,972,200,367 | 1957 | 886,560,559 | 4,695, 817, 867 | 5,582, 378, 426 |
| 1953 | 631,231,540 | 3,470,781,614 | 4, 102,013,154 | 1958 | 990, 078, 160 | 5,328,920,074 | 6,318,998,234 |
| 1954. | 663,520,956 | 3,734,874,516 | 4,398,395, 472 | 1959 | 1,127,767,607 | 5,774,745,226 | 6,902,512,833 |
| 1955. | 734,670,479 | 3,985, 662,299 | 4,720,332,778 | 1960 | 1,246,508,258 | 6,143, 921,379 | 7,390, 429,637 |
| 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 |

[^344]
## Section 2.-Licensed Small Loans Companies and Licensed Money-Lenders*

Licensed small loans companies and licensed money-lenders are subject to the provisions of the Small Loans Act (RSC 1952, c. 251, as amended by c. 46 of the Statutes of 1956) an enactment of the Parliament of Canada regulating personal loans not in excess of $\$ 1,500$ made on the security of promissory notes of borrowers. Most of these notes are additionally secured by endorsements or chattel mortgages. The Act permits, in the case of licensed lenders, maximum rates of cost of loan, including charges of every kind, of 2 p.c. per month on that portion of the unpaid balance of a loan not exceeding $\$ 300$, 1 p.c. per month on that portion of the balance exceeding $\$ 300$ but not exceeding $\$ 1,000$, and one half of 1 p.c. per month on any remainder of the balance exceeding $\$ 1,000$. The maximum rate permitted to be charged by an unlicensed lender is 1 p.c. per month. Prior to Jan. 1, 1957, the scope of the Act extended only to loans of $\$ 500$ and under and the maximum rate permitted to be charged by licensed lenders was 2 p.c. per month and by unlicensed lenders 12 p.c. per annum. The small loans companies-five in number-were incorporated by special Acts of the Parliament of Canada, the first such company commencing business in 1928. Moneylenders, of which there are 76, are made up of companies otherwise incorporated and include a few partnerships and individuals. Table 5 gives the combined financial experience of small loans companies and licensed money-lenders for the years 1958-61.

## 5.-Assets and Liabilities of Small Loans Companies and Money-Lenders, 1958-61



The combined companies showed a sizable increase in the amount of business done in 1961 compared with 1960. The number of small loans made to the public during 1961 increased from $1,094,512$ to $1,169,699$, or by about 7 p.c., and the amount of such loans rose from $\$ 547,824,471$ to $\$ 605,687,740$, or by about 11 p.c. The average small loan made

[^345]was approximately $\$ 518$ compared with $\$ 501$ in 1960 . At the end of the year, small loans outstanding numbered 992,169 for an amount of $\$ 426,157,274$ or an average of $\$ 430$ per loan; comparable figures for 1960 were 957,965 and $\$ 391,548,554$, respectively.

Gross 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, increased from $\$ 28,220,425$ in 1960 ( $\$ 20,922,043$ being the profit on small loans and $\$ 7,298,382$ the profit on business other than small loans) to $\$ 28,975,756$ in 1961 ( $\$ 20,746,644$ being the profit on small loans and $\$ 8,229,112$ the profit on business other than small loans).

## Section 3.-Sales of Canadian Bonds*

Previous editions of the Year Book have traced sales of Canadian bonds to the end of 1961. This review continues the record, discussing new issues placed in 1962 with some comment on developments in the first half of 1963.

Excluding all financing of less than one year, the preliminary total of new security issues placed in 1962 has been calculated at $\$ 5,428,161,039$. This total is exclusive of $\$ 207,783,000$ other financing committed for in 1962 but not 'closed' until 1963. Of such 'open' financing, $\$ 64,774,000$ was payable in Canada and $\$ 143,009,000$ was payable in United States funds. Table 6 shows the sales of bonds by class and country of sale for the ten years 1953-62.

* Prepared by E. C. Gould, Financial Editor, The Monetary Times.


## 6.-Sales of Canadian Bonds, by Class of Bond and Country of Sale, 1953-62

Note.-Figures from 1904 are given in the corresponding table of previous Year Books beginning with the 1933 edition.
(Source: The Monetary Times)

| Year | Crass of Bond |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Federal ${ }^{1}$ | Provincial | Municipal | Parochial and Miscellaneous | Corporation | Total |
|  | $\$$ | \$ | \$ | \$ | \$ | \$ |
| 1953. | 1,950,548,900 | 436,616,900 | 186,784,460 | 35, 242, 605 | 336, 295, 800 | $2,945,488,665$ |
| 1955. | 1,348,500,000 | 434, 165, 000 | 226, 991 , 573 | 66,063,850 | 585,795, 900 | 2,661,516,323 |
| 1956. | 1,357,000,000 | 557, 888,000 | 265, 936, 167 | 52,661,700 | 860,184,400 | 3,093,670,267 |
| 1957. | 2,468,792,850 | 645,959,500 | 305,726,988 | 49,966,700 | 1,024,604,100 | 4,495,050, 138 |
| 1958. | 2,624,534,050 | 791,271,000 | 401, 426, 925 | 62,081,000 | 729,255,000 | 4,608, 567, 975 |
| 1959. | 2,896,050,600 | 653,001,875 | 351, 009, 264 | 73, 804,100 | 369,025,000 | 4,342,890, 839 |
| 1960. | 2,680,048,600 | 616,025,000 | 386, 894, 288 | 85,320, 000 | 498,886,000 | 4,267, 173,888 |
| 1961. | 3,300, 283,950 ${ }^{\text {r }}$ | 996,696,931 | 339, 254,024 | 102,515,500 | 567,059,500 | 5,305,809,905 ${ }^{\text {r }}$ |
| 1962. | 3,420,799,600 | 860,060,800 | 323,459, 239 | 120,740,400 | 703,101,000 | 5,428, 161,039 |
| Year |  |  |  | Country of Sale |  |  |
|  |  |  |  | Canada ${ }^{1}$ and elsewhere than U.S. | United States | Total |
|  |  |  |  | \$ | \$ | \$ |
| 1953. |  |  |  | 2,638,889,450 | 306,599,215 | 2,945,488,665 |
| 1954. |  |  |  | 4,295, 385, 364 | 173, 598,000 | 4,468, 983,364 |
| 1955 |  |  |  | 2,506, 953,323 | 154, 563,000 | 2,661,516, 323 |
| 1956 |  |  |  | 2,623,137,285 | 470, 532, 982 | 3,093,670,267 |
|  |  |  |  | 3,888,174,038 | 606,876,100 | 4,495,050,138 |
| 1958..................................... . . . . . . . . . . . . . . . . |  |  |  | 4,121,617,354 | 486,950,621 | 4,608, 567,975 |
| ${ }_{1959 . \ldots . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ~}^{\text {. }}$ |  |  |  | $3,870,034,408 \mathrm{r}$ | 472, 856, 431 | 4,342,890,839 ${ }^{\text {r }}$ |
| 1960 |  |  |  | $3,984,004,888$ r | 283, 169,000 |  |
| 1961 |  |  |  | 5,157,407,905r | $148,402,000 \mathrm{r}$ 700 | $\begin{aligned} & 5,305,809,905 \mathrm{r} \\ & 5 \end{aligned}$ |
| 1962 |  |  |  | 4,727, 435,300 | 700,725,739 | 5,428,161,039 |

[^346]The federal total of $\$ 3,420,799,600$ includes a preliminary amount of $\$ 1,720,799,600$ for Series 17, Canada Savings Loan, compiled for subscriptions received to May 13, 1963 by the Securities Department of the Bank of Canada. This figure will be revised when complete returns are available. A similar adjustment in connection with the 1961 Series 16 accounts for the revision of the 1961 figures in Table 7.

Series 17 matures in 1976 and will yield an average of 5.11 p.c. if held to maturity. Interest is payable annually at the rate of: $4 \frac{1}{2}$ p.c. for the first three years, 5 p.c. for the next three years, and $5 \frac{1}{2}$ p.c. for the remaining eight years. The average yield at 5.11 p.c. contrasts favourably with previous top yields at 4.98 p.c. in 1959, 4.71 p.c. in 1960, and 4.60 p.c. in 1961 . Several attractive features were continued in Series 17 . The bonds could be registered in names of adults, children, estate or trustees under a will, or administrators of an estate; they were sold in denominations from $\$ 50$ to $\$ 5,000$ up to a maximum limit of $\$ 10,000$ per name; as with all other savings loan issues, they are cashable any time at full face value, plus earned interest.

## 7.-Sales of Canada Savings Loans, 1946-62

Note.-Figures for the issues 1946-61 are for the entire loans, i.e., either to the year-end or to the closing date within the year or in the subsequent year. The figure for Series 17 (1962) is to May 13, 1963 and is subject to revision when complete returns are available.

| Series | Applications | Limits per Individual | Total Sales |
| :---: | :---: | :---: | :---: |
|  | No. | \$ | \$ |
| Series 1, 1946. | 1,248,444 | 2,000 | 535,285, 550 |
| Series 2, 1947. | 910,742 | 1,000 | 287,733,100 |
| Series 3, 1948. | 862,686 | 1,000 | 260,491,150 |
| Series 4, 1949. | 1,015,579 | 1,000 | 320,200,000 |
| Series 5, 1950 | 963,048 | 1,000 | 285, 600,000 |
| Series 6, 1951. | 986,900 | 5,000 | 394,642,400 |
| Series 7, 1952. | 982, 274 | 5,000 | 380,761,100 |
| Series 8, 1953. | 1,267,506 | 5,000 | 850,548,900 |
| Series 9, 1954. | 1,175, 264 | 5,000 | 800,540,900 |
| Series 10, 1955 | 1,180,000 | 5,000 | 729,100,000 |
| Series 11, 1956. | 1,242,250 | 5,000 | 853, 810,150 |
| Series 12, 1957. | 1,293,163 | 10,000 | 1,216,711,900 |
| Series 13, 1958. | 1,179,198 | 10,000 | 923,697,450 |
| Series 14, 1959 | 1,486,794 | 20,000 | 1,536,050,600 |
| Series 15, 1960 | 1,274,058 | 10,000 | 961,048,600 |
| Series 16, 1961 | 1,402,004r | 10,000 | 1,100, 283, 950 r |
| Series 17, 1962. | 1,685,756 | 10,000 | 1,720,799,600 |

Provincial financing at $\$ 860,060,800$ in 1962 comprised direct sales totalling $\$ 422,784,000$ and provincial guarantees for utility, municipal and educational purposes at $\$ 437,276,800$. Excluding all provincial short-term financing of less than one year (as represented by Treasury Bill issues from the provinces of Manitoba and Saskatchewan), direct provincial entries into the bond market during 1962 were as follows:-

| Province | Month | Amount | Province | Month | Amount |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | \$ |  |  | \$ |
| Saskatchewan | January | 15,000,000 | New Brunsw | September | 5,000,000 |
| Nova Scotia. | February | 10,000,000 | Nova Scotia | October... | 15,000,000 |
| Ontario. | February | 60,000,000 | Saskatchewan | October | 15,000,000 |
| Quebec. | March. | 60,000,000 | Ontario....... | Novembe | 60,000,600 |
| Saskatchewan | March | 11,600,000 | New Brunswic | Novembe | 5,000,000 |
| Manitoba* | March | 20,184,000 | Quebec........ | November | 60,000,000 |
| Saskatchewan | April. | 15,000,000 | Prince Edward | Novembe | 2,500,000 |
| Quebec... | July | 50,000,000 |  |  | 422,784,000 |
| New Brunswic | August | 7,500,000 |  |  | ,42,784,000 |

[^347]In the category of direct municipal financing (exclusive of municipal issues, guaranteed by various provinces), the market for new flotations totalled $\$ 444,199,639$ in 1962 . Exclusive of loans for parochial and other educational purposes at $\$ 120,740,400$, these issues amounted to $\$ 323,459,239$. Largest municipal flotations in 1962 were undertaken by the urban centres of Winnipeg, London, Ottawa, Hamilton, Toronto and Montreal.

In the 1962 Canadian bond market, new corporate bond sales totalled $\$ 703,101,000$. Although this was significantly lower than the peak of such sales in 1957 and slightly lower than the 1958 total, it was well above the totals for the three immediately preceding years, as shown in Table 6. The recent upward trend may be attributed to generally improved business environment and a better borrowing position for more corporations.

The largest single corporate borrowers during 1962 were: the Aluminum Company of Canada Limited which entered the market in May with an issue of $\$ 100,000,000,5.10$ p.c., promissory notes, maturing in 1992; and Wabush Securities Corporation which entered the market in August with an issue of $\$ 130,000,000$ in first mortgage and collateral trust bonds, Series "A", maturing Jan. 2, 1991. Both issues were placed privately on the United States market.

The largest single corporate borrowers on the Canadian market during 1962 were The Bell Telephone Company of Canada and Price Brothers \& Company Limited. Bell entered the market in June with an issue of $\$ 30,000,000,5 \frac{1}{2}$ p.c., first mortgage bonds, Series "W", maturing June 15, 1984. This issue was offered at $\$ 99.00$ by a syndicate of dealers, headed by A. E. Ames \& Company Limited, and the Bank of Montreal. Price Brothers entered the market in December with a two-part issue of $\$ 25,000,000,5 \frac{3}{4}$ p.c., serial debenture and sinking fund bonds, Series "A", maturing on Dec. 1, 1964 to 1968 and on Dec. 1, 1982. This issue was sold privately at $\$ 100.50$ by a syndicate of dealers, headed by Royal Securities Corporation Limited; Wood, Gundy \& Company Limited; W. C. Pitfield \& Company Limited; and Dominick Corporation of Canada. There was an additional amount of $\$ 6,626,000,000$ for short-term financing of less than one year in 1962. The increases from $\$ 6,394,000,000$ in 1961 and $\$ 6,490,000,000$ in 1960 indicated a growing importance for the Canadian money market with a sound development since its inception in June of 1954.

In addition to the federal sales of Treasury Bills during 1962, the Provinces of Manitoba and Saskatchewan floated Treasury Bill issues of their own and, later in the year, the City of Montreal began financing in this way. At the same time, several other large Canadian municipalities floated short-term security issues of less than one year. Along with the introduction of Bankers' Acceptances (June 11, 1962), these trends have significantly increased the volume of security financing on a near-term basis.

Because of the exchange crisis in June 1962, interest rates (on the bond market and elsewhere) fluctuated much more abruptly than is customary in Canada. They were forced to a sharply higher level, particularly on short-term funds, in order to attract investments and thus ease the dollar position. As the dollar strengthened, the rates declined steadily but returned to much higher levels toward the end of the year. During the first six months of 1963, the situation became more stabilized at lower levels again and with much less confusion on near-term markets.

Mid-year returns on security financing indicated a relatively stable market during the first half of 1963 with a somewhat more satisfactory reception for new issues. An outstandingly significant trend was the marked increase in new Canadian bond sales in the United States.

# CHAPTER XXIV.-INSURANCE* 

## CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing $p .1$ of this volume.

Insurance, for the purpose of statistical analysis, is usually classified as life, fire and casualty. Most companies operate under Federal Government registration although some have provincial licences only. Also many fraternal orders and societies are engaged in this kind of business. The special articles relating to insurance that have appeared in previous editions of the Year Book are listed in Part II of Chapter XXVI under the heading "Insurance". This volume contains, in Section 1, a specially prepared article on the life insurance business in Canada, its regulation, its growth, and its place in the life of the individual and in the economic structure of the country.

## Section 1.-Life Insurance $\dagger$

Life insurance in Canada is transacted by 128 companies and by 91 fraternal benefit societies. Of the companies, 32 are federal companies, having been incorporated by special Act of Parliament, 27 are provincial companies incorporated pursuant to provincial legislation and 69 are companies incorporated in countries other than Canada, principally the United States and Britain. Of the fraternal benefit societies, 15 have been incorporated by special Act of Parliament, 30 were incorporated in the United States and the remainder were formed under provincial legislation. In addition, there are a large number of provincially incorporated mutual benefit societies and funeral societies that provide small amounts of life insurance.

All companies and societies transacting life insurance in Canada are subject to government supervision in one form or another. There is a Department of Insurance as part of the organization of the Federal Government and each province has a Department of Insurance or an Insurance Branch of a department charged with responsibility for supervising insurance companies. All companies and societies incorporated by Parliament, and all companies and societies incorporated out of Canada and transacting insurance in Canada,

[^348]are required to be registered under statutes administered by the federal Department of Insurance; these companies and societies are also required to be licensed under the laws of each province in which they transact business. Companies incorporated under provincial legislation are required to be licensed under the laws of the province of incorporation and of any other province in which they transact business; some provincial companies may also be registered under statutes administered by the federal Department of Insurance.

The federal Department of Insurance exercises general financial supervision over the companies and societies registered with it, mainly for the purpose of seeing that they maintain a solvent position and are able to meet their insurance obligations. Hence, all registered companies and societies must file annual statements with the Department giving the details of their condition and affairs and all such companies are subject to examination at their principal offices in Canada by Departmental examiners. The legislation prescribes the classes of assets in which Canadian companies may invest their funds, the classes of assets that must be held in Canada to cover the liabilities in Canada of British and foreign companies, and methods for valuing these assets and liabilities.

Companies and societies from outside Canada are required to maintain assets in Canada, either on deposit with the Minister of Finance or vested in trust with corporate trustees, at least equal to their liabilities in Canada. If assets are vested in trust with corporate trustees, the relevant trust deed must be so drawn up as to require the approval of supervisory authorities for the release of assets. The classes of assets that may be deposited with the Minister of Finance or so vested in trust are, in general, the same as those in which a Canadian company may invest its funds.

Provincial insurance departments, in addition to carrying out financial supervision of provincial companies not registered with the federal Insurance Department, administer provincial insurance Acts which deal with the terms of insurance contracts issued in the province, the licensing of insurance agents and other matters relating to the conduct of insurance within the province.

Since the larger companies are all federal companies and all British and foreign companies and societies must be registered with the federal Department of Insurance, the companies so registered transact about 95 p.c. of the life insurance business in Canada. The annual statements submitted by these companies are published in the annual reports of the Department, thus providing a ready source of statistical information concerning life insurance in Canada of companies registered with the Department. Each provincial insurance department also publishes an annual report giving summary statistics concerning insurance in the province and the financial statements of companies incorporated in the province. However, most of the statistics used in the following paragraphs are drawn from the reports of the federal Department of Insurance, and may be taken to be sufficiently representative to give a reliable picture of the industry.

The total life insurance in force in Canada at the end of 1962, including both federally registered and provincially licensed companies and societies, amounted to approximately $\$ 56,342,000,000$.

| Insurance <br> in Force |
| ---: |
| $\$ \mathbf{0 0 0 , 0 0 0}$ |
| 52,233 |
| 790 <br> 53,023 |
| 2,601 |
| 169 |
| 409 |
| 140 |
| 3,319 |
| 56,342 |

This is truly an enormous sum and, with the exception of the United States, it exceeds the amount of life insurance in force in any other country in the world. In relation to national income, the amount of life insurance in force in Canada exceeds that of any other country including the United States, the ratio being about 180 p.c. for Canada and about 150 p.c. for the United States. At the end of 1962 the life insurance in force per capita amounted to $\$ 3,034$. The very startling growth, particularly over the past few years, is shown in the following statement of insurance in force in federally registered companies.

|  | Year | In Force at Beginning of Year | Increase in Force for the Year | Percentage Gain |
| :---: | :---: | :---: | :---: | :---: |
|  |  | \$'000,000 | \$'000,000 |  |
| 1930. |  | 6,157 | 335 | 5.4 |
| 1935. |  | 6,221 | 38 | 0.6 |
| 1940. |  | 6,776 | 200 | 2.9 |
| 1945. |  | 9,140 | 612 | 6.7 |
| 1950. |  | 14,409 | 1,337 | 9.3 |
| 1951. |  | 15,746 | 1,490 | 9.5 |
| 1952. |  | 17,236 | 1,855 | 10.8 |
| 1953. |  | 19,091 | 2,136 | 11.2 |
| 1954. |  | 21,227 | 1,908 | 9.0 |
| 1955. |  | 23,135 | 2,317 | 10.0 |
| 1956. |  | 25,452 | 3,635 | 14.3 |
| 1957. |  | 29,087 | 4,000 | 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 |
| 1962.. |  | 48,284 | 3,949 | 8.2 |

Life insurance is divided into three main classes-ordinary, group and industrial. The term "ordinary" describes insurance issued by way of individual policies to individual policyholders; "group" describes insurance covering a group of persons under a single contract, the most common example being the employees of a single employer; and "industrial" applies to policies for small amounts, usually less than $\$ 1,000$, calling for weekly premiums to be collected by an agent of the company at the home of the insured person.

Ordinary insurance in force increased from $\$ 13,600,000,000$ at the end of 1952 to $\$ 33,300,000,000$ at the end of 1962 . Group insurance also increased very greatly, both absolutely and relative to the volume of the other two classes; in 1952 it amounted to only $\$ 3,800,000,000$, representing less than one quarter of the total, but in 1962 it reached over $\$ 18,000,000,000$, one third of the total. Industrial insurance, on the other hand, decreased over the years and appears to be gradually vanishing from the scene; it reached a peak of $\$ 1,700,000,000$ in 1954 and declined steadily to $\$ 867,000,000$ at the end of 1962. To a large extent, the purpose it once served is being taken over by group insurance.

In addition to the growth in total amounts, there has been a substantial increase in the size of individual policies. At the end of 1962, the average size of ordinary policies in force was $\$ 4,169$ compared with $\$ 2,542$ ten years earlier. For group business, the average amount of insurance in force per person covered under group policies was $\$ 1,209$ compared with $\$ 993$ ten years earlier. However, the year-to-year trend for group insurance has been uneven due in part to the rapid increase in the number of groups covered. The trend toward increased size appears more sharply from an examination of the average size of policies issued each year rather than the average size of policies in force. In 1962, the average size of new ordinary policies was $\$ 6,732$; in 1952 it was $\$ 3,842$.

The increases in average size of policies and in total insurance in force are attributable partly to larger policies of the same general types as have been issued over the years, partly to the growth in population and national income leading to increased insurance needs, and partly to the trend toward term insurance and away from policies providing for lifetime coverage or for endowment benefits. Under term insurance, the coverage extends for a specified period of years only and, consequently, larger amounts are obtainable for a given premium than in the case of policies providing for lifetime coverage. In the
search for security there is evidently a strong effort being made to obtain larger amounts of protection for dependants in the years of age when policyholders are likely to have young children, at the expense of having no insurance protection in later years after the term insurance expires. Many influences have led to this trend. Inflation and rising prices have forced it to some extent because larger amounts are needed to give adequate protection. The development of employer-employee pension plans has provided a secure income for retirement years and thus permitted greater attention to be given to immediate protection of dependants through insurance; this has been particularly so where pension plans include widows' benefits. In the absence of pension plans, endowment insurance policies and policies providing lifetime coverage were sometimes used, not only to provide insurance protection but also to build up equity values to be available at retirement. In addition to these influences, the growth of mutual savings funds and investment funds has undoubtedly drawn off some share of the money that would otherwise have gone toward the higher premium plans of insurance.

A further important point in this connection is the growth in group insurance. Group insurance is usually issued on the one-year term plan, i.e., insurance is renewed from year to year on the basis of a premium determined each year taking into account the amounts of insurance and the ages of the persons covered. Such insurance principally covers employees of a single employer but other groups may be insured in this way also; for example, members of a labour union, borrowers from a financial institution, or members of a professional group. The insurance provided under such a plan for any particular person usually exists only while he is a member of the group. Thus the coverage is temporary and is likely to exist only in the years of active employment-years when mortality rates are low. The premiums are low as compared with insurance that continues for the lifetime of the person insured since in the latter case the payment of the face amount is certain; the only uncertainty is the time of payment. (It may be noted, however, that there is a growing trend in group insurance to include a small amount of insurance on retired employees; this is, in effect, insurance continuing for the whole of life. The inclusion of coverage on retired employees will have a significant influence in raising the cost of group insurance plans.)

The appeal of group insurance arises not only from the low premium due to low mortality and low administrative costs, but also from the appeal to employers as a convenient and popular 'fringe' benefit that relieves employers and fellow employees of responsibility that they might otherwise feel toward destitute dependants of a deceased employee.

The growth of group insurance on the lives of creditors of financial institutions is another important development. Such insurance is earmarked for the discharge of specific obligations.

Even among ordinary insurance policies there has been a substantial growth over the years in the relative amount of term insurance. In 1925 only 5 p.c. of new life insurance issued by federally registered Canadian life insurance companies was on the term plan, whereas, in 1962, 39 p.c. was either on the term plan or in the form of temporary additions to sums insured; in 1925 only 5 p.c. of ordinary insurance in force in such companies was term insurance, whereas, in 1962, 25 p.c. was term insurance or temporary additions to sums insured. Although these percentages are derived from the business both in and out of Canada of federally registered Canadian companies, the trend also applies to the business in Canada. In fact, the trend in Canada is probably even more strongly toward term insurance. Figures for the amount of term insurance issued in Canada by Canadian companies are not readily available; however, for British and foreign companies in 1962, 36 p.c. of the business in force in Canada consisted of term insurance or temporary additions to the sums insured. This compares with the 25 p.c. already mentioned for Canadian companies both in and out of Canada.

Another important aspect of the life insurance business falls under the head of annuities. From the social viewpoint, the emphasis here is more on the problem of providing an $\mathrm{i}^{\text {ncome at older ages than of providing protection for dependants. However, the provision }}$
of retirement income is not completely divorced from insurance. Many insurance policies provide not only for payment on death of the policyholder but also, as an alternative, for payment of a lump sum or an annuity to the policyholder should he survive to a specified age. Also, many insurance policies taken out principally for the protection of dependants are surrendered at advanced ages and the proceeds are used to provide retirement income when the need for dependants' protection has decreased or disappeared.

The annuity business of life insurance companies falls into two categories-annuity contracts issued to individuals and annuity contracts providing benefits to the members of a group. The most common example of the use of the latter is the issuance of a group contract to an employer to provide retirement annuities to his employees. There has been a rapid increase in the annuity business over the years but particularly in the group annuity category and the growth of employer-employee pension plans is principally responsible for this increase. Income tax concessions granted in favour of organized pension plans have encouraged the growth of group annuities but, until recently, no such incentive existed for individual annuities.

The number of individual annuity contracts in force at the end of 1962 under which the payment of benefit has not yet started was 96,692 , and the gross annual payment provided for under such contracts amounted to $\$ 52,000,000$. Individual vested contracts numbered 21,627 providing annual payments of $\$ 13,000,000$. Corresponding figures for 1952 were $\$ 38,000,000$ and $\$ 6,000,000$, respectively. Under group annuities, the number of contracts in force at the end of 1962 was 8,276 , covering some 536,886 individuals. The annual payment provided for on the basis of current contributions to vesting date was $\$ 758,000,000$. The corresponding figures for 1952 were 2,026 contracts covering 207,839 individuals with an estimated annual payment of $\$ 217,000,000$.

The figures of amounts of insurance in force give an indication of the volume and growth of the business and indicate also the potential benefits to policyholders or other beneficiaries. The actual benefit payments year by year are also of interest. Although the principal purpose of life insurance policies is to provide a benefit payable on the death of the policyholder, nevertheless life insurance policies in use are of great variety and many provide benefits to policyholders that are not limited to a payment on death. Endowment policies provide for payment of the face amount at a specified time; nearly all policies provide for the payment of cash surrender values if the policy is terminated prior to maturity; some policies provide for payments to be made on disability of the policyholder; and many policies provide for the payment of dividends based upon the profits of the company. Amounts paid to policyholders or beneficiaries in 1962 under policies in Canada by federally registered companies, with an indication of the nature of the payment, were as follows:-

| Type of Benefit | Amount | Type of Benejit | Amount |
| :---: | :---: | :---: | :---: |
|  | \$ |  | \$ |
| Death benefits | 230,746,890 | Surrender benefits. | 175,746,797 |
| Maturity benefits. | 50,154,364 | Annuity benefits. | 36,117,936 |
| Disability benefits. | 6,570,931 | Dividends....... | 139,644, 287 |

The extent to which the 'savings' element of life insurance contracts is made use of by policyholders is illustrated by the fact that cash surrender values paid on termination of policies amounted to $\$ 176,000,000$ compared with death benefits of $\$ 231,000,000$.

The funds available to meet these payments to policyholders arise from premium payments and from interest earned by the companies on their portfolio of investments. Premium payments to federally registered companies for life insurance and for annuities in Canada during 1962 amounted to $\$ 1,028,000,000$ (life insurance premiums, $\$ 807,000,000$ and annuity premiums, $\$ 221,000,000$ ) and investment income amounted to $\$ 598,000,000$. Taking federal and provincial companies and societies together, the insurance premiums in Canada in 1962 amounted to $\$ 873,000,000$. These income items must be used to meet policy claims, to provide any necessary increase in reserves and to meet expenses.

The total premium income has been increasing year by year, as would be expected after noting the increase in the insurance in force. Life insurance premiums and annuity premiums received by federally registered and provincially licensed companies represented 3.83 p.c. of personal disposable income in Canada in 1962. This ratio reached a high of 7.99 p.c. in 1933, dropped steadily to about 3.4 p.c. in 1942,1943 and 1944, and has since varied irregularly between a minimum of 3.18 p.c. in 1952 and a maximum of 3.97 p.c. in 1961. There is no very clear trend in recent years, although a gradual but irregular increase has occurred since 1952. In view of the growth in personal savings as a proportion of disposable income, it might have been expected that life insurance premiums would grow even faster than they have. The rapid growth in other savings media together with a swing toward lower premium plans of insurance has evidently reduced to some extent the relative importance of life insurance in the savings field.

The extent to which life insurance companies act as a medium for savings and investment is illustrated by great growth in their assets. Although these funds are referred to as being assets of the companies and are in fact owned by the companies, they are, for the most part, much in the nature of trust funds since the companies are required by law to hold the major portion of such funds in reserve against future liabilities. The investment of these funds forms an important part of the activities of life insurance companies and, of course, has an important effect on the economy of the country. At the end of 1962, federally registered Canadian life insurance companies had assets amounting to $\$ 9,800,000,000$ applicable to their life insurance business. Of this amount, 45 p.c. was invested in bonds, 6 p.c. in stocks (preferred 1.55 p.c. and common 4.11 p.c.), 38 p.c. in mortgage loans, 3 p.c. in real estate, 5 p.c. in policy loans and the remainder in other minor categories. Of the total amount, the assets invested in Canadian securities and mortgages amounted to $\$ 5,900,000,000$. British and foreign companies transacting insurance in Canada maintain assets on deposit with the Minister of Finance or vested in trust with Canadian trust companies amounting to $\$ 2,200,000,000$. Of this amount, 69 p.c. was in bonds, 3 p.c. in stocks and 27 p.c. in mortgages. Almost all of these investments are in Canadian securities.

The recent growth in the assets of federally registered life insurance companies is shown in the following statement.

|  | Year | Total Assets |  | Year | Total Assets |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | \$'000,000 |  |  | \$'000,000 |
| 1950. |  | 4,612 | 1958. |  | 7,583 |
| 1952. |  | 5,207 | 1960. |  | 8,610 |
| 1954. |  | 5,872 |  |  |  |
| 1956. |  | 6,670 | 1962. |  | 9,812 |

The change in the distribution of these assets from 1950 to 1962 was as follows:-

| Type of Investment | 1950 | 1962 | Type of Investment | 1950 | 1962 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | p.c. | p.c. |  | p.c. | p.c. |
| Bonds. | 66 | 45 | Policy loans........ | 5 | 5 |
| Stocks. | 6 | 6 | Other. | 4 | 3 |
| Mortgage loans. | 18 | 38 | Totals.... | 100 | 100 |
| Real estate. | 1 | 3 |  |  |  |

The most significant change during the period was the reduction in the proportion of assets invested in government bonds and the increase in the proportion invested in mortgage loans. Mortgage loans are a particularly suitable investment for life insurance companies since they are usually of long term and they produce a fixed interest yield; this enables an insurance company to undertake the long-term interest commitments involved in issuing life insurance and annuity contracts.

The yield on investments of registered Canadian companies has risen steadily for many years as shown in the following statement.

|  | Year | Net Rate of Investment Income Earned |  | Year | Net Rate of Investment Income Earned |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | p.c. |  |  | p.c. |
| 1954. |  | 4.06 | 1959. |  | 4.80 |
| 1955. |  | 4.18 | 1960. |  | 4.98 |
| 1956. |  | 4.31 |  |  |  |
| 1957. |  | 4.52 | 1961. |  | 5.13 |
| 1958. |  | 4.66 | 1962. |  | 5.26 |

Further statistical details are shown in the following Subsections.

## Subsection 1.-Summary of Life Insurance in Canada

Tables 1 and 2 summarize insurance premiums, claims, amounts of new policies effected, and amounts of insurance in force on Dec. 31 for the years 1961 and 1962. These data are presented in Table 1 on the basis of the supervising government authorities for the companies and societies concerned, and the same data are presented in Table 2 classified on the basis of nationality of company or society and by supervising government authorities.

## 1.-Summary of Life Insurance in Canada according to Supervising Government Authority, 1961 and 1962

| Year and Supervising Authority | Insurance <br> Premiums | Claims ${ }^{1}$ | New Policies Effected | Insurance in Force, Dec. 31 |
| :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \%'000 | \$'000 |
| 1961 |  |  |  |  |
| Federally Registered. | 782,473 | 270,532 | 6,266,222 | 49,023,976 |
| Companies. | 771,443 | 265,784 | 6,113,480 | 48,284,483 |
| Societies... | 11,030 | 4,748 | 152,742 | 739,493 |
| Provincially Licensed Only. | 50,790 | 18,122 | 546,183 | 2,873,961 |
| Within Province of Incorporation- |  |  |  |  |
| Companies.. | 38,057 | 12,226 | 422,295 | 2,230,465 |
| Societies....................... | 3,179 | 2,061 | 22,371 | 165,259 |
| Outside Province of Incorporation Companies. | 7,051 | 1,988 | 83,097 | 342,627 |
| Societies. | 2,503 | 1,847 | 18,420 | 135,610 |
| Totals, 1961. | 833,263 | 288,654 | 6,812,405 | 51,897,937 |
| 1962 |  |  |  |  |
| Federally Registered | 818,873 | 292,235 | 6,174,991 | 53,023,230 |
| Companies | 807,135 | 287,472 | 6,027,070 | 52,233,370 |
| Societies.. | 11,738 | 4,763 | 147,921 | 789,860 |
| Provincially Licensed Only. | 53,875 | 19,016 | 647,669 | 3,318,825 |
| Within Province of Incorporation- |  |  |  |  |
| Companies. <br> Societies | 41,391 | 12,754 | 517,416 | 2,601,357 |
| Outside Province of Incorporation- | 3,196 | 2,245 | 17,443 | 168,927 |
| Companies. | 6,628 | 2,032 | 93,631 | 408,719 |
| Societies. | 2,660 | 1,985 | 19,179 | 139,822 |
| Totals, 1962. | 872,748 | 311,251 | 6,822,660 | 56,342,055 |

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## 2.-Summary of Life Insurance in Canada, by Nationality of Company or Society, 1961 and 1962

| Year and Nationality of Company |
| :---: |

${ }^{1}$ Death, disability and maturity under insurance and annuity 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 almost doubled since 1953-evidence of the general recognition of the value of life insurance for the adequate protection of dependants against misfortune.

The operations analysed in the tables of this Subsection, with the exception of Table 7, include only those companies under federal registration and are exclusive of fraternal organizations and provincial licensees. However, companies under federal registration account for about 95 p.c. of the life insurance in force in Canada.

# 3.-Life Insurance Effected and in Force in Canada by Companies under Federal Registration, Decennially 1880-1950 and Annually 1951-62 

Note.-Figures for 1869-1900 are given in the 1938 Year Book, p. 958; for 1901-39 in the 1942 edition, p. 855; and for $1940-49$ in the 1957-58 edition, p. 1168. Statistics of fraternal society insurance, excluded here, are given at pp. 1084-1085.

| Year | New <br> Insurance Effected during Year | Insurance in Force Dec. 31 |  |  |  | Insurance <br> 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, 990 | 31,613,730 | 81,591,847 | 248,424,567 | 51.98 |
| 1900. | 67,729,115 | 267,151,086 | 39,485, 344 | 124, 433, 416 | 431,069,846 | 81.32 |
| 1910. | 150,785,305 | 565,667,110 | 47, 816,775 | 242,629,174 | 856,113,059 | 122.51 |
| 1920. | 630,110,900 | 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, 603, 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 |
| 1951. | 1,990,926,006 | 11,807, 992,826 | 391,382,883 | 5,036, 207, 593 | 17,235, 583, 302 | 1,230.28 |
| 1952. | 2,287,264,465 | 13, $085,349,418$ | 443,275,711 | 5,562,003,368 | 19,090,628,497 | 1,320.33 |
| 1953. | 2,551,393,073 | 14, 526,740, 295 | 519,137, 847 | 6,181,027,477 | 21, 226, 905,619 | 1,429.90 |
| 1954. | 2,656,722,341 | 15,765, 916,390 | 596,756,619 | 6,771,905,859 | 23,134, 578,868 | 1,513.35 |
| 1955. | 3,154,670,863 | 17, 401, 229,498 | 691,660,141 | 7,358,681,886 | 25,451, 571, 525 | 1,621.33 |
| 1956. | 4,119,767,664 | 19,783, 194,985 | 819,968, 279 | 8, 484, 252, 879 | 29,087,416,143 | 1,808.83 |
| 1957. | 4,936, 358,903 | 22,262,730,280 | 994,762,620 | 9,829,563,601 | 33,087,056, 501 | 1,992.00 |
| 1958. | 5,129,714,126 | 24, 560, 264, 322 | 1,170,343, 106 | 10,765, 171, 257 | 36, 495, 778, 685 | 2,136.76 |
| 1959. | 5,622,229,317 | 27,695, 965,612 | 1,332,991, 403 | 11,844, 852,757 | 40, 873, 809,772 | 2,337.92 |
| 1960. | 5,692,887,763 | 30,418, 380,871 | 1,554, 844,168 | 12,675, 749, 459 | 44,648, 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 |

${ }^{1}$ Based on official estimates of population.

## 4.-Summary of Life Insurance in Canada Transacted by Companies under Federal Registration, 1960-62

| Item | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: |
| Canadian Companies- |  |  |  |
| New policies effected during year...................... No. | 379,785 | 382,511 | 372,400 |
| Pricies in ${ }^{\text {d }}$ | 3,887, 468, 819 | 4,201,873, 094 | 4,081,609,538 |
| Policies in force Dec. 31............................... No. | 5,101,467 | 5,171,891 | 5,228,321 |
| Policies ceased by death or maturity ................ No. | 30,418, 380, 8771 | 33, 143, 378,921 | 35,907, 032, 820 |
| Policies ceased by death or maturity................. No. $^{\text {d }}$ | 47, 339 $158,926,397$ | 49,955 $174,004,921$ | [82,077 |
| Insurance premiums.................................. \% | 487, 434,347 | 513,673,584 | 537,360,977 |
|  | 167, 409,481 | 183,170,511 | 196,569,562 |
| British Companies- |  |  |  |
| New policies effected during year..................... No. | 29,196 | 30,232 | 35,986 |
| Policies in force Dec. $31 . \ldots$ | 301,251, 878 | 310,020,907 | 350,148,518 |
| Policies in force Dec. 31.............................. No. | - 254, 683 | 265,501 | - 282,913 |
| Policies ceased by death or maturity................. No. | $1,554,844,168$ 2,046 | 1,778, 255, 673 | 2,040,700,311 |
| Policies ceased by death or maturity $\ldots \ldots \ldots \ldots \ldots \ldots . .1{ }^{\text {No. }}$ | 5,187,138 | 5,766,859 | 2,068 $7,429,904$ |
| Insurance premiums................................. \& | 29,562,928 | 35,374,844 | 36,213,550 |
|  | 6,162,832 | 7,004,949 | 8,781,188 |
| Forelgn Companies- |  |  |  |
| New policies effected during year................... No. | 291,208 | 291,849 | 284,165 |
| Policies in force Dec. 31. | 1,504,167,066 | 1,601,586,077 | 1,595,311, 832 |
| Policies in force Dec. $31 . \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots$. No. | $4,831,044$ $12,675,749,459$ | 4, 784,618 $13,362,848,638$ | $\begin{array}{r} 4,726,342 \\ 14,285,636,913 \end{array}$ |

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## 4.-Summary of Life Insurance in Canada Transacted by Companies under Federal Registration, 1960-62-concluded

| Item | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: |
| Foreign Companies-concluded |  |  |  |
| Policies ceased by death or maturity................. No. | 58,707 | 57,882 | 60,962 |
| \$ | 67,651,012 | 70,842,616 | 77,322, 635 |
| Insurance premiums.................................... \$ | 211,679,249 | 222,394,427 | 233,560, 185 |
|  | 71,502,111 | 75,608,283 | 82,121,435 |
| All Companies- |  |  |  |
| New policies effected during year..................... No. | 700,189 | 704,592 | ${ }^{692,551}$ |
| \$ | 5,692,887,763 | 6,113,480, 078 | 6,027,069,888 |
|  | $\begin{array}{r} 10,187,194 \\ 44,648,974,498 \end{array}$ | $\begin{array}{r} 10,222,010 \\ 48,284,483,232 \end{array}$ | $10,237,576$ $52,233,370,044$ |
| Policies ceased by death or maturity .............. No. | 108, 092 | 18, 109,785 | 52,233,370,044 |
| Policies ceased by death ornatic. | 231,764,547 | 250,614,396 | 272, 243,866 |
| Insurance premiums.................................. \$ | 728,676,524 | 771,442,855 | 807, 134, 712 |
|  | 245, 074, 424 | 265, 783,743 | 287,472,185 |

${ }^{1}$ Death, disability and maturity under insurance and annuity contracts.
5.-Ordinary and Industrial Life Insurance Policies Effected and in Force in Canada by Companies under Federal Registration, 1960-62


## 6.-Group Life Insurance Effected and in Force in Canada by Companies under Federal Registration, 1960-62

| Year andNationality of Company | Effected |  | In Force Dec. 31 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Policies | Amount | Policies | Certificates | Amount | Average Amount per Certificate |
|  | No. | \$ | No. | No. | \$ | \$ |
| Canadian.. | 2,746 | 1,138,360, 835 | 17,618 | 9,339,582 | 9,747,785,180 | 1,044 |
| British. . | 106 | 46,156,941 | 380 | 31,623 | 158,683,178 | 5,018 |
| Foreign. | 3,324 | 301,489,442 | 17,536 | 3,259,336 | 4,496,619,617 | 1,380 |
| 1961 |  |  |  |  |  |  |
| Canadian... | 2,863 | 1,357, 079,668 | 18,843 | 10,170,774 | 11,131,537,939 |  |
| British.... | 110 | 29,561,999 | 17,468 | , 38,097 | 195, 151,774 | 5,122 |
| Foreign.................. | 3,130 | 348,369,239 | 17,899 | 3,336,581 | 4,745, 423, 280 | 1,422 |
| 1962 |  |  |  |  |  |  |
| Canadian.................. | 2,704 | 1,221,572,073 |  |  | 12,606,774,560 | 1,134 |
| British.... | 2,113 | 1, 24, 357,460 | 20, 551 | 1,46,905 | -228, 224,414 | 4,878 |
| Foreign...................... | 2,910 | 336, 899, 180 | 17,934 | 3,765,010 | 5,213,553, 366 | 1,385 |

## 7.-Insurance Death Rates in Canada, 1960-62

| Type of Insurer | 1960 |  |  | 1961 |  |  | 1962 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Policies Exposed to Risk | Policies Terminated by Death | Death Rate per 1,000 | Policies Exposed to Risk | Policies Terminated by Death | Death Rate per 1,000 | Policies Exposed to Risk | Policies Terminated by Death | Death Rate per 1,000 |
|  | No. | No. |  | No. | No. |  | No. | No. |  |
| All companies, ordinary..... | 7,363,722 | 39,383 | 5.4 | 7,778,686 | 41,728 | 5.4 | 7,935,499 | 42,901 | 5.4 |
| All companies, industrial. | 2,820,903 | 29,042 | 10.3 | 2,439,055 | 29,102 | 11.9 | 2,292,344 | 29,057 | 12.7 |
| Fraternal benefit societies. | 503,631 | 4,154 | 8.3 | 482,395 | 4,248 | 8.8 | 486,537 | 4,067 | 8.4 |
| Totals | 10,688,256 | 72,579 | 6.8 | 10,700,136 | 75,078 | 7.0 | 10,714,380 | 76,025 | 7.1 |

## Subsection 3.-Finances of Companies Transacting Life Insurance under Federal Registration

The financial statistics in Tables 8 and 9 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.

## 8.-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, 1960-62.

| Assets and Liabilities | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ |
| Canadian Companies |  |  |  |
| Total Assets ${ }^{1}$. | 8,610,477,204 | 9,192,620,682 | 9,811,701,596 |
| Bonds. | 4,030,635,953 | 4,230,778, 406 | 4,406,499,653 |
| Stocks.. | , 448,247,750 | 507, 518,934 | 555,714,167 |
| Mortgage loans on real estate.... | $3,113,067,104$ $4,942,226$ | $3,397,570,991$ $3,765,566$ | $3,743,923,588$ 3 3 |
| Real estate. | 282, 892,192 | 297,128,710 | 304,103,625 |
| Policy loans | 431,676,229 | 453,973,133 | 476, 525,931 |
|  | 70,481,884 | 87,816,509 | 83,011,556 |
| Investment income, due and accrued....................... | 87,000,373 | $93,178,342$ | 102,193,008 |
| Outstanding insurance premiums and annuity considerations. . Shares of company's capital stock (purchased under mutuali- | 72,166,799 | 73,905,317 | 75,725,020 |
| zation plan).................................................. | 48, 576,355 | 22,873,520 | 19,099,930 |
| Other assets................................................ | 20,790,339 | 24,411,254 | 41,393,059 |
| Total Liabilities. | 8,079,533,701 | 8,615,294,163 | 9,187,473,406 |
| Actuarial reserve for contracts in force | 6,787,219,229 | 7,215,971,954 | 7,678,852,499 |
| Amounts on deposit pertaining to contracts | 651,158,732 | 703,505,689 | 754,200,963 |
| Outstanding claims under contracts. | 69,521,291 | 76,416,994 | 80,100,665 |
| Other liabilities.............................................. | 571,634,449 | 619,399,526 | 674,319,279 |
| Surplus....................................................... | 512,877,050 | 557,540,660 | 607,392,331 |
| Capital stock paid up........................................... | 18,066, 453 | 19,785,859 | 16,835,859 |
| British Companies |  |  |  |
| Assets in Canada ${ }^{2}$. | 471,782,029 | 551,309,311 | 623,746,252 |
| Bonds. | 272,527,602 | 300,467,547 | 340, 868,997 |
| Stocks. | 64,407,916 | 84,996, 944 | 77,198,096 |
| Mortgage loans on real estate | 104, 098,014 | 129, 070,439 | 160,111,821 |
| Real estate.. | 12,562,089 | 15, 808, 174 | 19,679,296 |
| Policy loans | 9,542,965 | 10,668,212 | 11,798,349 |
| Cash. | 1,888, 192 | 2,662,733 | 3,531,247 |
| Investment income, due and accrued......................... | $1,721,185$ | 2,000,117 | $2,634,383$ |
| Outstanding insurance premiums and annuity considerations.. | 2,213,653 | 2,511,341 | 2,918,754 |
| Other assets................................................. | 2,820,413 | 3,123,804 | 5,005,309 |
| Liabilities in Canada. | 436,254,716 | 502,023,947 | 563,941,164 |
| Actuarial reserve for contracts in force | 425,757,729 | 489, 006,601 | 549,445,711 |
| Outstanding claims under contracts | 2,528,986 | 2,812,169 | 3,575,044 |
| Other liabilities. | 7,968,001 | 10,205,177 | 10,920,409 |
| Excess of assets over liabilities in Canada. | 35,527,313 | 49,285,364 | 59,805,088 |
| Foreign Companies |  |  |  |
| Assets in Canada ${ }^{2}$. | 1,624,049,659 | 1,721,578,778 | $1,799,646,595$ |
| Bonds........... | 1,126,180,644 | 1,179,089,631 | $\begin{array}{r} 1,212,682,813 \\ 1,840.000 \end{array}$ |
| Stocks | 1,840,000 | 1, 9220,000 | $1,840,000$ $448,767,256$ |
| Mortgage loans on real estat | 370, 245,594 | 409,757,513 | 448,767, ${ }^{6}$, 4526 |
| Real estate...... | $6,762,180$ $73,930,490$ | $6,706,778$ $78,286,854$ | 81,478,818 |
| Policy loans. | $73,930,490$ $16,811,266$ | 78,286,854 | 817,292,824 |
| Investment income, due and acrued | 18,933,390 | 20,048,688 | 20,611,625 |
| Outstanding insurance premiums and annuity considerations.. | 8,373, 123 | 8,886,999 |  |
| Other assets.................................................. | 972,972 | 1,264,248 | 1,587,773 |
| Liabilities in Canada | 1,458,457,809 | 1,528,542,691 | 1,604,248,722 |
| Actuarial reserve for contracts in force | 1,332,941, 807 | 1,404, 745, 501 | 1,467,513,801 |
| Outstanding claims under contracts. | 16,164,508 | $17,245,736$ $106,551,454$ | 117,587,420 |
| Other liabilities.. | 109,351, 494 | 106,551, 454 | 117,587,420 |
| Excess of assets over liabilities in Canada | 165,591,850 | 193,036,087 | 195,397,873 |

${ }^{1}$ 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). market values.
9.-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, 1960-62.

| Revenue and Expenditure | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: |
|  | \$ | \$ | § |
| Canadian Companies |  |  |  |
| Total Revenue. | 1,426,390,067 | 1,532,091,118 | 1,634,090,425 |
| Insurance premiums and annuity considerations. | $995,635,251$ | 1,060, 250, 335 | 1,120, 269,350 |
| Investment income | 398,865,617 | 439,062,495 | 481,375,636 |
| Sundry items. | 31,889, 199 | 32,778, 288 | 32,445,439 |
| Total Expenditure | 1,344, 451,702 | 1,444,709,755 | 1,548,186,744 |
| Claims incurred. | 513,649, 249 | 540,804,416 | 572,056, 264 |
| Normal increase in actuarial reserve | 390, 370, 013 | 426,277,286 | 465,387,915 |
| Taxes, licences and fees. | 26,827,249 | 30, 107, 179 | 30,130,778 |
| Commissions and general expenses | 219,999,045 | 235, 390,544 | 249.722,492 |
| Sundry items. | 64,949,249 | 70,584,904 | 76,154,607 |
| Dividends to policyholders | 116,103,692 | 127,180,903 | 139,293,991 |
| Increase in provision for profits to policyholders | 12,553,205 | 14,364,523 | 15,440,697 |
| Analysis of Increase in Surplus- |  |  |  |
| Excess of revenue over expenditure. | 81,938,365 | 87,381,363 | 85,903,681 |
| Net capital gain on investments | 4,763,260 | 16,578,525 | -7,099,234 |
| Other credits to surplus (net). | -25,450,094 ${ }^{1}$ | -35,318,1791 | -10,396, 2641 |
| Net increase in special reserves or funds | -13,147,221 | -18,196,397 | -13,696,955 |
| Special increase in actuarial reserve. | -5, 831,944 | -2,470,435 | -2,566,340 |
| Dividends to shareholders | -2,249,870 ${ }^{2}$ | -3,293,123 ${ }^{2}$ | -2,293,217 ${ }^{2}$ |
| Increase in surplus (policyholders and shareholders) | 40,022, 496 | 44,681,754 | 49,851,671 |
| British Companies |  |  |  |
| Revenue in Canada. | 89,366,783 | 103,298,332 | 114,601,159 |
| Insurance premiums and annuity considerations | 66,846,296 | 76,872,177 | 82,146,635 |
| Investment income | 21,512,524 | 25, 144,687 | 29,906,324 |
| Sundry items... | 1,007,963 | 1,281,468 | 2,548,200 |
| Grpenditure in Canada | 41,968,372 | 48,643,560 | 53,667,088 |
| Claims incurred. | 22,579, 102 | 24,130,823 | 28,129,382 |
| Taxes, licences and fees | 783,198 | 1,019,476 | 966,112 |
| Commissions and general expenses | 13,713,408 | 14, 847, 539 | 16,817,232 |
| Other expenditure. | 919,424 | 1,189,895 | 1,523,438 |
| Dividends to policyholders. | 3,973,240 | 7,455,827 | 6,230,924 |
| Foreign Companies |  |  |  |
| Revenue in Canada. | 308,304,438 | 324,386,707 | 344,544,290 |
| Insurance premiums and annuity considerations. | 219, 197, 012 | 229,401,765 | 242,888,277 |
| Investment income | 75, 944,843 | 80,765,032 | 86, 410,033 |
| Sundry items. | 13,162,583 | 14,219,910 | 15,245,980 |
| Expenditure in Canada. | 217,634,311 | 232,317,535 | 252,397,524 |
| Claims incurred. | 111,265, 293 | 118,305, 427 | 128, 109,843 |
| Taxes, licences and fees | 6,572,120 | 7,359,836 | 9,455,446 |
| Commissions and general expenses | 55, 365,523 | 55, 995,768 | 58,015,357 |
| Other expenditure. | 12,211,518 | 13,614,606 | 14,427,634 |
| Dividends to policyholders. | 32,219,857 | 37,041, 898 | 42,389, 244 |

${ }^{1}$ Includes amounts written off shares purchased under mutualization plan.
${ }^{2}$ Dividends on shares other than those purchased 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 10 gives statistics of life insurance in Canada transacted by fraternal benefit societies and Table 11 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 $\mathbf{1 0}$ and $\mathbf{1 1}$ relate to the 16 Canadian societies registered by the federal Department of Insurance, only one of which does not grant life insurance benefits.

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, though 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.

## 10.-Summary of Life Insurance in Canada Transacted by Fraternal Benefit Societies under Federal Registration, 1960-62

| Item | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: |
| Canadian Socleties |  |  |  |
| Premiums.............................................. \$ | 6,028,137 | 6,420,343 | 6,564,923 |
| Claims incurred.......................................... \& | 3,951,619 | 4,197,859 | 4,435,946 |
| New certificates effected................................ No. | 39,005 | 37,636 | 36,039 |
| \$ | 120, 969, 865 | 125, 982,733 | 118,675,589 |
|  | - 303, 899 | - 309,189 | 567,531,469 |
| Certificates ceased by death or maturity................ No. | $472,288,784$ 2,840 | $531,985,025$ 3,069 | $567,531,469$ 3,034 |
| Certificates ceased by death or maturity................. $\mathrm{F}_{8}$ | 2,467,083 | 2,733,349 | 2,770,094 |
| Foreign Societies |  |  |  |
| Premiums........................................... \$ | 5,437,592 | 4,609,789 | 5,173, 554 |
| Claims incurred.......................................... \& $^{\text {d }}$ | 3,176,578 | 2,587,711 | 2,707,101 |
| New certificates effected................................ ${ }_{\text {No. }}^{\text {¢ }}$ | 31,571,574 | 10,916 $26,759,469$ | 11,481 29, 245,429 |
| Certificates in force Dec. 31............................. . No. | 157,487 | 147,304 | 148,233 |
|  | 230, 069,059 | 207,507,569 | 222,328, 090 |
| Certificates ceased by death or maturity............... No. No. | 2, 1,957 | 1,735 $1,702,662$ | 1,828, ${ }^{1,857}$ |

11.-Financial Statistics for Fraternal Benefit Societies under Federal Registration, 1960-62


[^351]
## 11.-Financial Statistics for Fraternal Benefit Societies under Federal Registration, 1960-62-concluded



[^352]
## 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 1961 and 1962 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 statistics for individual companies are shown in Table 12 and for individual currencies in Table 13. The data given in both of these tables 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. Although these book rates of exchange do not follow the day-to-day fluctuations in the current rates of exchange, they are adjusted when necessary to keep them reasonably in line with the current rates.

Canadian life insurance companies operating under federal registration at Dec. 31. 1962 had life insurance in force amounting to $\$ 15,119,095,790$ in countries outside Canada, Insurance in force in currencies other than Canadian dollars amounted to $\$ 15,091,047,886$; 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 $\$ 35,907,032,820$ at Dec. 31, 1962, and the total business on the books of these companies, in and out of Canada, amounted to $\$ 51,026,128,610$. Thus, about 30 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 life insurance companies registered by the Federal Government held, at the end of 1962, Commonwealth and foreign investments in the amount of $\$ 3,074,279,241$.
12.-Life Insurance Effected and in Force for Canadian Companies (excluding Fraternal Societies) under Federal Registration, in Currencies other than Canadian Dollars, by Company, 1961 and 1962.

| Year and Company | Insurance Effected |  |  | Insurance in Force Dec. 31 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Commonwealth Currencies | Foreign Currencies | Total | Commonwealth Currencies | Foreign Currencies | Total |
|  | \$ | § | \$ | \$ | \$ | \$ |
| 1961 |  |  |  |  |  |  |
| Alliance Mutual. |  | 742,484 | 742,484 |  | 3,742,699 | 3,742,699 |
| Canada................. | 58,145,956 | 148, 128, 305 | 206,274, 261 | 371, 142, 033 | 934, 040, 108 | 1,305, 182, 141 |
| Canadian Reassurance. Commercial | 156,800 |  | 156,800 | 156,800 | 43,011 | 156,800 43,011 |
| Confederation. | 43, 398,654 | 106,304,218 | 149,702,872 | 299,012,229 | 562, 213, 101 | 861, 225, 330 |
| Continental... |  |  |  | 8,766 | 105,068 | 1,315, $\begin{array}{r}1132,834 \\ \hline 18\end{array}$ |
| Crown. | 24,136,700 | 239,670, 008 | 263,806,708 | 118, 129, 442 | 1,197,263,469 | $1,315,392,911$ $300,524,243$ |
| Dominion | 8,013, 093 | 42,350,775 | 50, 363, 868 | 36, 824, 563 | 263,699,680 | 300,524, 243 <br> 1,749,500 |
| Dom. of Canada General |  |  |  | $1,748,500$ 245,960 | 1,000 3,333 | 1,749,293 |
| T. Eaton. | - | 二 | - | 245,960 | 51,030 | 51,030 |
| Excelsior. | 42,000 | 50,000 | 92,000 | 42,000 | 116,904 | 158,904 |
| Great-West |  | 224,094, 387 | 224,094, 387 | 5,376 | 1,954,823,999 | 1,954, 829, 375 |
| Imperial. | 52,190, 951 | 4,335, 150 | 56, 526,101 | 228,708,556 | $46,755,435$ | 275, 463,991 |
| London. |  | 1,920,762 | 1,920, 762 |  | -9,901,920 | - $\begin{array}{r}9,901,920 \\ \hline\end{array}$ |
| Manufacturers | 90,042,705 | 311, 149,776 | 401, 192, 481 | 611, 109,746 | 1,680, 562,469 | 2,291,672,215 |
| Maritime. | 8,542,290 | 128,421 | 8,670,711 | 10,118,493 | 713,619 316,650 | $\begin{array}{r} , 832,112 \\ 316,650 \end{array}$ |
| Monarch. |  | 35,000 11,500 | 35,000 11,500 |  | 316,650 257,015 | ${ }_{348,121}^{31}$ |
| Montreal | 79,813 | - $\begin{array}{r}11,500 \\ 3,026,529\end{array}$ | - 11,500 | 91,106 637,817 | 27,866,991 | 28,504,808 |
| National. | 5,900, 495 | 22,030,115 | 27, 930,610 | 32,463,257 | 58,578,377 | 91,041,634 |
| North American | 19,852,667 | 99,099, 942 | 118, 952,609 | 87,474,278 | 397, 840, 408 | 485, 314,686 |
| Northern. | - | 6,536,360 | 6,536, 360 | 19,500 | 37,430,131 | 37,449,631 |
| Sauvegarde.............. |  | $327 \overline{,} 222,684$ |  |  | 3,627,262,011 | 4, 862, 408,405 |
| Sun. <br> Western | 170,085, 339 | $\begin{array}{r} 327,222,684 \\ 2,108,892 \end{array}$ | $\begin{array}{r} 497,308,023 \\ 2,108,892 \end{array}$ | 1,235, 146, 394 | $3,627,262$, $2,311,865$ | 4,862, $2,311,865$ |
| Totals, 1961. | 480,587,463 | 1,538,945,308 | 2,019,532,771 | 3,033,084,816 | 10,805,905,293 | 13,838,990,109 |

12.-Life Insurance Effected and in Force for Canadian Companies (excluding Fraternal Societies) under Federal Registration, in Currencies other than Canadian Dollars, by Company, 1961 and 1962-concluded.

| Year and Company | Insurance Effected |  |  | Insurance in Force Dec. 31 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { Common- } \\ & \text { wealth } \\ & \text { Currencies } \end{aligned}$ | Foreign Currencies | Total | Commonwealth Currencies | Foreign Currencies | Total |
|  | \$ | \$ | \$ | \$ | \$ | \$ |
| 1962 |  |  |  |  |  |  |
| Alliance Mutual. |  | 883,667 | 883,667 |  | 4,196,462 | 4,196,462 |
| Canada. | 62,063,315 | 152, 248, 381 | 214,311,696 | 410,354, 112 | 1,010,885, 855 | 1,421,239,967 |
| Canadian Reassurance.. | 106,857 | 20,920 | 127,777 | 213,712 | 20,920 | 234.632 |
| Commercial.. |  |  |  |  | - 42,348 | 42,348 |
| Confederation. | 47,322,073 | 137,681,050 | 185,003,123 | 325,853,153 | 673,619,714 | 999, 472, 867 |
| Continental. |  | - |  | 6,333 | 109,161 | 115,494 |
| Crown. | 28,374,974 | 241,552,479 | 269,927,453 | 132,305,526 | 1,342,029,113 | 1,474, 334,639 |
| Dominion. | 9,054,954 | 58,576,406 | 67,631,360 | 42,556,072 | 305,911, 810 | 348,467,882 |
| Dom. of Canada General |  |  |  | 1,634,421 | 17,050 | 1,651,471 |
| T. Eaton.. | 102,000 | - | 102,000 | 331,460 | 3,333 | 334,793 |
| Equitable. | - |  | - |  | 43, 861 | 43, 861 |
| Excelsior |  | 673,517 | 673,517 | 35,700 | 788,487 | 824,187 |
| Great-West | - | 287,118,686 | 287, 118,686 |  | 2,135,887,395 | 2,135,887,395 |
| Imperial. | 57,656,848 | 3,413,608 | 61,070,456 | 267,049,931 | 43,727, 353 | 310,777, 284 |
| London. |  | 1,097,724 | 1,097,724 |  | 10,091,695 | 10,091,695 |
| Manufacturers | 95,901,258 | 354,691,958 | 450,593,216 | 671,244,298 | 1,894,203,374 | 2,565,447,672 |
| Maritime. | 5,015,784 | 57,199 | 5,072,983 | 9,498, 597 | 651,373 | 10,149, 970 |
| Monarch. | - | 27,317 | 27,317 |  | 276,094 | 276,094 |
| Montreal | - |  |  | 86,330 | 251,060 | 337,390 |
| Mutual. |  | 3,143,731 | 3,143,731 | 618,580 | 28,908,019 | 29,526,599 |
| National. | 7,087,887 | 25,780, 247 | 32, 868,134 | 36,680,554 | 79,472,904 | 116, 153, 458 |
| North American | 23,800,273 | 109,043,313 | 132,843,586 | 104,516, 574 | 470,484,651 | 575,001,225 |
| Northern. |  | 4,475,736 | 4,475,736 | 19,500 | 38,582,870 | 38,602,370 |
| Sauvegarde |  |  |  |  | 5,000 | 5,000 |
|  | 176,877,257 | 344,540,124 | 521,417,381 | 1,332,750,649 | 3,708,906,427 | 5,041,657,076 |
| Western |  | 4,988, 431 | 4,988,431 | 1,332,750,610 | 6,176,055 | 6,176,055 |
| Totals, 1962 | 513,363,480 | 1,730,014,494 | 2,243,377,974 | 3,335,755,502 | 11,755,292,384 | 15,091, 047,886 |

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.
13.-Life Insurance Effected and in Force for Canadian Companies (excluding Fraternal Societies) under Federal Registration, in Currencies other than Canadian Dollars, by Currency, 1961 and 1962.

| Currency | 1961 |  | 1962 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Insurance Effected | Insurance in Force | Insurance Effected | Insurance in Force |
|  | \$ | \$ | \$ | \$ |
| Commonwealth Currencles. | 480,587,463 | 3,033,084,816 | 513,363,480 | 3,335,755,502 |
| Pounds- |  |  |  |  |
| Sterling................................. | 353,440, 966 | 2,376,071,155 | 384,620,474 | 2,612,726,900 |
| Australia ${ }_{\text {British West }}$ Indies, Bahamas, Bermuda |  | 17,630 | 384,62, 47 | 4,367 |
| and Jamaica........................... | 29,665, 049 | 156,624,619 | 27,422, 251 | 172,266,917 |
| Cyprus.............................. | 2,708,737 | 6,750, 293 | 4,103,462 | 10,328,648 |
| Rhodesia and Nyasaland.................. | 29,819,460 | 120,440,547 | 34,461,798 | 140,604,622 |
| Dollars- |  |  |  |  |
| British Honduras..................... | - | 631,124 | - | 606,281 |
| Trinidad | 56, 877,598 | 265,975,062 | 57,649,424 | 296,327,650 |
| Hong Kong. ............................. | 2,687,807 | 16,038,436 | 2,347,425 | 17,960,760 |
| Malaya.................................. | 3,828,706 | 31,743,994 | 2,088,384 | 31,507,423 |

13．－Life Insurance Effected and in Force for Canadian Companies（excluding Fraternal by Currency， 1961 and 1962－concluded．

| Currency | 1961 |  | 1962 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Insurance Effected | Insurance in Force | Insurance Effected | Insurance in Force |
|  | \＄ | \＄ | \＄ | $\delta$ |
| Commonwealth Currencies－concluded |  |  |  |  |
| Rupees－ |  |  |  |  |
| Ceylon． | － | 29，439，245 | － | 27，597，438 |
| India．．．． | 二 | $5,226,286$ 760,026 |  | 4，319， 388 |
| Shillings－ |  |  |  |  |
| East Africa． | 1，559，140 | 23，366， 399 | 670，262 | 20，813，094 |
| Foreign Currencies | 1，538，945，308 | 10， $005,905,293$ | 1，730，014，494 | 11，755，292，384 |
| Bahts（Thailand）． |  | － 21,489 |  | 1， 12,743 |
| Bolivars（Venezuela）． | 5，008， 921 | 38，558，588 | 11，261，591 | 43，694，159 |
| Colones（El Salvador） | 678，000 | 806， 600 |  | 801，000 |
| Cordobas（Nicaragua）．．．．．．．．．．．．． | 1，403，$\overline{7} 35,913$ | 9，761， $\begin{array}{r}2,38,037\end{array}$ | 1，573，329，317 | 1,899 $10,685,823,622$ |
| Francs（France）．．．．．．．．．．．．．．．．．．．．． | 1，403， | 9，761，818，496 | 1，573，329，317 | 10，685， 223,629 |
| Francs（Switzerland） | － | 2，080 | － | 2，080 |
| Guilders（Netherlands） |  | 279，897 | 3，100 | 253，297 |
| Guilders（Netherlands Antilles） | 3，502，110 | 18，724， 851 | 3，272，032 | 19，977，431 |
| Kyats（Burma）．． | － | 74，751 | － | 55，301 |
| Pesos（Argentina） | － | 3，262，104 | － | 1，497，367 |
| Pesos（Chile） | － |  | － |  |
| Pesos（Colombia） | 6，404，534 | 5，920 |  | \％ $\begin{array}{r}4,960 \\ \hline 131,618\end{array}$ |
| Pesos（Cuba）．．．．．．．．．．i．3） Pesos（Dominican Republic） | $6,404,534$ $4,117,731$ | $174,909,255$ $18,159,789$ | 585,000 $4,965,850$ | $131,618,589$ $22,587,966$ |
| Pesos（Mexico）．．．．．．．． | －20，000 | 3，644，998 | 26，000 | 3，337， 259 |
| Pesos（Philippines） | 14，142，361 | 91，731， 990 | 12，445，908 | $74,875,278$ |
| Pounds（Egypt） |  | 12，840，472 | － | 10，336， 652 |
| Pounds（Republic of Ireland） | 12，519，473 | $73,073,113$ | 15，873， 828 | $86,543,015$ |
| Pounds（Israel） | 5，123，398 | 21，252，538 | 7，769，722 | 26，895，582 |
| Rand（South Africa） | 83，692，867 | 586，339，344 | 100，482，146 | 646，662，121 |
| Rupiahs（Indonesia）． | － | 284，712 | － | 238，386 |
| Soles（Peru）． | 二 | 108,743 3,192 | 二 | 69,973 3,206 |
| Yen（Japan）． | － | 3，192 |  | 3，206 |
| Totals | 2，019，532，771 | 13，838，990， 109 | 2，243，377，974 | 15，091，047，886 |

## Section 2．－Fire and Casualty Insurance

At the end of 1962 there were 278 companies registered by the Federal Government to transact fire insurance in Canada（ 86 Canadian， 77 British and 115 foreign）．Of these companies， 270 （ 80 Canadian， 77 British and 113 foreign）were also registered to transact casualty insurance．In addition， 96 companies were registered by the Federal Government to transact casualty insurance but not fire insurance（22 Canadian， 7 British and 67 foreign）．Of the companies registered to transact fire and／or casualty insurance， 72 were also registered to transact life insurance； 14 of these were registered for fire，life and casualty insurance and 58 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 25 registered fraternal benefit societies transacting accident and sickness insurance，of which 22 also transacted life insurance．

The operations analysed in the tables of this Section，with the exception of Table 14， include only those companies under federal registration．As shown in Table 14，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 but may be allowed to sell insurance in other provinces．Many of them are mutual organizations transacting only fire insurance on a county，municipal or parish basis．

Table 14 summarizes net premiums written and net claims incurred for the years 1961 and 1962 in the fields of fire insurance and casualty insurance in Canada. These data are presented on the basis of the supervising government authorities for the companies concerned. The table relates to insurance companies only; no data are included with respect to fraternal benefit societies.

## 14.-Fire and Casualty Insurance Transacted in Canada, 1961 and 1962


${ }^{1}$ Registered or licensed reinsurance deducted from all companies. Prior to 1961, all reinsurance was deducted for Canadian companies included in the data of federally registered companies; these figures are therefore not strictly comparable with the same items in previous years.

## Subsection 1.-Fire Insurance Transacted in Canada by Companies under Federal Registration

Net premiums written and net claims incurred during each year from 1953 to 1962 are given in Table 15 and the figures for 1961 and 1962 are classified by province and nationality of company in Table 16.

## 15.-Fire Insurance Transacted in Canada by Companies under Federal Registration, 1953-62

(Less all reinsurance for Canadian companies and registered or licensed reinsurance only for British and foreign companies)

| Year | Net Premiums Written during Year | Net Claims Incurred during Year | Year | Net Premiums Written during Year | Net Claims Incurred during Year |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ |  | \$ | \$ |
| 1953. | 145,937,546 | 66,787,604 | 1958. | 177, 364,450 | 88, 151,837 |
| 1954. | 148,446,105 | 70,445,544 | 1959. | 196,702,991 | 96,054,754 |
| 1955. | 146,444, 845 | 77,836,245 | 1960. | 200,735, 958 | 100,501,460 |
| $1956 .$. | 155,506,787 |  | 1961. | 200, 859, 825 | 96, 343, 611 |
| 1957... | 156,246, 117 | 109,757, 161 | 1962. | 200,768, 495 | 104,472,605 |

## 16.-Fire Insurance in Canada classified by Province and by Nationality of Company under Federal Registration, 1961 and 1962

(Registered or licensed reinsurance deducted)

| Year and Province or Territory | Canadian Companies |  | British Companies |  | Foreign Companies |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { Net } \\ \text { Premiums } \\ \text { Written } \end{gathered}$ | Net Claims Incurred |  | Net Claims Incurred | $\xrightarrow[\substack{\text { Net } \\ \text { Premiums } \\ \text { Written }}]{\substack{\text { N }}}$ | Net Claims Incurred |
|  | \$ | \$ | \$ | \$ | \$ | \$ |
| 1961 |  |  |  |  |  |  |
| Newfoundland. | 700,655 | 607,146 | 1,506,623 | 2,604,463 | 784,658 | 787,729 |
| Prince Edward Island | 276,980 | 77,928 | 411,300 | 138,225 | 153,704 | 58,663 |
| Nova Scotia | 2,546,162 | 949, 660 | 3, 389, 883 | 1,166, 002 | 1,892,292 | 643,880 |
| New Brunswi | 1,955,820 | 891,792 | 2,654,330 | 1,079,437 | 1,869,323 | 727,768 |
| Quebec. | 22,590,765 | 8,956, 096 | 23,637,309 | 11,770,032 | 22,417,686 | 11,809,338 |
| Ontario. | 27,684, 161 | 12,592,600 | 23,341, 146 | 11,983,145 | 26,737,393 | 13,930,254 |
| Manitoba | 4,327,467 | 2,086,467 | 2,654,291 | 1,491,428 | 2,564,430 | 1,165,717 |
| Saskatchewa | 3,327,926 | 1,913,335 | 1,335, 312 | 1,856, 357 | 1,697,538 | , 757.129 |
| Alberta. | 5,017,024 | 1,760,306 | 4,298,009 | 1,886,466 | 3,970,312 | 1,847,725 |
| British Columbia. | 5,863,221 | 2,482,998 | 7,181,925 | 2,851,653 | 8,589,261 | 3,261,278 |
| Yukon and Northwest Territories. | 166,920 | 133,127 | 374,036 | 195, 383 | 107,974 | -80,455 |
| Canada, 1961 | 74,457,101 | 32,451,455 | 70,784,164 | 36,022,591 | 70,784,571 | 35,069,936 |
| 1962 |  |  |  |  |  |  |
| Newfoundland | 853,684 | 358,274 | 1,425,502 | 386,832 | 773,818 | 233,282 |
| Prince Edward Island | 307,409 | 133,770 | 409,326 | 164,951 | 173,331 | 62,131 |
| Nova Scotia | 2,544,503 | 1,294,766 | 3,196,012 | 1,706,109 | 1,799,603 | 915,390 |
| New Brunswic | 2,151,012 | 1,028,625 | 2,417,740 | 1,168,203 | 1,868,669 | 859,598 |
| Quebec. | 22,911,722 | 12,916,228 | 22,500,816 | 13,947,772 | 22,848,113 | 11,330,934 |
| Ontario | 29,276,354 | 13,559,567 | 21,608,789 | 11,428, 104 | 28, 379, 714 | 13,710, 195 |
| Manitoba | 4,515,617 | 2,701,527 | 2,407,833 | 1,357,539 | 2,540,514 | 1,308,933 |
| Saskatche | 3,118,742 | 1,033,108 | 1,093,863 | 516,547 | 1,635,005 | 677,948 |
| Alberta | 5,069,494 | 2,539,536 | 3,823,988 | 2,971,779 | 3,847,533 | 2,597,275 |
| British Columbi | 6,219, 877 | 3,716,551 | 6,561,858 | 3,767,675 | 8,305,630 | 5,012,241 |
| Yukon and Northwest Territories. | 172,143 | 66,427 | 409,612 | 190,848 | 128,929 | 30,361 |
| Canada, 1962. | 77,140,55\% | 39,348,379 | $\mathbf{6 5 , 8 5 5 , 3 3 9}$ | 37,606,359 | 72,300,859 | 36,738,288 |

## Subsection 2.-Fire Losses

The information in Tables 17 to 19, 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 1961 amounted to $\$ 3,129,743$ from 1,966 fires; average federal losses for the period 1952-61 amounted to $\$ 4,945,019$ from an annual average of 2,252 fires.

## 17.-Statistics of Fire Losses, 1952-61

Note.-Figures for 1926-46 are given in the 1947 Year Book, p. 1078, and those for 1947-51 in the 1960 edition, p. 1169. Figures from 1922 may be obtained from the Dominion Fire Commissioner, Department of Public Works.

| Year | Fires <br> Reported | $\underset{\text { Loss }^{1}}{\text { Property }}$ | Loss per Capita | $\begin{gathered} \text { Deaths } \\ \text { by } \\ \text { Fire } \end{gathered}$ | Year | Fires Reported | Property Loss ${ }^{1}$ | $\begin{gathered} \text { Loss } \\ \text { per } \\ \text { Capita } \end{gathered}$ | $\begin{gathered} \text { Deaths } \\ \text { by } \\ \text { Fire } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | \$ | \$ | No. |  | No. | \$ | \$ | No. |
| 1952. | 64,103 | 80,902,205 | 5.60r | 565 | 1957. | 82,088 | 133,492, 277 | 8.04 | 638 |
| 1953. | 67,519 | 84,270, 896 | $5.68{ }^{\text {r }}$ | 477 | 1958. | 86,919 | 120,258,696 | 7.04 | 532 |
| 1954 | 68,638 | 91,440, 478 | 5.98r | 479 | 1959. | 84,241 | 124,532,238 | 7.12 | 560 |
| $1955{ }^{2}$. | 76,096 | 102,767,776 | 6.55 | 569 | 1960 | 79,611 | 129, 327,288 | 7.24 7.03 | 566 556 |
| 1956.. | 80,746 | 106,772, 153 | 6.64 | 601 | 1961. | 83,706 | 128, 262,047 | 7.03 | 556 |

[^353]The provincial property losses for 1958-61 given in Table 18 include both insured and uninsured losses.

## 18.-Fire Losses, by Province, 1958-61

| Province or Territory | 1958 | 1959 | 1960 | 1961 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Property Loss ${ }^{1}$ |  |  | Fires <br> Reported | Property Loss ${ }^{1}$ | Loss per Capita |
|  | \$ | \$ | \$ | No. | \$ | \$ |
| Newfoundland. | 4,726,783 | 2,409,232 | 1,421,354 | 820 | 5,535,260 | 12.09 |
| Prince Edward Island | 1,027,267 | 839,912 | 740,780 | 507 | 806,429 | 7.71 |
| Nova Scotia. | 3,714,389 | 4,571,624 | 3,661,464 | 2,553 | 3,093,709 | 4.20 |
| New Brunswick | 3,191,935 | 3,726,872 | 4,766,056 | 2,081 | 3,667,612 | 6.13 |
| Quebec. | 44,776,995 | 40, 989,820 | 40,602,510 | 32,205 | 41,841,330 | 7.96 |
| Ontario.. | 35,655,789 | 40, 819, 944 | 42,163,599 | 25,922 | 40,773,492 | 6.54 |
| Manitobs | 3,782,329 | 4,502,141 | 6,080,983 | 4,029 | 4,884,668 | 5.30 |
| Saskatchewan | 3,980,048 | 3,280,579 | 3,132,065 | 2,138 | 4,741, 201 | 5.12 |
| Alberta. | 6,490,742 | 7,102,221 | 7,630,695 | 5,431 | 8,674,795 | 6.51 |
| British Columbia. | 12,702,394 | 14,859, 552 | 18,290,383 | 7,849 | 13,494, 934 | 8.28 |
| Yukon and Northwest Territories. | 210,025 | 1,430,341 | 837,399 | 171 | 748,617 | 19.90 |
| Canada. | 120,258,696 | 124,532,238 | 129,327,288 | 83,706 | 128,262,047 | 7.03 |

${ }^{1}$ Excludes forest fires and Federal Government property losses.
19.-Fire Losses, by Type of Property and Cause of Fire, 1959-61

| Type of Property and Reported Cause of Fire | 1959 |  | 1960 |  | 1961 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Fires Reported | Property Loss ${ }^{1}$ | Fires Reported | Property Loss ${ }^{1},{ }^{2}$ | Fires Reported | Property Loss ${ }^{1}$ |
|  | No. | \$ | No. | $\$$ | No. | \$ |
| Type of Property |  |  |  |  |  |  |
| Residential. | 63,294 | 28,654,218 | 59,079 | 29,674,618 | 62,096 | 33,108, 236 |
| Mercantile. | 6,553 | 35,408,540 | 6,210 | 37,059,794 | 6,828 | 42,119,107 |
| Farm. | 5,906 | 11,926,439 | 5,383 | 10,577, 827 | 6,766 | 13,176,606 |
| Manufacturing. . . . | 1,703 | 17,490,756 | 1,656 | 21,976, 307 | 1,664 | 18,338, 086 |
| Institutional and assembly Miscellaneous......... | 1,050 | 8,143,459 | 1,076 | 6,564,462 | 1,232 | 7,204,244 |
| Miscellaneous. |  | 22,908, 826 | 6,207 | 22,052,926 | 5,120 | 14,315,768 |
| Totals | 84,241 | 124,532,238 | 79,611 | 129,327,288 | 83,706 | 128,262,047 |
| Reported Cause |  |  |  |  |  |  |
| Smokers' carelessness. Stoves, furnaces, boilers and smoke | 34,028 | 5,914,818 | 31,037 | 6,559,352 | 32,659 | 6,693,799 |
| pipes........................ | 6,348 | 9,777,523 | 5,864 | 7,517,063 | 5,950 | 7,492,539 |
| Electrical wiring and appliances..... | 7,221 | 13, 805, 375 | 7,652 | 14,016,353 | 8,527 | 15,276,056 |
| Matches. <br> Defective and overheated chimneys and flues. | 2,075 | 1,374,897 | 2,170 | 1,737,684 | 2,865 | 2,172,011 |
|  | 3,144 | 3,427,013 | 2,734 | 2,739,957 | 2,833 | 2,958,347 |
| Hot ashes, coals and open fires...... | 1,484 | 1,455,764 | 1,322 | 1,025,169 | 2,022 | 1,882,717 |
| Petroleum and its products.......... | 1,168 | 2, 935,370 | 1,250 | 2,747,507 | 1,337 | 2,963,510 |
| Lights, other than electric.......... | 1,497 2,525 | 1,788, 180 | 1,558 | 1,982, 009 | 1,430 | 1,203,066 |
| Sparks on roois. | 2,525 | 2,012,439 710,105 | 2,582 | 1,679,481 | 3,199 | 2, 254,427 |
| Exposure fires. . | 663 | 1,654,976 | 569 | 1, $1,163,810$ | 685 | -540,627 |
| Spontaneous ignition | 377 | 2,018,170 | 391 | 4,357, 236 | 345 | 1,015,416 |
| Incendiarism...................... | 501 | 3,337,622 | 481 | 2,056,656 | 558 | 3,168,047 |
| Miscellaneous known causes (explosions, fireworks, friction, hot grease or metal, steam or hot water pipes, etc.). |  |  |  |  |  |  |
| Unknown................................ | 10,727 | 9,679,196 | 10,076 | 12,705,978 | 7,788 | 9,852,449 |
|  | 12,041 | 64,640,790 | 11,513 | 68,466,672 | 12,999 | 68,892,894 |

[^354]${ }^{2}$ Addition not accurate; breakdown

## Subsection 3.-Casualty Insurance Transacted in Canada by Companies under Federal Registration

The various classes of casualty insurance are shown in Table 20. These figures relate only to companies registered by the Federal Government.

## 20.-Net Casualty Premiums Written, Premiums Earned and Claims Incurred in Canada, 1961 and 1962

Note.-Excluding marine insurance for which a certificate of registration is not required. Less all reinsurance for Canadian companies and registered or licensed reinsurance only for British and foreign companies.


## 20.-Net Casualty Premiums Written, Premiums Earned and Claims Incurred in Canada, 1961 and 1962-concluded



## Subsection 4.-Finances of Companies Transacting Fire and Casualty Insurance under Federal Registration

The financial statistics of Tables 21 to 23 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.
21.-Total Assets for Fire and Casualty Insurance of Canadian Companies under Federal Registration and Assets in Canada for Fire and Casualty Insurance of British and Foreign Companies under Federal Registration, 1960-62.


[^355]21.-Total Assets for Fire and Casualty Insurance of Canadian Companies under Federal Registration and Assets in Canada for Fire and Casualty Insurance of British and Foreign Companies under Federal Registration, 1960-62-concluded.

| Assets | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ |
| Foreign Companies (In Canada) |  |  |  |
| Real estate. | 4,239,149 | 4,237,769 | 4,338,956 |
| Mortgage loans and agreements of sale. | 64,890 | 50,668 | 50,214 |
| Bonds and stocks.. | 377,248,850 | 403,748, 469 | 410,947, 863 |
| Agents' balances and premiums outstanding | 32,462,204 | 33,656, 628 | 33,957,410 |
| Cash................................... | 28, 281, 262 | 31,064,419 | 27,861,447 |
| Interest, dividends and rents, due and accrued. | 4,177, 035 | 4,479,204 | 4,686,658 |
| Other assets in Canada..................... | 6,656,599 | 8,969,620 | 12,348,098 |
| Totals, Assets of Foreign Companies (in Canada)... | 453,129,989 | 486,206,777 | 494,190,646 |

22.-Total Liabilities for Fire and Casualty Insurance of Canadian Companies under Federal Registration and Liabilities in Canada for Fire and Casualty Insurance of British and Foreign Companies under Federal Registration, 1960-62.

| Liabilities | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: |
| $\bigcirc$ | \$ | \$ | \$ |
| Canadian Companies ${ }^{1}$ (In and Out of Canada) |  |  |  |
| Reserve for unsettled claims. | 118,958, 135 | 128,672,289 | 145,750,446 |
| Reserve of unearned premiums | 146, 337, 672 | 149,512,395 | 157,530,968 |
| Other policy reserves. | 10,242,936 | 10,771,213 | 11, 115,519 |
| Sundry items......... | 69, 828,616 | 81, 810,556 | 78, 899,846 |
| Investment, contingency or general reserve funds. | 24,511,358 | 27,631,165 | 29,014, 448 |
|  | 369,878,717 | 398, 397,618 | 422,311, 227 |
| Capital stock paid. | 39,800,384 | 40,935,371 | 43,139,460 |
| Amounts transferred from other funds | 4,432,146 | 4,781,462 | 7,797,462 |
| Surplus.. | 133, 188, 202 | 150, 870, 526 | 156, 414,048 |
| Totals, Liabillities of Canadian Companies. | 547,299,449 | 594,984,977 | 629,662,197 |
| British Companies (In Canada) |  |  |  |
| Reserve for unsettled claims. | 74,601,018 | 70,329,870 | 80, 887, 140 |
| Reserve of unearned premium | 106, 847, 239 | 107,501, 174 | 107, 229,340 |
| Other policy reserves. | $1,803,029$ $15,725,395$ | $1,827,788$ $15,217,840$ | $1,886,752$ $14,862,342$ |
| Totals, Liabilities of British Companies (in Canada) | 198,976,681 | 194,876,672 | 204,865,574 |
| Excess of assets over liabilities in Canada | 117,107,640 | 131,918,353 | 133,108,793 |
| Foreign Companies (In Canada) |  |  |  |
| Reserve for unsettled claims................................ | 98,677,268 | 102,605,955 | 110,437,647 |
| Reserve of unearned premiums................................... | 147,331,762 | 149, 161,348 | 154,243,652 |
| Other policy reserves. | $13,942,772$ $28,328,797$ | $14,817,158$ $29,628,220$ | $16,163,517$ $29,675,353$ |
| Totals, Liabilities of Foreign Companies (in Canada) | 288,280,599 | 296,212,681 | 310,520,169 |
| Excess of assets over liabilities in Canada | 164,849,390 | 189,994,096 | 183,670,477 |

[^356]23.-Profit and Loss Account of Canadian Companies and Gain or Loss and Other Income in Canada of British and Foreign Companies Transacting Fire and Casualty Insurance under Federal Registration, 1960-62.

| Item | 1960 | 1961 | 1962 |
| :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ |
| Profit and Loss Account-Canadian Companies (In and Out of Canada) |  |  |  |
| Underwriting Gain.......................................... | 11,808,158 | 14,105,882 | -2,662,163 |
| Add: Interest, dividends and rents. | 18,420,668 | 20,702,695 | 22,621,366 |
| Received from shareholders ${ }^{1}$. | 5, 125, 067r | 3,088,744 | 6,095,089 |
| Gain in market value of investments | 8, 914,062 | 3,384,290 | -405,394 |
| Gain on sale of investments.. | 1,310,248 | 1,859,795 | 1,918,500 |
| Gains from other sources... | 3,509,976 ${ }^{\text {r }}$ | 1,651,028 | 2,108,658 |
| Deduct: Investments written down.................................................. | $\begin{array}{r} 234,129 \\ 2,278,764 \end{array}$ | 253,468 $3,343,001$ | 442,384 $3,980,564$ |
| Income taxes.............. | 8,920,933 | $9,064,074$ | 4,340, 854 |
| Losses from other sources. | 9,560,299 r | 8,094,145 | 6,299,762 |
| Dividends to shareholders. | 3,731,384 | 3,641,432 | 3,779,659 |
| Net Gain. | 24,362,670 | 20,396,314 | 10,832,833 |
| Gain or Loss and Other Income-British Companies <br> (In Canada) |  |  |  |
| Underwriting Gain. | 4,180,420 | 5,637,944 | -5,559,989 |
| Deduct: Dividends to policyholders. Income taxes. | $\overline{555,617}$ | $\begin{array}{r} 15,767 \\ 911,676 \end{array}$ | $\overline{639}, 831$ |
| Net Gain or Loss. | 3,624,803 | 4,710,501 | -6,199,820 |
| Other Revenue- <br> Interest, dividends and rents. | 8,486,465 | 9,541,432 | 10, 385,663 |
| Sundry income. . . . . . . . . . . | 702 | 1,088 | 18,971 |
| Gain or Loss and Other Income-Foreign Companies (In Canada) |  |  |  |
| Underwriting Gain | 18,723,696 | 21,837,379 | 15,508,319 |
| Deduct: Dividends to policyholders and others. | 5,105, 842 | 6,151,328 | 5,747,684 |
| Net Gain or Loss. | 8,225,344 | 10,669,249 | 6,503,436 |
| Other Revenue- |  |  |  |
| Interest, dividends and rents. | 15,830,330 | 17,382,442 | 18,350,053 |
| Sundry income............................................... | 68,417 | 180,686 | 197,444 |

${ }^{1}$ Beginning 1960, includes transfers to or from life branch.

## 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 unemployment 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 $\$ 65$ a month at age 70 to fit in with payments under the Old Age Security Act.

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. Group annuity plans now in effect cover a variety of industries and many municipal corporations throughout Canada. 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, 1963, the total number of annuity contracts and certificates issued, excluding replacements, was 525,284 . On the latter date, 88,379 annuities were being paid amounting to $\$ 49,118,134$ annually and 293,358 deferred annuities were being purchased. The net total amount of purchase money received up to Mar. 31, 1963 was $\$ 1,350,459,405$. At that date there were in force 1,437 pension plans underwritten by government annuities, providing 203,742 employees with portable pensions; approximately 23,000 retired employees were receiving pensions. The number of certificates issued during the year was 3,687 compared with 7,480 in 1961-62.

* Revised in the Government Annuities Branch, Department of Labour, Ottawa.
24.-Individual Annuity Contracts and Certificates Issued and Net Receipts, Years Ended Mar. 31, 1959-63, with Cumulative Totals for 1909-63

| Year Ended Mar. 31- | Individual Contracts Issued | Group Certificates Issued | Total Contracts and Certificates Issued | $\begin{gathered} \text { Net } \\ \text { Receipts } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | \$'000 |
| 1909-58. | 182,147 | 269,906 | 452,053 | 1,102,778 |
| 1959. | 5,306 | 18,043 | 23,349 | 63,017 |
| 1960. | 4,378 | 11,564 | 15,942 | 56,041 |
| 1961. | 4,353 | 10,007 | 14,360 | 48,523 |
| 1962. | 4,117 | 7,480 | 11,597 | 43,097 |
| 1963. | 4,296 | 3,687 | 7,983 | 37,003 |
| Totals, 1909-63. | 204,597 | 320,687 | 525,284 | 1,350,459 |

25.-Government Annuity Account Statements, Years Ended Mar. 31, 1959-63

| Item | 1959 | 1960 | 1961 | 1962 | 1963 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Assets | \$ | \$ | \$ | \$ | \$ |
| Fund at beginning of fiscal year................ | 1,047,641,226 | 1,105,825,076 | 1,156,867,225 | 1,199,122,929 | 1,235,303,906 |
| Receipts during the year, less payments......... | 58, 183, 850 | 51,042,149 | 42, 255, 704 | 36,180,977 | 29,132,237 |
| Fund at end of fiscal year. | 1,105,825,076 | 1,156,867,225 | 1,199,122,929 | 1,235,303,906 | 1,264,436,143 |
| Liabilities |  |  |  |  |  |
| Value of outstanding contracts................... | 1,105,825,076 | 1,156,867,225 | 1,199,122,929 | 1,235,303,906 | 1,264,436,143 |
| Receipts |  |  |  |  |  |
| Immediate annuities.............................. | 5,782,225 | 3,991,755 | 2,813, 068 | 2,465,933 | 1,468,984 |
| Deferred annuities. | 57,783,026 | 52,533,797 | 46,063,783 | 41,007, 852 | 36,063,164 |
| Interest on fund. | 40,710,603 | 42, 805, 366 | 44,584,055 | 46,010,743 | 47,414,303 |
| Amount transferred to maintain reserve......... | 157,565 | 189,340 | - | - | - |
| Totals, Receipts.................... | 104,433,419 | 99,520,258 | 93,460,906 | 89,484,528 | 84,946,451 |
| Payments |  |  |  |  |  |
| Payments under vested annuity contracts........ | 41,177, 423 | 43,286, 202 | 44,985, 028 | 46, 927,513 | 48, 854,763 |
| Return of premiums with interest................ | 3,915, 022 | 4,114,357 | 4,610,426 | 5,189,647 | 5,538,438 |
| Return of premiums without interest............. | 1,152,124 | 1,075,438 | 939,012 | 872,639 | 961,182 |
| Unclaimed annuities transferred to Consolidated Revenue Fund, net. | 5,000 | 2,112 | 36,311 | 21,179 | 42,531 |
| Surplus transferred to Consolidated Revenue Fund. | - | - | 634,425 | 292,573 | 417,300 |
| Totals, Payments.................. | 46,249,569 | 48,478,109 | 51,205,202 | 53,303,551 | 55,814,214 |

26.-Numbers and Values of Annuity Contracts, as at Mar. 31, 1962 and 1963

| Classification | 1962 |  |  | 1963 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Contracts | Amount of Annuities | Value at <br> Mar. 31 of Contracts in Force | Contracts | $\begin{aligned} & \text { Amount } \\ & \text { of } \\ & \text { Annuities } \end{aligned}$ | Value at <br> Mar. 31 of Contracts in Force |
|  | No. | \$ | \$ | No. | \$ | \$ |
| Vested ordinary. | 42,325 | 18,691,869 | 151,860,809 | 43,540 | 19,529,333 | 157,424, 941 |
| Vested guaranteed. | 33,370 | 19,222,648 | 209,091,083 | 33,926 | 19,497, 254 | 210,743, 955 |
| Vested last survivor. | 3,717 | 1,966,208 | 24,198, 245 | 3,637 | 1,933,717 | 23,521,426 |
| Vested reducing at age 70... | 6,791 | 7,435,821 | 51,649,098 | 7,276 | 8,157,830 | 55,402,932 |
| Deferred. | 307,231 | 1 | 798,504,671 | 293,358 | 1 | 817,342, 889 |
| Totals............. | 393,434 | 47,316,546 | 1,235,303,908 | 381,737 | 49,118,134 | 1,264,436,143 |

[^357]
## 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 1962 amounted to $\$ 8,165,620$ and earned surplus to $\$ 142,685$. The total amount made available to the Government of Saskatchewan since the beginning of government insurance operations in 1945 to Dec. 31, 1962, was $\$ 4,274,339$. Assets at the latter date were $\$ 17,805,774$, of which more than $\$ 11,000,000$ were invested in bonds and debentures issued by Saskatchewan schools, municipalities, hospitals, and the province. Over 600 independent insurance agents 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 limits of $\$ 10,000 / \$ 20,000$ for bodily injury and $\$ 5,000$ for 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 trucks to $\$ 49$ for late-model private passenger cars, and also vary for other types of motor vehicles depending on size and usage. From the inception of the Act in 1946 to Dec. 31, 1962, more than $\$ 61,000,000$ were 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. While 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 increase 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. 1096-1097) 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 27 shows the distribution of pension business for the years 1957-61.
2\%.-Distribution of Pension Business between Trusteed Funds, Life Insurance Company Annuities and Government Annuities, 1957-61


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 enables 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 28 shows the various types of trusteed funds and the income, expenditures and assets of the funds in 1960 and 1961.
28.-Trusteed Pension Plans, Income, Expenditures and Assets, 1960 and 1961

| Item |
| :---: |
|  |

[^358]In 1960 there were approximately 9,600 pension plans in operation in Canada. Table 29 gives a distribution of 8,920 of these plans by number of members covered. It is estimated that there were about 38,000 members in the remaining 680 plans, or an average of 56 members per plan.
29.-Distribution of Pension Plans by Number of Members Covered, 1960

| Number of Members | Plans | P.C. of Total | Number of Members | Plans | P.C. of Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. |  |  | No. |  |
| 1 to 14. | 5,037 | 56.5 | 700 to 799.. | 24 | 0.3 |
| 15 " 49. | 1,922 | 21.6 | 800 " 899 | 21 | 0.2 |
| 50 " 99. | 691 | 7.7 | 1,000" 900999. | ${ }_{101}^{22}$ | 0.3 1.1 |
| 100 " 199. | 478 | 5.4 | 2,000 " 2 2,999. | 35 | 0.4 |
| 200 " 299. | 206 | 2.3 | 3,000 " 3,999. | 26 | 0.3 |
| 300 " 399. | 110 | 1.2 | 4,000 " 4,999. | 13 | 0.1 |
| 400 " 499. | 98 | 1.1 | 5,000 or over. | 55 | 0.6 |
| 500 " 599. | 39 | 0.4 |  |  |  |
| 500 " 699. | 42 | 0.5 | Totals. | 8,920 | 100.0 |

In November 1960 there were $5,367,000$ non-agricultural workers in the Canadian labour force, $2,672,724$ or 50 p.c. of whom were employed by employers with an installed pension plan. These plans had $1,815,022$ members, representing 34 p.c. of the labour force; the remainder of the $2,672,724$ employees were outside the pension plan for one reason or another. Table 30 shows the employee and membership data of the plans for males and females separately.
30.-Employee and Membership Pension Plan Data, 1960

| Item | Males | Percentage of Male Employees | Females | Percentage of Female Employees | Total | Percentage of All Employees | $\begin{gathered} \text { Percentage } \\ \text { of } \\ \text { Total } \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  | Male | Female |
| Members.............. No. | 1,421,857 | 73.8 | 393,165 | 52.8 | 1,815,022 | 67.9 | 78.3 | 21.7 |
| Eligible employees who elected not to join. $\qquad$ | $193,926$ | 10.0 | 90,593 | 12.2 | $1,815,022$ 284,519 | 10.7 | 68.2 | 31.8 |
| Employees temporarily ineligible to join | 250,429 | 13.0 | 132,242 | 17.7 | 382,671 | 14.3 | 65.4 | 34.6 |
| Employees permanently ineligible to join ${ }^{1}$...... | 250,429 61,462 | 3.2 | 129,050 | 17.3 | 190,512 | 7.1 | 65.4 32.3 | 67.7 |
| Totals, Employees on Payroll......... No. | 1,927,674 | 100.0 | 745,050 | 100.0 | 2,672,724 | 100.0 | 72.1 | 27.9 |

[^359]In a pension plan the employer may make provision for an employee whose services are terminated before retirement to be credited with all or a portion of the contributions made by the employer on his behalf. The various degrees of vesting are as follows: (1) none; (2) immediate-all employer contributions are vested in the employee at the time they are paid; (3) deferred sudden-there is no vesting of employer contributions until the employee has fulfilled certain conditions, at which time all the employer contributions vest in the employee-vesting is usually determined on the number of years of service with the employer, the number of years of participation in the plan or the employee's age when his services are terminated, or any combination of these three factors; (4) deferred graduated-partial vesting commences when certain conditions as in (3) are fulfilled, with the scale of vesting graduated until it is complete.

Table 31 gives a distribution of the number of members of the 8,920 plans by the type of vesting.
31.-Distribution of Pension Plan Members by Type of Vesting, 1960

| Type of Vesting | Plans | $\begin{gathered} \text { Male } \\ \text { Members } \end{gathered}$ | Female Members | Total Members | Percentage |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. |  |
| None. | 330 | 428,231 | 150,430 | 578,661 | 31.1 |
| Immediate. | 2,612 | 72,748 | 15,405 | 88,153 |  |
| Years of service only.... | $\stackrel{2,925}{234}$ | ${ }^{610}{ }^{612} 225$ | 158, $864{ }^{1}$ | 769,0891 | 41.3 |
| Years of participation only | 2,334 | 131,535 | 23, 253 | 154,888 | 8.3 |
| Combination of service, participation, or age..... | 710 | 220, 158 | 51,164 | 271,322 | 14.6 |
| Totals. | 8,920 | 1,463,208 | 399,473 | 1,862,681 | 100.0 |

${ }^{1}$ Includes Federal Government employees covered under the Public Service Superannuation Act and members of the Armed Forces covered under the Canadian Forces Superannuation Act.

The first column in Table 32 shows the distribution of the 8,920 plans by any one or combination of two or more methods of underwriting or trusteeship. Some contributory plans (the employees are required to contribute) which provide for the vesting of employer contributions on termination of employment also give the terminated employee the option of taking a cash refund. By exercising the right to a cash refund, the terminated employee may be obliged to waive his rights to the vested employer contributions. The second and third columns show the distribution of the 8,920 plans, depending upon whether or not the terminated employee waives his vested rights if he elects to take a cash settlement. The table also shows the total employee and employer contributions paid into pension funds during 1960.

## 32.-Method of Underwriting, Waiver of Vesting and Employee and Employer Contributions, 1960

| Method of Underwriting | Plans | Waiver of Vesting |  | Employee Contributions in 1960 | $\begin{gathered} \text { P.C. } \\ \text { of } \\ \text { Total } \end{gathered}$ | Employer Contributions in 1960 | $\begin{aligned} & \text { P.C. } \\ & \text { of } \\ & \text { Total } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Yes | No |  |  |  |  |
|  | No. | No. | No. | \$ |  | \$ |  |
| Government annuities | 734 |  | 734 | 2,661,888 | 0.8 | 3,552,506 | 0.8 |
| Insurance company. | 6,400 | 3,294 | 3,106 | 58,045,675 | 17.3 | 68,572,350 | 14.7 |
| Trust company.. | 995 | 524 | 471 | 39,731,458 | 11.9 | 85,285, 959 | 18.2 |
| Individual trustees | 295 | 131 | 164 | 114,881, 831 | 34.3 | 163, 297, 999 | 35.0 |
| Miscellaneous..... | $16^{1}$ | 7 |  | 90,294,601 | 27.0 | 107,530,057 | 23.0 |
| Government annuities and insurance company. | 359 | 99 | 260 | 16,140,553 | 4.8 | 18,449,283 | 3.9 |
| Government annuities and trust company. | 24 | 10 | 14 | 4,167,284 | 1.2 | 4,877,330 | 1.0 |
| Government annuities and individual trustees. | 8 | 6 | 2 | 882,505 | 0.3 | 856,447 | 0.2 |
| Insurance company and trust company. | 45 | 28 | 17 | 2,537,344 | 0.8 | 4,567,047 |  |
| Insurance company and individual trustees. | 11 | 5 | 6 | 330,532 | 0.1 | 1,572,557 | 0.3 |
| Trust company and individual trustees. | 3 | 2 | 1 | 108,976 | - | 1,244,145 | 0.3 |
| Government annuities, insurance company and trust company. | 21 | 10 | 11 | 3,589,037 | 1.1 | 5,962,558 | 1.3 |
| Government annuities, insurance company and individual trustees. | 7 | 4 | 3 | 1,378,498 | 0.4 | 1,355,030 | 0.3 |
| Insurance company, trust company and individual trustees. | 2 | 1 | 1 | 1,595 | - | 6,217 | - |
| Totals. | 8,920 | 4,121 | 4,799 | 334,751,777 | 100.0 | 467,129,485 | 100.0 |

[^360]
## GHAPTER XXV.-DEFENCE OF GANADA



The interpretation of the symbols used in the tables throughout the Year Book will be found facing $p .1$ of this volume.

## 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. The Canadian Forces consist of three Services, the Royal Canadian Navy, the Canadian Army and the Royal Canadian Air Force. Each Service has an officer appointed as Chief of Staff who, subject to the regulations and under the direction of the Ministers, is charged with the control and administration of his Service. The Defence Research Board conducts research relating to the defence of Canada and also undertakes the development of or improvements in materiel. The Chairman, Chiefs of Staff Committee is responsible to the Minister for ensuring that all matters of joint defence and defence policy, in their widest sense, are carefully examined and co-ordinated before decisions are made.

The civilian administration of the Department is organized under the Deputy Minister and is constituted on a functional basis. The Deputy Minister maintains a continuing review and control over the financial aspects of operational policy, logistics, and personnel and administration. The Deputy Minister is assisted by an Associate Deputy Minister. In addition, there are four Assistant Deputy Ministers each of whom administers a division of the Deputy Minister's branch responsible for: administration and personnel; construction, engineering and properties; finance; and supply. Also responsible to the Deputy Minister are: the Controller General of Inspection Services, the Judge Advocate General, the Chief Secretary, and the Director of Public Relations.

[^361]A number of committees meet at regular intervals to consider and advise on joint issues. These include:-
(1) Defence Council.-Composed of the Minister of National Defence (Chairman), the Associate Minister (Vice Chairman), the Deputy Minister, the Chairman, Chiefs of Staff Committee, the three Chiefs of Staff, the Chairman, Defence Research Board, and the Associate Deputy Minister. Its purpose is to advise the Minister on administrative and other matters.
(2) Chiefs of Staff Committee.-Composed of the Chairman, Chiefs of Staff, the Chiefs of Staff of the three Armed Services and the Chairman, Defence Research Board. The purpose of the Committee and its subcommittees is to maintain a continuous review of all operational problems.
(3) Personnel Members Committee.-Composed of the Chief of Naval Personnel, the Adjutant-General, the Air Member for Personnel, the Assistant Deputy Minister (Finance) and a representative of the Chairman, Defence Research Board. The purpose of the Committee and its subcommittees is to examine personnel problems of the three Services with the general aim of achieving uniform personnel policies.
(4) Principal Supply Officers Committee.-Composed of the Chief Naval Technical Services, the Quartermaster-General, the Air Member for Technical Services, the Assistant Deputy Minister (Requirements) and a representative of the Chairman, Defence Research Board. The purpose of the committee and its subcommittees is to deal with common problems in the field of supply and logistics.

Canada-United States Committee on Joint Defence.-This committee is com posed 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 governments 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.

Liaison in Other Countries.-The Chairman, Chiefs of Staff, who is the Canadian military representative in the North Atlantic Treaty Organization, is responsible for co-ordinating 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 Joint Staff (London) representing the three Services and the Defence Research Board in Britain, the Chairman of which is the principal military adviser to the Canadian High Commissioner in London, the principal military adviser to the Permanent Canadian Delegate to the NATO Council and the Canadian National Military Representative at SHAPE; (2) the Canadian Joint Staff (Washington) representing the three Services 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 at SACLANT Headquarters and the Canadian member of the NATO Military Committee in Permanent Session; and (3) 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.

Mutual Aid.-Canada's contributions to NATO are outlined on pp. 152-153.
Rates of Pay and Allowances.-The entire pay structure for comparable ranks in the different Services is on a uniform basis. Monthly rates of pay and allowances effective Oct. 1, 1962 are given in Table 1.
1.-Monthly Rates of Pay and Allowances for the Canadian Armed Forces, Effective Oct. 1, 1962

| $\begin{aligned} & \text { Royal Canadian } \\ & \text { Navy } \end{aligned}$ | Canadian Army | Royal Canadian Air Force | Basic Pay | ProgressivePay |  |  |  |  | GroupPayforTradesmenandSpecialists $^{1}$ | Subsistence Allowance |  | Ration <br> Allowance | Marriage Allow-ance anc | Separated Family's <br> Allowance (personnel not in married quarters and with children) |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Years in Rank |  |  |  |  |  | Personnel <br> not in Receipt of <br> Marriage <br> Allowance | PersonnelinReceiptofMarriageAllowance |  |  | In. | Not in |
|  |  |  |  | 2 | 3 | 4 | 6 | 8 |  |  |  |  |  | sistence Allowance | sistence Allowance |
|  |  |  | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ |
| Ordinary Seaman (under 17 years) | Private (recruit under 17 years) | Aircraftman 2 (under 17 years) | 60 | - | - | - | - | - | - | 65 | - | 30 | - | - | - |
| Ordinary Seaman (entry) | Private (recruit) | Aircraftman 2 | 112 | - | - | - | - | - | Ranges <br> from ${ }^{*}$ 12-90 | 65 | 100 | 30 | 30 | 65 | 100 |
| Ordinary Seaman (trained) | Private (trained) | Aircraftman 1 | 119 | - | - | - | - | - |  | 65 | 100 | 30 | 30 | 65 | 100 |
| Able Seaman | Private <br> (higher rate) | Leading Aircraftman | 138 | - | 21 | 27 | 27 | 7 |  | 65 | 100 | 30 | 30 | 65 | 100 |
| - | Lance-Corporal | - | 189 | - | - | - | - | - |  | 65 | 100 | 30 | 30 | 65 | 100 |
| Leading Seaman | Corporal | Corporal | 195 | 4 | - | 4 | 4 - |  | according <br> to group | 65 | 100 | 30 | 30 | 65 | 100 |
| Petty Officer 2 | Sergeant | Sergeant | 219 | 5 | - | 5 | 5 - |  |  | 75 | 105 | 30 | 30 | 75 | 105 |
| Petty Officer 1 | Staff Sergeant | Flight Sergeant | 251 | 6 | - | 6 | 6 - |  |  | 85 | 105 | 30 | 30 | 85 | 105 |
| Chief Petty Officer 2 | Warrant Officer 2 | Warrant Officer 2 | 289 | 7 | - | 7 | 7 - |  |  | 85 | 105 | 30 | 30 | 85 | 105 |
| Chief Petty Officer 1 | Warrant Officer 1 | Warrant Officer 1 | 324 | 10 | - | 10 | 10 - |  |  | 95 | 110 | 30 | 30 | 95 | 110 |

Paid to other ranks only.
1.-Monthly Rates of Pay and Allowances for the Canadian Armed Forces, Effective Oct. 1, 1962—concluded

| $\begin{aligned} & \text { Royal Canadian } \\ & \text { Navy } \end{aligned}$ | Canadian Army | Royal CanadianAir Force | $\begin{aligned} & \text { Basic } \\ & \text { Pay } \end{aligned}$ | ProgressivePay |  |  |  |  | GroupPayforTradesmenandSpecialists ${ }^{1}$ | Subsistence Allowance |  | Ration <br> Allowance | Marriage Allow-ance anc | Separated Family's Allowance (personnel not in married quarters and with children) |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Years in Rank |  |  |  |  |  | Personnel not in Receipt of <br> Marriage Allowance | PersonnelinReceiptofMarriageAllowance |  |  | In | Not in |
|  |  |  |  | 2 | 3 | 4 | 6 | 8 |  |  |  |  |  | sistence Allowance | sistence Allowance |
|  |  |  | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ |
| ROTP Cadet | ROTP Cadet | ROTP Cadet | 73 | - | - | - | - | - | - | 65 | - | 30 | - | - | - |
| Acting Sub-Lieutenant | Second Lieutenant | Pilot Officer | 235 | - | - | - | - | - | - | 75 | 110 | 30 | 40 | 75 | 110 |
| Sub-Lieutenant | Lieutenant | Flying Officer | 331 | - | 40 | - | 15 | - | - | 90 | 125 | 30 | 40 | 90 | 125 |
| Commissioned Officer | Officer commissioned from S/Sgt or above | Officer commissioned from F/Sgt or above | 408 | 15 | - | 15 | 15 | 15 | - | 75-951 | 110-125 ${ }^{2}$ | 30 | 40 | 75-95² | 110-125 ${ }^{2}$ |
| Lieutenant | Captain | Flight Lieutenant | 428 | 20 | - | 20 | 20 | 20 | - | 95 | 125 | 30 | 40 | 95 | 125 |
| LieutenantCommander | Major | Squadron Leader | 555 | 25 | - | 25 | 25 | 25 | - | 113 | 135 | 30 | 40 | 113 | 135 |
| Commander | Lieutenant-Colonel | Wing Commander | 709 | 25 | - | 25 | 25 | 25 | - | 126 | 150 | 30 | 40 | 126 | 150 |
| Captain | Colonel | Group Captain | 899 | 40 | - | 40 | - | - | - | 139 | 165 | 30 | 40 | 139 | 165 |
| Commodore | Brigadier | Air Commodore | 1,164 | 50 | - | - | - | - | - | 153 | 180 | 30 | 40 | 153 | 180 |
| Rear-Admiral | Major-General | Air Vice-Marshal | 1,349 | - | - | - | - | - | - | 165 | 195 | 30 | 40 | 165 | 195 |

${ }^{1}$ Paid to other ranks only.
2 Depending on rank on promotion.

The allowances shown in Table 1 are explained briefly as follows.
Subsistence Allowance.-This allowance is granted whenever rations and quarters are not provided. A married man living with his family uses his subsistence allowance for their maintenance as well as his own.

Ration Allowance.-A ration allowance is granted when quarters are available but rations are not provided. It is not payable concurrently with subsistence allowance.

Marriage Allowance.-The amount of this allowance is $\$ 30$ a month for men and $\$ 10$ a month for officers, subject to a reduction of $\$ 10$ a month where permanent married quarters are occupied or $\$ 2.50$ a month where temporary married quarters are occupied. All ranks may draw this allowance upon marriage provided the initial training period has been completed and the age of 21 years has been attained by men and 23 years by officers.

Separated Family's Allowance.-An officer or man while separated from his dependants for any of various reasons (i.e., movement of dependants prohibited, illness of dependants, lack of suitable accommodation), on being moved other than temporarily may be entitled to separated family's allowance at a rate and for a period depending on circumstances (i.e., rank, reason for separation, whether or not he has children, whether or not his family is accommodated in married quarters, whether or not he is provided with quarters and rations). The rates listed are the maximum.

In addition to the above, Foreign Allowances of various kinds are granted to officers and men posted for duty outside Canada to compensate for additional living expenses or hardships incurred; these vary with rank, appointment and location. Isolation Allowances are granted to officers and men serving at specified isolated posts in Canada at rates depending upon location and circumstances. Outfit Allowances and Clothing Credits are as follows: Officers receive a single payment of $\$ 450$ on appointment and Warrant Officers Class I, $\$ 270$; men receive a free issue of clothing when they join and thereafter a monthly clothing credit or allowance of $\$ 7$, Navy Petty Officer 1st class and above receive $\$ 8$, and women $\$ 8$. An Aircrew Allowance of $\$ 75$ a month is paid to an officer or man undergoing fying training. For qualified aircrew this allowance may be increased to $\$ 150$, depending on rank, if filling an appointment requiring active and continuous flying duties, and to $\$ 100$, depending on rank, for maintaining proficiency. Submarine Allowance is granted an officer or man undergoing submarine training or filling an appointment in a submarine; the allowance varies from $\$ 65$ to $\$ 115$ a month depending on rank. An officer or man actively engaged or undergoing training as a parachutist or on flying or submarine duty and not entitled to aircrew allowance or submarine allowance is paid a Risk Allowance at the rate of $\$ 30$ a month. Medical, Dental and Legal Officers are granted extra allowances according to rank.

## Subsection 1.-The Royal Canadian Navy

Role and Organization.-The role of the Royal Canadian Navy, in support of Canada's defence policy, is to maintain sea communications, to defend Canada against attack from the sea, to contribute to the collective defence of the NATO area against attack from the sea and to contribute naval forces to the United Nations as may be required. It is substantially an anti-submarine (A/S) role.

The Royal Canadian Navy comes under the central authority of the Chief of the Naval Staff at Naval Headquarters in Ottawa. The Flag Officer Atlantic Coast, at Halifax, N.S., and the Flag Officer Pacific Coast, at Esquimalt, B.C., exercise operational and administrative command of ships and establishments within the Atlantic and Pacific Coast Commands. The Flag Officers also hold the additional appointments of Maritime Commander Atlantic and Maritime Commander Pacific, respectively. As such, each is responsible for anti-submarine operations involving RCN and RCAF forces in his Command. The 21 Naval Divisions of the Royal Canadian Naval Reserve are under the over-all command of the Commanding Officer Naval Divisions, with headquarters at Hamilton,

Ont. There are naval staffs in London, England, and Washington, D.C., U.S.A., to maintain liaison with the Royal Navy and the United States Navy. As a result of Canada's NATO commitments, officers of the Royal Canadian Navy serve on the staffs of: the Supreme Allied Commander, Atlantic, at Norfolk, Va., in the United States; the Com-mander-in-Chief, Eastern Atlantic Area, at Northwood in Britain; and the Commander-in-Chief, Western Atlantic Area, at Norfolk, Va. The Flag Officer Atlantic Coast holds the NATO appointment of Commander, Canadian Atlantic Sub-Area.

The strength of the RCN on Mar. 31, 1963, was 21,476 officers men and women in the regular force and 3,583 in the reserve force.

Operations at Sea, 1962-63.-During 1962, ships of the RCN spent more than 7,000 days at sea and logged over $1,200,000$ nautical miles on exercises, training cruises and patrols. During the same year naval aviators flew over $5,000,000$ nautical miles in 40,000 air hours, and made 4,269 day and night deck landings on board HMCS Bonaventure.

At mid-1963, three new Mackenzie class destroyer escorts had joined the fleet and three others were under construction in Canadian shipyards. A 22,000-ton fleet replenishment ship was nearing completion and the fitting of variable depth sonar and helicopter handling facilities in the first two St. Laurent class destroyer escorts was well under way. The first of nine CHSS-2 anti-submarine helicopters had been accepted. These will eventually replace the HO4S-3's and will be operated from the aircraft carrier Bonaventure and destroyer escorts.

Training.-At the end of 1962, the Navy had approximately 1,100 men taking new-entry training, 1,200 men undergoing other training in the various trade areas, and 532 cadets and 175 officers on courses. The major training establishments of the RCN are HMCS Cornwallis near Digby, N.S.; HMCS Shearwater near Dartmouth, N.S.; HMCS Stadacona at Halifax, N.S.; HMCS Hochelaga at LaSalle, Que.; HMCS Gloucester near Ottawa, Ont.; and HMCS Naden at Esquimalt, B.C.

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 or a Canadian university while 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.

Men and women entering the RCN receive their basic training at HMCS Cornwallis; the courses are normally of 15 weeks duration.

A University Naval Training Division program is conducted to provide well-trained junior officers for the RCN and the RCN Reserve. The cadets are required to complete three winter-training periods, two summer-training periods and certain specified courses. In March 1963, there were 596 UNTD cadets at 26 Canadian universities and colleges.

Royal Canadian Naval Reserve.-The recruiting and training of officers and men of the RCN Reserve is conducted mainly through 21 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>Charlottetown, P.E.I., HMCS Queen Charlotte<br>Halifax, N.S., HMCS Scotian<br>Saint John, N.B., HMCS Brunswicker<br>Quebec, Que., HMCS Montcalm<br>Montreal, Que., HMCS Donnacona<br>Toronto, Ont., HMCS York<br>Ottawa, Ont., HMCS Carleton<br>Kingston, Ont., HMCS Cataraqui<br>Hamilton, Ont., HMCS Star

Windsor, Ont., HMCS Hunter<br>London, Ont., HMCS Prevost<br>Port Arthur, Ont., HMCS Griffon<br>Winnipeg, Man., HMCS Chippawa<br>Regina, Sask., HMCS Queen<br>Saskatoon, Sask., HMCS Unicorn<br>Calgary, Alta., HMCS Tecumseh<br>Edmonton, Alta., HMCS Nonsuch<br>Vancouver, B.C., HMCS Discovery<br>Victoria, B.C., HMCS Malahat<br>Prince Rupert, B.C., HMCS Chatham

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 164 authorized corps. These are divided into seven Sea Cadet areas, supervised by 16 naval officers responsible to the Commanding Officer Naval Divisions. Instruction is carried out by RCSCC officers. Two RCSCC training establishments-Acadia 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 Sea Cadets received seven-week training courses at naval establishments. Sea experience is provided for Cadets throughout the year in various types of ships of the RCN. In March 1963 the strength of the Corps was 1,114 Sea Cadet officers and 10,588 Sea Cadets.

## Subsection 2.-The Canadian Army

Organization.-Army Headquarters at Ottawa is organized into four separate Branches. The General Staff Branch deals with all matters affecting the fighting efficiency of the Army, the Adjutant-General Branch deals with all problems affecting the soldier as an individual, the Quartermaster-General Branch is responsible for supply and the Comptroller-General Branch is responsible for financial management. The senior appointment at Army Headquarters is the Chief of the General Staff who, through the Heads of the four Branches, directs all activities of the Canadian Army. For command and control, Canada is divided into Commands and Areas with Headquarters as follows:-


The Canadian Army comprises the Canadian Army (Regular) and the Reserves. The Canadian Army (Regular) consists of a field force of four Infantry Brigade Groups, headquarters and administrative, training and logistic support units. One of the Infantry Brigade Groups is in Europe with the NATO Force and is under command of the Supreme Allied Commander in Europe. The Reserves include the Canadian Army (Militia), the Regular Reserve, the Supplementary Reserve, the Canadian Officers' Training Corps, the Cadet Services of Canada and the Reserve Militia. Additional to but not an integral part of the Canadian Army are the Services Colleges, officially authorized cadet corps, rifle associations and clubs.

The strength of the Canadian Army (Regular) at Mar. 31, 1963 was 49,760 officers and men and the strength of the Canadian Army (Militia) was 53,872 , including personnel taking the special militia training courses.

Operations in 1962.-In fulfilment of military obligations under the North Atlantic Treaty, Canada has continued to provide ground forces for the defence of Western Europe.

The 4th Canadian Infantry Brigade Group, the major units of which are the Fort Garry Horse, the 3rd Regiment Royal Canadian Horse Artillery, No. 1 Surface-to-Surface Missile Battery, 1st Battalion, The Royal Canadian Regiment, the 1st Battalion, The Queen's Own Rifles of Canada, and the 2nd Battalion, The Black Watch (Royal Highland Regiment) of Canada, constituted the Canadian Army contribution to NATO at the end of the year. The headquarters of the Brigade Group is at Soest, and married quarters are located in the vicinity of Soest, Werl, Hemer and Iserlohn.

The Canadian Army continued to provide forces in support of United Nations operations as follows. (1) A force of approximately 870 officers and men forms a part of the United Nations Emergency Force in the Middle East; its tasks are the patrolling of a sector of the Egypt-Israel International Frontier, the provision of engineer services, communications, stores, transport and workshop services, and postal facilities for the Force. (2) In the Congo, 57 Canadian Signal Unit, with a strength of approximately 310 officers and men, supports the United Nations force by the provision of communications, staff officers and other headquarters personnel; the bulk of the Unit is stationed in Leopoldville, with signal detachments at subordinate headquarters throughout the country. (3) Canadian Army contributions to United Nations commissions include some 30 officers employed in Kashmir, Korea and Palestine.

A specially trained and equipped infantry battalion is maintained on standby in Canada to provide at short notice a force for service in support of the United Nations in any part of the world. In addition to its United Nations commitments, the Canadian Army, as a result of Canadian participation in the International Commissions for Supervision and Control in Viet Nam, Cambodia and Laos continues to provide approximately 75 officers and men for truce supervisory duties in Indo-China. During 1962, a Canadian Armed Forces Training Team was established in Ghana to assist in the training of the Ghana Armed Forces. The Canadian Army provides 23 of the members of this Team, the Royal Canadian Navy three, and the Royal Canadian Air Force four. An officer of the Royal Canadian Engineers is employed on map-making duties in Nigeria. A number of officer cadets from Nigeria and from Trinidad and Tobago have received training in Canadian Army schools.

Survival Operations.*-Since Sept. 1, 1959 the Army has been charged with certain civil defence responsibilities and is supported in this assignment by the Royal Canadian Navy and the Royal Canadian Air Force, the Defence Research Board providing assistance in research. (See also pp. 1121-1123).

A National Survival Attack Warning System has been established to give warning of an impending attack. A Canadian Army Liaison Officer is stationed at NORAD Headquarters and Canadian Army Sections are located in the appropriate NORAD Regional Headquarters in the United States and at Northern NORAD Regional Headquarters at North Bay. All of these have access to early warning information which enables them to keep a watch over friendly and enemy air traffic over Canada and the northern United States. Warning centres near Ottawa and in each province are manned 24 hours a day. Dissemination of alerts to the general public will be by siren signals and radio broadcasts over emergency networks in the provinces.

A Nuclear Detonation and Fallout Reporting System is being installed which, in the event of a nuclear detonation, will provide information needed to determine the areas likely to be affected by fallout. Information from this system will be passed to the public via the National Survival Attack Warning System. Provision has been made for an exchange of nuclear detonation and fallout data with the United States.

The Army also has the responsibility for re-entry into areas damaged by nuclear detonations or contaminated by serious radioactive fallout, decontamination work in those areas, and the rescue and provision of first aid to those trapped or injured. A headquarters responsible for planning re-entry operations has been established in the vicinity of each

[^362]of 16 most probable target areas. Military personnel available will be used to form unit cadres which will employ large numbers of civilian volunteers to form rescue forces. These units will provide basic first aid and rescue, decontamination, casualty sorting, and certain traffic control and other services. Assistance and instruction will be given to those who remain in the damaged areas or in areas subjected to serious radioactive fallout. Planning is conducted in conjunction with all levels of civil government and agencies such as police, fire and health services.

Pamphlets have been distributed outlining the operating procedures for damage and casualty estimation and procedures have been evolved by which government agencies may use information provided by the Army to determine the resources remaining after an attack.

Planning of emergency communications has been completed by the Army and construction of the various stations is in progress

Training.-Training Canadian Army (Regular).-The policy of training is determined at Army Headquarters. General Officers Commanding Commands implement the training policies within their Commands except for that conducted at Army and corps schools under the supervision of Army Headquarters. During 1962, the basic training of 4,834 recruits and the corps training of officers and men of the Canadian Army was carried out at regimental depots, units and corps schools, and 9,736 personnel attended courses at the schools of instruction; 253 officers completed promotion qualification examinations for the rank of major and 138 officers for the rank of captain; six officers passed the entrance examinations for the Royal Military College of Science; 51 officers attended the Canadian Army Staff College and five commenced courses at Commonwealth Staff Colleges. Qualifying courses for junior NCO's were conducted under General Officers Commanding Commands and senior NCO courses were conducted at corps schools. Officers from the RCN and the RCAF as well as officers from Australia, Britain, Denmark, France, India, Italy, Pakistan, Turkey and the United States attended courses at Canadian Army schools of instruction.

English and French language training, which is available to all ranks of the Canadian Army, was conducted by Commands and AHQ. The R22eR Depot (Language Training Company) conducted six-month French language courses for English-speaking officers and NCO's and a number of French-speaking recruits and potential NCO's received English language training.

Trade and specialty training is given at corps schools and units. When required, the facilities of civilian schools are used to supplement training at Army establishments. Under an apprentice training program selected young men are trained as soldier tradesmen and prepared for advancement to senior non-commissioned ranks. During 1962 an additional 460 apprentices were enrolled and 44 civilian teachers were employed to provide academic instruction for about 800 apprentice soldiers. Academic credits are obtained from the educational authorities of the province where the training is conducted.

The training of the Field Force Canada airborne/air transportable element continued throughout 1962. Airborne continuation training was carried out by each unit in conjunction with unit exercises. Units carried out exercises during the winter 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 Fort Churchill, Man. Collective training for units in Canada was carried out during the summer months at Camp Gagetown, N.B., and Camp Wainwright, Alta. All arms training comprised sub-unit and unit training and culminated in exercises at the Brigade Group level.

The Regular Officer Training Plan (ROTP.).-The Regular Officer Training Plan, under which selected students are trained for commissions in the Canadian Army (Regular), is in effect at the three Canadian Services Colleges and at all Canadian universities and affiliated colleges that have contingents of the COTC. Students enrol in the Canadian Army (Regular) with a special rate of pay; tuition and essential fees are paid and grants given for the required books and instruments. During the year ended Mar. 31, 1963,

104 of these sponsored students graduated and were commissioned. Training consists of military studies, drill and physical training during the academic year; the summer term is devoted to practical training at military establishments.

The Canadian O.ficers' Training Corps (COTC).-Units of the Canadian Officers' Training Corps are maintained at Canadian universities to produce primarily, from among university undergraduates, officers for the reserve components of the Army. University graduates who have been members of the Canadian Officers' Training Corps are also eligible for commissions in the Canadian Army (Regular). Members of the COTC undertake training similar to that given members of the ROTP. During the year ended Mar. 31, 1963, 15 who had trained with the COTC were awarded commissions in the Canadian Army (Regular).

Canadian Army (Militia).-The role of the Militia is to prepare for survival operations, complement the active force and provide assistance for internal security on mobilization. The training aim is to establish a nucleus of trained or partially trained personnel and units to meet these requirements. In 1962 funds were provided to permit an average of 40 days training for all ranks, plus up to 70 days for key Militia personnel. This included seven days of summer training for selected personnel by attachment to Regular Army Units, attendance at command camps and in-job training at establishments and headquarters. During the summer 31,101 all ranks, including members of the Canadian Women's Army Corps and high school students, participated in survival and military training. At Mar. 31, 1963, Militia membership totalled 53,872 all ranks.

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). A total of 113 officers and men are employed continuously on these duties.

Training and administration of Army Cadets are the responsibility of officers of the Cadet Services of Canada, a sub-component of the reserves, and civilian instructors. As at Mar. 31, 1963, a total of 2,396 cadet instructors were engaged in these activities. Cadets take a progressive three-year course in basic military subjects at local headquarters and selected cadets are given training at summer camps. In 1962, 5,389 cadets attended seven-week trades and specialists courses at summer camps at Aldershot, N.S., Farnham, Que., Camp Borden and Ipperwash, Ont., and Vernon, B.C.; 975 attended two-week junior leader and special courses at Camp Borden, Ont., and Clear Lake and Rivers, Man.; 214 Master and First Class cadets attended the National Cadet Camp, Banff, Alta., for four weeks; 377 cadet instructors attended qualifying courses up to seven weeks, and another 467 were employed in training and administrative duties at summer camps. As at Mar. 31, 1963, a total of 75,094 cadets were enrolled in 507 corps.

## Subsection 3.-The Royal Canadian Air Force

Organization.-The RCAF is controlled from Air Force Headquarters at Ottawa, which is responsible for planning, policy and administration of the Regular and Reserve components of the RCAF. The Headquarters organization comprises four major Divisions -Plans and Operations, Technical Services, Personnel and Comptroller. On Mar. 31, 1963, the major RCAF formations and their Headquarters locations were as follows:-

Formations
Headquarters
Air Defence Command
5 Air Division.
St. Hubert, Que. Victoria, B.C.

Air Transport Command Metz, France

Air Materiel Command Trenton, Ont.

Maritime Air Command. Rockcliffe, Ont.

Training Command
Halifax, N.S. Winnipeg, Man.

The organization included 22 flying squadrons of the RCAF Regular and 11 flying squadrons of the RCAF Auxiliary. The Auxiliary squadrons performed an emergency and rescue role. Five of the Regular squadrons contributed to the air defence of the Canada-United States regions; eight squadrons were assigned to No. 1 Air Division in Europe; four squadrons were required for RCAF transport operations at home and abroad; four maritime squadrons operated in conjunction with other forces for the defence of Canada's East and West Coasts; and one reconnaissance squadron carried out aerial photography and reconnaissance in Canada.

The strength of the RCAF at Mar. 31, 1963 was 52,458 officers and men in the Regular Force and 2,223 in the Auxiliary Air Force.

Operations in 1962.-The RCAF contribution to the air defence of North America, consisting of five CF101B squadrons, two Bomarc squadrons and the many radar sites, continued under the operational control of North American Air Defence Command (NORAD). No. 1 Air Division, Canada's NATO contribution in Europe, commenced the changeover from air defence squadrons using $F 86$ and $C F 100$ aircraft to tactical squadrons employing CF104 aircraft. By the end of March 1963, all four CF100 squadrons and two $F 86$ squadrons were disbanded and two CF104 squadrons were formed.

Air Defence Command continued its planned build-up of the Pinetree Line radar system, and continued to operate the Distant Early Warning Line (DEW) and the MidCanada Line (MCL) as an integral part of NORAD. The RCAF continued the takeover of the U.S.-financed and manned radar sites in accordance with the government agreement. The Ground Observer Corps continued operations in the North as a supplement to the DEW radar system.

The RCAF Maritime Air Command during 1962 contributed four land-based maritime squadrons to the Maritime Defence of North America. Three of these squadrons, based on the East Coast, have been completely 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 also conducted throughout the period. These three squadrons and a Neptune aircraft squadron on the West Coast participated in a number of national, international and NATO anti-submarine exercises conducted throughout the year. Daily patrols and surveillance of ocean areas adjacent to the Canadian coastline were also maintained.

Air Transport Command continued to provide support to the Air Division and to the Army Brigade in Europe using its new Yukon aircraft. Airlift support was also given to the United Nations Emergency Force Middle East and the Organization des Nations Unies du Congo using Yukon and North Star aircraft. In addition, a flying unit operating Caribou and Otter aircraft was maintained for local employment in Egypt in support of UNEF. In Canada, ATC aircraft airlifted DND personnel and cargo over air routes from coast to coast. C119 were used for paratroop training of the Canadian Army, and 408 Squadron carried out routine reconnaissance flights in the Arctic Archipelago and photographic missions for the Department of National Defence.

During the year, the RCAF continued to provide search and rescue services in Canadian areas of responsibility. Of the 36 major searches conducted, 31 were for civil aircraft and five were for military aircraft. In addition, there were 11 major marine searches and 371 mercy flights. The total time for search and rescue operations was 8,222 hours.

Training.-During the year ended Mar. 31, 1963, the RCAF provided training for approximately 4,500 officers and airmen to replace releases, meet increased establishments and assume new appointments resulting from modernization of equipment.

Approximately 800 entrants whose native language is French were given from 10 to 21 weeks of instruction in the English language in schools located at St. Jean, Que., and Centralia, Ont. Basic training qualified personnel to do the rather simple but vital jobs
in the RCAF; conversion and advanced training qualified personnel to perform more complex jobs and to assume increased responsibilities. During the year, training continued in the operation and maintenance of the SAGE and Bomarc systems which have become operational in the RCAF. To keep pace with rapid technological developments, a number of officers and airmen attended short familiarization courses on guided missiles and space technology at Clinton, Ont.; some attended brief familiarization courses on computers and other electronic equipment at Clinton; a few attended specialized courses with industrial firms; and a few took postgraduate courses, mainly at Canadian universities, to qualify for highly specialized positions.

Pilot and radio navigator trainees received training at the Central Officers School at Centralia, Ont. Pilot trainees were given primary flying training at Centralia, basic training at Moose Jaw, Sask., or Penhold, Alta., and advanced flying training at Portage la Prairie, Man., or Gimli, Man. Radio navigators received training at Winnipeg, Man. Under bilateral agreements, 45 Danish and 30 Norwegian nationals entered training as pilots. About 30 Canadian Army officers received a 70-hour flying training course at Centralia and 30 RCN personnel received advanced twin-engine training at Saskatoon, Sask., and Rivers, Man.

Formal trade courses for tradesmen and technicians and newly commissioned nonflying list officers in aeronautical engineering, armament, supply, telecommunications and flying control were conducted at RCAF technical schools in Ontario located at Camp Borden, Centralia and Clinton. Aircraft system trainers were used extensively to support technician and aircrew training programs at field technical training units and operational training units. Advanced personnel, both Regular and Reserve, were given assistance in a wide range of subjects to help them improve in job proficiency and to qualify for higher trade groupings. Semi-annual trade examinations were written under the direction of the Training Standards Establishment located at Trenton, Ont.

RCAF Reserve.-The active sub-components of the RCAF Reserves are designated as the Auxiliary and the Primary Reserve. Eleven Auxiliary Flying Squadrons, equipped with transport aircraft, are maintained to carry out, in the event of an emergency, air operations in support of military and civilian requirements and to carry out air search and transport operations within their capabilities. Twelve Auxiliary Medical Units and eight Technical Training Units are also maintained. The Primary Reserve is concerned mainly with the training of members of the University Reserve Training Plan (URTP). Other Primary Reserve components are Air Cadet Officers (ACO) and Manning Support Officers.

Each summer some 300 first-year URTP university undergraduates attend an off cers' training course at the Reserve Officers School at Centralia, Ont. Following this initial training, cadets in the aeronautical engineering, telecommunications, construction engineering, armament, mobile support equipment, supply, accounts, and administration branches commence basic training at RCAF training schools while cadets in the air services, medical, chaplain and personnel branches are employed at Regular Force units on contact training. Second-year and third-year cadets continue with formal or contact training commenced in previous years.

Manning Support Officers are employed for a minimum of 15 or a maximum of 30 days during each fiscal year on Career Counselling duties at RCAF Recruiting Units.

Royal Canadian Air Cadets.-Air cadet activities are sponsored and administered by the Air Cadet League of Canada, a voluntary civilian organization. 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 alertness and discipline. The RCAF works in partnership with the League and provides training personnel, syllabi and equipment.

The authorized ceiling of cadet enrolment is 28,000 and the strength at Mar. 31, 1963 was approximately 26,900 attached to 347 squadrons across Canada. Cadet training is carried out in more than 290 communities from Newfoundland to British Columbia.

During the summer of 1962, camps were held at RCAF Stations at Greenwood, N.S., St. Jean, Que., Trenton, Ont., and Sea Island, B.C., attended by over 7,000 cadets together with officers and instructors. A seven-week course for senior leaders was held for 240 cadets at RCAF Station, Camp Borden, Ont. Under the International Exchange Visits Program for 1962, sponsored jointly by the RCAF and the Air Cadet League, 58 cadets were exchanged with Britain, the United States, Denmark, the Netherlands, Norway, Sweden, Belgium, France, West Germany, Italy and Israel.

About 250 senior air cadets receive flying training annually at flying clubs through scholarships provided by the RCAF and additional scholarships are awarded by the Air Cadet League and other organizations, which in 1962 numbered 109.

## Subsection 4.-The Defence Research Board

The Defence Research Board, established on Apr. 1, 1947, provides scientific assistance and advice to the Canadian Forces. It consists of a full-time chairman and vice-chairman, five ex officio members and nine other appointed members. The ex officio members are the Chiefs of Staff of the three Armed Services, the Deputy Minister of National Defence and the President of the National Research Council. 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 group and nine research laboratories, and liaison offices at London, England, and Washington, U.S.A. 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 a fully integrated and permanent part of the defences of the country. The Chairman has the status of a Chief of Staff and is a member of the Chiefs of Staff Committee and 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 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 nine 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 propellants, telecommunications, geophysical studies of the Arctic, 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 industry for research in selected fields.

Research on maritime warfare problems, particularly 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 involves exploration of the ionosphere with ground-based equipment, with rockets and with satellites, and the applications of the science of electronics to military problems. The Defence Research Northern Laboratory, Fort Churchill, Man., conducts a variety of experiments requiring an Arctic environment including studies of the aurora borealis, communications experiments and rocket firings. Research on the defensive aspects of chemical, biological and atomic weapons is carried out at three Defence Research Board establishments-the Defence Research Chemical Laboratories at Ottawa, Ont., the Suffield Experimental Station at Ralston, Alta., and the Defence Research Kingston Laboratory at Barriefield, Ont.

The Defence Research Medical Laboratories near Toronto are concerned with biosciences 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 a headquarters group which conducts long-range scientific analyses of future defence problems. Trained operational research scientists are provided by the Board to the operational research teams in the three Armed Services.

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.

## Section 2.-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 Collège 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. The organization and training give cadets the opportunity to command and to exercise judgment.

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.

Academic requirement for admission to the first year at the Royal Military College and Royal Roads is senior matriculation (or its equivalent) in the following subjects: English, physics, mathematics (algebra, geometry and trigonometry), chemistry and either history or a language, preferably French. French-speaking candidates having a B.A. degree from a classical college may be accepted directly into the first year at Collège Militaire Royal. For admission to the preparatory year at that institution, the academic requirement is junior matriculation (or its equivalent) in English, French, algebra, geometry, physics and chemistry, although consideration is given candidates who do not possess the standing in French. Candidates from the classical colleges require at least sixth-year standing.

To be accepted, a candidate must be single, a Canadian citizen or British subject normally resident in Canada, and physically fit in accordance with the medical standards of the Service in which he enrols. 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 his 16th but not his 20th birthday on Jan. 1 of the year of entry. Personal interviews and medical examinations of candidates are carried out by Service Boards located at various centres across Canada.

Most cadets entering the Services Colleges enrol under the Regular Officer Training Plan. Applicants accepted for entry enrol according to their choice, as naval cadets in the Royal Canadian Navy, as officer cadets in the Canadian Army or as flight cadets in the Royal Canadian Air Force. Costs of tuition, board, lodging, uniforms, books, instruments and other essential fees are borne by the Department of National Defence and cadets are paid at the rate of $\$ 63$ a month. On successfully completing their academic and military training, cadets are granted permanent commissions in the Regular Force but may, if they so wish, apply for release after three years of service following completion of academic training.

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. 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 1962-63 academic year, 1,102 cadets were in attendance at the Services Colleges, 495 of them at the Royal Military College, 212 at Royal Roads and 395 at Collège Militaire Royal de Saint-Jean. Of the total, 263 were enrolled in the Navy, 411 in the Army and 428 in the Air Force.

Staff Training Colleges.-The Canadian Army Staff College at Kingston, Ont., trains officers for staff appointments. The course is 21 months in duration with a student intake every second year. 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. The system of instruction is based upon the study of précis and other references, demonstrations and lectures, and indoor and outdoor exercises. Aside from purely military subjects, the curriculum includes national survival, research and development, world affairs and lectures by prominent guest speakers.

The Royal Canadian Air Force College at Armour Heights in Toronto, Ont., is a permanent establishment consisting of a Staff College for senior officers and a Staff School for junior officers. The former affords professional education for officers normally of

Squadron Leader and Wing Commander ranks, preparing them to assume higher appointments. The directing staff selected from the Royal Canadian Air Force is augmented by an officer from each of the Royal Canadian Navy, the Canadian Army and the Royal Air Force. The student body, in addition to Royal Canadian Air Force officers, has ten representatives from the Royal Canadian Navy and one or two from each of the Canadian Army, Royal Air Force and United States Air Force. The College and School courses are designed to assist the student to think logically and express his ideas with precision, both orally and in writing; to know his Service and understand the employment of air forces; to keep abreast of scientific and technical developments that may affect the employment of air forces; and to gain a perspective of national and international problems. Lecturers are drawn, when desirable, from industry, the Armed Forces, the diplomatic corps and universities. Instructional visits are made to commercial and military establishments in Canada and abroad.

The National Defence College at Kingston, Ont., is a senior defence college providing 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 government departments attend, as well as a few representatives from industry. An extensive lecture course is provided, with lecturers chosen from among the leaders in various fields in Canada, the United States, Britain and other countries. In addition, educational tours and visits to certain parts of Canada, the United States, Europe and the Middle East give students more knowledge of conditions and influences in their own and other countries. The 16th course, held from August 1962 to July 1963, was attended by: three students from the Royal Canadian Navy, four from the Canadian Army and five from the Royal Canadian Air Force; two each from the Defence Research Board and the Department of Transport; and one each from the Department of External Affairs, Department of National Defence, Department of National Revenue, National Research Council, Atomic Energy of Canada and Defence Construction Limited. Representation from outside Canada included one member each from the Royal Navy, the British Army, the Royal Air Force, the British Foreign Office, the United States Army, the United States Navy, the United States Air Force and the State Department of the United States.

## 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 and materials are available to support the defence production program. The Department also serves as procurement agent for the Canadian Commercial Corporation, a Crown company primarily responsible for the purchase in Canada of defence goods required by other governments and of 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. Military construction is the prime responsibility of Defence Construction (1951) Limited, a Crown company reporting to Parliament through the Minister of Defence Production.

Procurement and construction contracts issued by the Department of Defence Production and Defence Construction (1951) Limited had a net value of $\$ 797,640,000$ in 1962 and $\$ 410,015,000$ in the first half of 1963 . (The net value of contracts is made up of the

[^363]value of new contracts issued as well as amendments that increased or decreased existing contracts.) The net value of contracts in 1962 according to the various sources for which they were issued was as follows:-

| Source | Net Value | P.C. of <br> Total Value |
| :---: | :---: | :---: |
|  | \& |  |
| Department of National Defence................. | 536,666, 324 | 67.28 |
| Department of Defence Production <br> (DDP Votes). | 9,387,255 | 1.18 |
| Foreign Governments- |  |  |
| United States. | 202,886,820 | 25.44 |
| Britain. | 1,147,166 | 0.14 |
| Other..................................... | 21,586, 283 | 2.71 |
| Canadian Sources other than DND and DDP- |  |  |
| Colombo Plan................................. | 24,981,231 | 3.13 |
| Other. | 984,688 | 0.12 |
| Totals. | 797,639,767 | 100.00 |

Of the $\$ 410,015,000$ in contracts issued during the first half of $1963, \$ 344,190,000$ or 84 p.c. was for the Department of National Defence.

The $\$ 536,666,000$ in contracts placed for the Department of National Defence in 1962 was 1.5 p.c. above the value in 1961. The aircraft program accounted for most of the increase; it rose from $\$ 112,693,000$ to $\$ 205,252,000$, due in a substantial measure to contracting for the $F$-104G aircraft for the Canada-United States mutual aid program. Contracting for the electronics and communication equipment program showed a net decrease from 1961 of 32.4 p.c. to $\$ 82,785,000$. Shipbuilding and repairing contracts increased to $\$ 27,841,000$ compared with $\$ 26,585,000$ in 1961. Significant reductions in contracting appeared in the defence construction program which declined by 56.4 p.c. to $\$ 39,443,000$ in 1962. Armament program contracts (including weapons, ammunition and explosives) increased to $\$ 25,466,000$ from $\$ 11,812,000$ in 1961.

Contracts placed outside Canada on behalf of the Department of National Defence in 1962 amounted to $\$ 50,143,000$, which was 9 p.c. of the total net value of prime contracts issued. Contracts valued at $\$ 32,117,000$ were placed in the United States, $\$ 5,171,000$ in Britain and $\$ 12,855,000$ in other countries.

Expenditures on contracts placed for the Department of National Defence amounted to $\$ 606,374,000$ or 2.5 p.c. less than in 1961. Expenditures against aircraft programs declined from 1961 levels by $\$ 30,851,000$ or 13.9 p.c. and those for electronics and communication equipment by $\$ 10,301,000$ to $\$ 113,537,000$ in 1962 . Expenditures for ships increased to $\$ 53,503,000$ as a result of increasing work done on the destroyer escort program. In the first half of 1963, expenditures against prime contracts placed for the Department of National Defence stood at $\$ 270,614,000$.

The Department of Defence Production placed $\$ 9,387,000$ in contracts in 1962 and $\$ 5,562,000$ in the first half of 1963 against certain appropriations to assist Canadian defence industry. The major area of assistance in 1962, which involved contracts totalling $\$ 8,466,000$, was to sustain research and development capability in Canadian industry related to the needs of the Canada-United States development and production sharing program. Revolving Fund contracts amounted to $\$ 115,386,000$ in 1962 , primarily to make funds available for production in connection with the Canada-United States $F$-104G mutual aid program. Revolving Fund contracts amounted to $\$ 17,033,000$ in the first half of 1963.

Contracts placed for all sources other than the Department of National Defence and Defence Production totalled $\$ 251,586,000$ in 1962, of which $\$ 202,887,000$ was for the United States Government and $\$ 1,147,166$ for the British Government.

## 1.-Canadian Government Defence Contracts and Expenditures, by Defence Program, 1962 and First Half of 1963

Note.-The contract values include all contracts placed by the Department of Defence Production and Defence Construction (1951) Limited on behalf of the Department of National Defence, and the expenditure values include all payments made by the Department of National Defence against such contracts. The net value includes the value of all new contracts issued together with the value of amendments which increased or decreased the commitments of existing contracts.


Defence Production and Development Sharing.-In 1962, \$254,300,000 worth of United States defence production-sharing business was placed with Canadian industry. This was a 78-p.c. increase over 1961, due largely to contracts for Caribou aircraft and a contribution by the United States to the Canada-United States $F-104 G$ aircraft program. The total United States defence production-sharing business in this country during the four years of the program was $\$ 605,900,000$.

During 1962, continuing attention was given to simplifying procedural arrangements, such as those involved in the United States duty regulations, security matters, obtaining specifications and interpreting new instructions issued by the United States Department of Defense and military authorities. The provision of information on the program to prime contractors and subcontractors, as well as to government procurement officers, was emphasized by both governments. Publications issued during the year included: a new edition of the Production Sharing Handbook; a handbook entitled Canadian Commodity Index; a Guide to Research and Development Capabilities in Canadian Defence Industry, designed to assist government research and development agencies and the defence industry in the United States to locate potential sources within Canadian industry; and a Defence Development Sharing handbook, designed to assist Canadian companies in participating in United States defence research and development requirements.

Assistance was given to Canadian industry for research and development projects of interest to the United States Services. Contracts amounting to $\$ 8,500,000$ were issued in 1962 for this type of assistance, with expenditures totalling almost $\$ 6,800,000$. Among the major new projects were surveillance and guidance systems, short take-off and landing (STOL) aircraft, communications and navigation equipment, and surface vehicles.

These efforts resulted in significant increases in bid solicitation and submissions in the prime contract area. United States inquiries to Canadian industry increased from 5,786 in 1961 to 8,290 in 1962, and responses by Canadian companies from 1,799 to 2,384. Prime contracts placed by the United States Government with Canadian Commercial Corporation increased from 830 to 1,088 , having a total value of $\$ 176,500,000$. In the subcontract area, solicitations increased from 2,524 in 1961 to 3,108 in 1962, and responses
from 1,986 to 2,624 . Subcontracts received by Canadian firms increased from 1,111 to 1,769 , valued at $\$ 76,500,000$. Other prime contracts received directly from the United States Government by Canadian industry and other institutions totalled $\$ 1,300,000$.

Co-operation in NATO on RDP and Exports Overseas.-This program of research, development and production endeavours to attain maximum efficiency in standardization and production of military equipment by member countries of the North Atlantic Treaty Organization. Canada has submitted for consideration by the NATO groups a number of projects in the fields of vertical and short take-off and landing (V/STOL) aircraft, mobile radar, vehicle navigation equipment, sonar equipment, personnel carriers, anti-tank weapons, anti-personnel land mines, airborne navigation aids, aircraft engines, and telephone terminal equipment.

Canadian industry was encouraged to participate in supplying the defence needs of European and other countries in such areas as aircraft, navigation aids and engine spares. During 1962, Canadian firms reported that they had received $\$ 45,114,000$ in prime contracts and subcontracts from NATO and other countries (excluding the United States) of which prime contracts accounted for $\$ 7,359,000$. Subcontracts placed in Canada by overseas countries amounted to $\$ 37,755,000$. The major purchases in this group were for inertial navigation systems, vehicle spares, positional homing indicators, $F-104 G$ support equipment and engine spares.

Emergency Supply Planning.-In 1962, the Department continued with plans and preparations to bring a War Supplies Agency into immediate existence in the event of a nuclear war. The Agency would assume control of the production, distribution and pricing of all civilian and military supplies except for certain aspects of the agricultural and fishing industries. The staffing of the national and regional components of the War Supplies Agency on a standby basis was completed, and progress was made in the selection of zonal standby staffs. In several areas, a beginning was made in the selection of standby staff for local components.

In order to provide a basis on which the War Supplies Agency could make a postattack assessment of surviving supply resources, the research program was extended to produce in readily usable form comprehensive inventory data on major stocks of essential commodities and related production facilities normally available in this country. New surveys of inventory stocks and related production facilities were initiated in the materials field. In co-operation with the oil industry, energy vulnerability studies were begun and are continuing. In addition, economic studies of two emergency government zones and reports on specific segments of industry were completed. Although the research program as a whole is primarily a long-term project, significant progress was made.

Various emergency regulations and orders required to bring the War Supplies Agency into existence and give it authority under the War Measures Act were reviewed in their peacetime draft form and brought up to date. Manning and warning procedures were revised, and a system for the control of personnel records of the national and regional standby staffs was instituted in co-operation with the Department.

Plans for consumer rationing advanced to the point where sample ration documents were approved by an interdepartmental advisory committee. Agreement was reached on the transfer of a quantity of surplus military clothing to the Department for civilian use under War Supplies Agency control in an emergency. Also, the Government approved a program of industrial preparedness measures.

## PART III.-GIVIL EMERGENGY PLANNING (GIVIL DEFENGE)

The present arrangements for civil emergency planning in Canada took form in 1958, when the Canadian Government instituted a survey of the civil defence situation in Canada in the context of the total military and civilian arrangements necessary to prepare the nation for the possibility of nuclear war. This review led to a major rearrangement of
federal civil defence functions, together with an offer from the Federal Government to assume certain responsibilities previously carried out by provinces and municipalities. This reorganization became effective on Sept. 1, 1959, and was based on two principles: (1) that civil defence should be considered a function or activity of government rather than a separate organization as such; and (2) that the civil defence function should be divided into clearly defined tasks assigned to the appropriate level of government, and at each governmental level, made the responsibility of those departments or agencies best able to undertake and discharge them. A further change took place on July 1, 1963, when the Emergency Measures Organization, which until that time had been part of the Privy Council Office, reporting to Parliament through the Prime Minister, was placed under the control and supervision of the Minister of Defence Production and designated as a department for administrative purposes. At the same time, responsibility for the direction and administration of the Canadian Civil Defence College at Arnprior, Ont., was transferred from the Minister of National Health and Welfare to the Minister of Defence Production, to be exercised through EMO.

At the federal level, the present distribution of responsibilities resulting from these changes is as follows:-
(1) The Emergency Measures Organization is the co-ordinating agency for all civil emergency planning and for all federal/provincial planning. Its responsibilities include planning for continuity of government, all tasks not specifically assigned to another department of government, general liaison with the provinces, NATO and foreign countries on matters relating to civil emergency planning, and operation and administration of the Canadian Civil Defence College.
(2) The Department of National Defence, more particularly the Army, has a primary role in survival operations and has been delegated the responsibility for a substantial number of functions that are technical in character (see pp. 1110-1111).
(3) The Department of National Health and Welfare has the duty of advising and assisting provincial authorities with respect to the provision of emergency health and welfare services.
(4) The Royal Canadian Mounted Police is responsible for providing advice and assistance to provinces concerning the preservation of law and order, and the control of road traffic under emergency conditions.
(5) Other federal departments and agencies have duties that relate chiefly to carrying on essential functions or to maintaining the country's economic life under conditions of nuclear attack, e.g., the Department of Defence Production, the Department of Agriculture, the Department of Finance, the Bank of Canada, the Department of Transport, the Canadian Broadcasting Corporation, and the Department of Labour in consultation with the National Employment Service of the Unemployment Insurance Commission.

Certain emergency functions of government are a projection of normal peacetime provincial responsibilities. In such fields, the provinces and municipalities understandably have more experience and knowledge of local conditions and problems than has the Federal Government and its agencies. The following represent responsibilities of this kind, and are considered to be the proper concern of provincial authorities with such federal assistance as may prove 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 RCMP 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 emergency 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 sewage systems.
(7) Organization of municipal and other firefighting services, and control over and direction of these services in wartime, except in damaged or heavy fallout areas, where firefighting services would be under the direction of the Army as part of the re-entry operation.

The federal Civil Emergency Planning Organization consists of a Cabinet Committee on Emergency Plans to give policy guidance in all areas of civil emergency planning for war, the federal Emergency Measures Organization (EMO) with a headquarters staff at Ottawa and regional offices in each provincial capital, and departmental planning staffs. The function of the regional offices of EMO is to co-ordinate the emergency planning of federal departments and agencies in the provinces and maintain liaison with provincial governments, the provincial emergency planning organizations and the appropriate military authorities. At the international level, EMO has an officer in Paris to maintain liaison with other NATO countries and to keep abreast of developments in civil emergency planning in these countries. Liaison with the United States is carried out by the headquarters staff in Ottawa.

EMO administers a Financial Assistance Program to assist the provinces and municipalities in the development of emergency plans. Under this Program, the Federal Government may pay up to 75 p.c. of the cost of approved civil defence projects; $\$ 5,300,000$ was earmarked for this purpose for the year ending Mar. 31, 1964. Advice and guidance is also given at the government level; a Survival Planning Guide for Municipalities was issued by EMO in 1961 and additions and amendments to this Guide are issued from time to time as additional experience and knowledge are acquired.

To provide the public with information on survival measures, shelter designs and related matters, EMO and other government agencies have published literature of various kinds. The booklet Survival in Likely Target Areas examines the advantages and disadvantages of evacuation as opposed to shelter. The leaflet Simpler Shelters includes five designs for less complex shelters for both basement and outdoor construction. These publications supplement the booklet 11 Steps to Survival, a general outline of what can be done for personal protection; Your Basement Fallout Shelter giving instructions for "do-ityourself" shelters; and Fallout on the Farm describing the effects of radioactive fallout on agriculture and the protective measures that might be taken against it. Copies of these publications may be obtained from provincial civil defence or emergency measures coordinators in provincial capitals.

A War Supplies Agency, established in 1960 and administered by the Department of Defence Production, will, in time of war, control the distribution and use of essential supplies, their prices, and their rationing as required. The Emergency Supply Planning Branch, which has the direct responsibility for the development of this Agency, has a headquarters staff in Ottawa and representatives in each region of Canada.

One of the major accomplishments of EMO has been the establishment of emergency facilities for the Federal Government in the Ottawa area, and the construction of regional emergency headquarters in six provinces; plans are proceeding in the other four provinces for the development of similar facilities. To ensure the further decentralization and dispersal of authority during an emergency, planning is proceeding on the development, in co-operation with the provinces, of a system of zone headquarters which will form part of the governmental structure at the level below that of the regional emergency headquarters.

To ensure continuity of communications in an emergency, an Emergency National Telecommunications Organization has been established within the Department of Transport. Under its authority, the Canadian Broadcasting Corporation has developed plans for emergency broadcasting which can be instituted at any time of the day or night to broadcast to all areas of Canada (see also p. 836).

A federal-provincial Conference on Civil Emergency Planning was held in December 1962. All provinces were represented and a number of federal Cabinet Ministers attended. This was in continuation of conferences held in previous years. Matters reviewed and discussed included the federal Financial Assistance Program, public information programs, training and exercises, shelter policy, radiological defence, and the decentralization of government in an emergency.

# CHAPTER XXVI.-SOURCES OF OFFIGIAL INFORMATION AND MISCELLANEOUS DATA 

## CONSPECTUS



## PART I.-SOURCES OF OFFICIAL INFORMATION

## Section 1.-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, Northern Affairs and National Resources, and Mines and

Technical Surveys, 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 and Public Relations 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. 104-122 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 Northern Affairs and National Resources, Ottawa.

## Section 2. Sale of Official Publications

Under the provisions of the Public Printing and Stationery Act, the Queen's Printer and Controller of Stationery, 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 Sec. 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 and Controller of Stationery issues the Daily Checklist of Government 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 and Controller of Stationery 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 government 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; and the New Zealand Government.

Canadian Government and international organizations publications may be obtained from Queen's Printer bookstores located in Ottawa, Toronto and Montreal, 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 a catalogue of Current Publications and in the Queen's Printer's Catalogue of Canadian Government Publications. The DBS Daily Bulletin and Weekly Bulletin, available from the Bureau's Information and Public Relations Division at an annual subscription of $\$ 1$ each, are designed to serve persons wishing
to keep closely informed on the full range of published information issued by the Bureau. Subscription orders for DBS publications or orders for single copies should be addressed to the Information and Public Relations Division, 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 addressed to the provincial capital cities:-

| Newfoundland | St. John's |
| :---: | :---: |
| Prince Edward Island | Charlottetown |
| Nova Scotia. | Halifax |
| New Brunswick | Fredericton |
| Quebec... | Quebec |



## DIRECTORY OF SOURCES OF OFFICIAL INFORMATION

Note.-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

Dept. of Agriculture Information Division
Dept. of Fisheries
Information and Educational Service
Dept. of Forestry
Information and Technical Services
Dept. of Mines and Technical Surveys.
Editorial and Information Division
Dept. of National Health and Welfare Information Services
Dept. of Northern Affairs and Na tional Resources
Information Services Division
Dept. of Trade and Commerce Trade Publicity Branch
Queen's Printer (Canada Gazette, Statutes of Canada, Organization of the Government of Canada, etc.)
National Film Board (films, filmstrips, photographs on all subjects)
Dominion Bureau of Statistics
Dept. of Agriculture
Information Division
Central Mortgage and Housing Corporation (mortgage loans for new farm houses)
Dept. of Finance (farm improvement loans)
Dept. of Labour (farm workers)
Dept. of Northern Affairs and National Resources (Yukon and N.W.T.)

Dept. of Trade and Commerce
Agricultural and Fisheries Branch
Dept. of Veterans Affairs (veterans)
Farm Credit Corporation (mortgage loans)
National Research Council
Prairie Regional Laboratory, Saskatoon, Sask. (utilization of crops and crop products)
National Film Board
Dominion Bureau of Statistics

Subject
Sources for Provincial Data

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 Bureau; N.S., Dept. of Provincial Secretary; N.B., Dept. of Finance or N.B. Travel Bureau; Que., Dept. of Industry and Commerce, Bureau of Statistics, or Dept. of Tourism, Game and Fish; Ont., Dept. of Economics and Development, or Dept. of Travel and Publicity; Man., Dept. of Industry and Commerce or Dept. of Provincial Secretary; Sask., Dept. of Industry and Information or Executive Council; Alta., Dept. of Industry and Development: B.C., Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics.

Nfld.:-Dept. of Mines, Agriculture. and Resources
P.E.I., N.S., N.B., Sask., Alta.:Depts. of Agriculture
Que.:-Dept. of Agriculture and Colonization, Information and Research Branch
Dept. of Industry and Commerce Bureau of Statistics
Ont.:-Dept. of Agriculture, Farm Economics and Statistics Branch and Information Branch
Man.:-Dept. of Agriculture and Conservation
B.C.:-Dept. of Agriculture

Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Dominion Bureau of Statistics (summaries of provincial data)

## Sources for Federal Data

Dept. of Northern Affairs and National Resources
Information Services Division
Northern Administration Branch
Northern Co-ordination and Re search
Dept. of Citizenship and Immigration Information Division (Indians)
Dept. of Mines and Technical Surveys Editorial and Information Division Polar Continental Shelf Project Dominion Observatories Geological Survey of Canada Surveys and Mapping Branch Geographical Branch Marine Sciences Branch
Dept. of National Defence
Director of Public Relations
Defence Research Board
Dept. of National Health and Welfare
Dept. of Public Works
Building Construction Branch
Dept. of Transport (airports, weather stations, navigation, re-supply operations)
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
Dept. of Mines and Technical Surveys Dominion Observatory, Ottawa, Ont.
Dominion Astrophysical Observatory, Victoria, B.C.
Dominion Radio Astrophysical Observatory, Penticton, B.C.
National Research Council
Radio and Electrical Engineering Division (radio astronomy)
Atomic Energy of Canada Limited (research studies, sale of radioisotopes)
Atomic Energy Control Board (policy, regulations)
Dept. of Mines and Technical Surveys Geological Survey of Canada Mines Branch
Eldorado Mranch and Refining Limited
Queen's Printer (International Atomic Energy Agency)
Dept. of Transport
Civil Aviation Branch (control; licensing: airports and air navigation facilities)
Information Services
Dept. of Defence Production
Aircraft Branch
Dept. of Mines and Technical Surveys
Legal Surveys and Aeronautical Charts Division
Dept. of National Defence
Directorate of Public Relations (RCAF)
Dept. of National Health and Welfare
Civil Aviation Medicine Division
Dept. of Northern Affairs and National Resources
National Aviation Museum
National Research Council
National Aeronautical Establishment
Queen's Printer (International Civil Aviation Organization)
Trans-Canada Air Lines
National Film Board
Dominion Bureau of Statistics

Sources for Provincial Data


| ASTRONOMY | $\left\{\begin{array}{l} \text { Que.:-Dept. of Cultural Affairs } \\ \text { Quebec Society of Astronomy } \\ \text { Man.:-University of Manitoba, } \\ \text { Winnipg } \\ \text { Sask.:-University of Saskatchewan, } \\ \text { Saskatoon } \\ \text { Alta.:-University of Alberta, Ed. } \end{array}\right.$ |
| :---: | :---: |
| ATOMIC ENERGY | Ont.:-Dept. of Energy Resources <br> The Hydro-Electric Power Commission of Ontario <br> Man.:-Dept. of Industry and Commerce, Manitoba Development Authority <br> University of Manitoba, Physics Dept. <br> Sask.:-University of Saskatchewan, Saskatoon <br> Alta.:-Alberta Research Council, <br> Edmonton <br> B.C.:-University of British Columbia |
| AVIATION | Que.:-Quebec Government Air Services <br> Ont.:-Dept. of Lands and Forests. Forest Protection Branch Man.:-Manitoba Government Air Services <br> Sask.:-Saskair (formerly Sask. Gov- |

Sources for Federal Data

## $\underline{\text { Subject }}$

Bank of Canada
Industrial Development Bank
Central Mortgage and Housing Corporation
Dept. of Finance (for banking; also small businesses 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 Justice
Superintendent of Bankruptcy
Dominion Bureau of Statistics


Sources for Provincial Data
Nfld.:-Dept. of Finance
Dept. of Provincial Affairs
P.E.I., N.S.:-Dept. of Provincial Secretary
N.B.:-Dept. of Finance

Que.:-Dept. of Finance, Insurance Branch
Dept. of Industry and Commerce, Bureau of Statistics
Ont.:-Province of Ontario Savings Office
Dept. of Insurance
Man.:-Dept. of Provincial Secretary
Manitoba Development Fund
Manitoba Agricultural Credit Corporation
Sask.:-Provincial Secretary, Registrar of Securities
Dept. of Co-operation and Cooperative Development, Credit Union Services
Alta.:-Treasury Dept., Superintendent of Treasury Branches
B.C.:-Dept. of Finance, Inspector of Trust Companies
$\left\{\begin{array}{l}\text { Nfld., P.E.I., Alta.:-Depts. of } \\ \text { Attorney General }\end{array}\right.$
$\left\{\begin{array}{l}\text { Attorney General } \\ \text { Man., Sask.:-Depts. of Provincial }\end{array}\right.$ Secretary

Nfld.:-Dept. of Education Public Libraries Board
Dept. of Provincial Affairs, Archives
P.E.I.:-Dept. of Education

Superintendent of Libraries and Director of Adult Education Legislative Librarian
N.S., N.B.:-Depts. of Education, Provincial Librarian
Que.:-Office of Provincial Secretary Provincial Archives Provincial Library Dept. of Cultural Affairs
Ont.:-Dept. of Education, Provincial Library Service
Legislative Library
Man.:-Dept. of Education, Provincial Librarian
Sask.:-Provincial Library Legislative Library
Alta.:-Dept. of Provincial Secretary Library Board
Pibrary Board
B.C.:-Dept. of Provincial Secretary Provincial Library and Archives Public Library Commission

BIRTHS
See "Vital Statistics"

Dept. of National Health and Welfare
Dept. of Northern Affairs and National Resources (Yukon and N.W.T.)

$\left\{\begin{array}{l}\text { Sources same as for "Old Age } \\ \text { Assistance" excepting: }\end{array}\right.$
B.C.:-Blind Persons Allowances Board

## BROADCASTING <br> See "Radio" and "Television"

Central Mortgage and Housing Corporation (NHA financing, house designs, apartment building standards)
Canadian Government Specifications Board
Canadian Standards Association
Dept. of Defence Production
Defence Construction (1951) Limited
Dept. of Finance (Farm Improvement Loans Act; Small Businesses Loans Act)
Dept. of National Health and Welfare Hospital Design Division
Dept. of Northern Affairs and National Resources
National Parks Branch
Northern Administration Branch
Dept. of Public Works
Building Construction Branch
Chief Architect and Information Services
Dept. of Transport
Air Services Construction Branch (airport terminal buildings, etc.) Information Services
Dept. of Veterans Affairs (Soldier Settlement and Veterans' Land Act)
Farm Credit Corporation
National Research Council
Division of Building Research (construction materials, building codes and practice, soil and snow mechanics, housing standards)
Dominion Bureau of Statistics

## BUILDING CONSTRUCTION

Nfld., N.B.:-Depts. of Public Works P.E.I.:-Dept. of Industry and Natural Resources
N.S.:-Dept. of Trade and Industry

Que.:-Farm Credit Bureau, Family Housing Division
Dept. of Industry and Commerce, Bureau of Statistics
Ont.:-Dept. of Labour, Factory Inspection Branch
Dept. of Economics and Development, Housing Branch
Dept. of Public Works
Dept. of Municipal Affairs, Community Planning Branch
Man.:-Dept. of Industry and Commerce
Sask.:-Dept. of Labour
Alta.:-Dept. of Industry and Development, Alberta Bureau of Statistics
Dept. of Labour
B.C.:-Dept. of Finance, Housing Commissioner
Dept. of Labour, Factory Inspection Branch
Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Dept. of Municipal Affairs, Planning Division

Dept. of Transport
Information Services (secondary canals)
National Research Council
Division of Mechanical Engineering
St. Lawrence Seaway Authority (St. Lawrence-Great Lakes canals)
Dominion Bureau of Statistics

Dept. of Trade and Commerce Economics Branch
Dominion Bureau of Statistics

## CHEMICALS

Que.:-Dept. of Natural Resources Ont.:-Ontario Research Founda-

Dept. of Citizenship and Immigration Citizenship Branch (publications) Information Division
National Film Board

## CITIZENSHIP

See also
"Population"

Ont.:-Dept. of Provincial Secretary and Citizenship

## Subject

Sources for Provincial Data
Nfld.:-Dept. of Provincial Affairs P.E.I., N.S.:-Depts. of Provincial Secretary
N.B.:-Dept. of Municipal Affairs

Que.:-Dept. of Family and Social Welfare
Ont.:-Dept. of Attorney General, Emergency Measures Organization
Man.:-Dept. of Provincial Secretary, Civil Defence Branch
Sask.:-Emergency Measures Organization
Executive Council
Alta.:-Emergency Measures Organization
B.C.:-Dept. of Provincial Secretary, Provincial Co-ordinator

Dept. of Transport
Meteorological Branch. Toronto
National Research Council
Division of Building Research, (Climatological Atlas of Canada, National Building Code)
$\square$
CLIMATE

Que.:-Dept. of Natural Resources, Meteorological Bureau
Ont.:-Dept. of Agriculture, Farm Economics and Statistics Branch
B.C.:-Dept. of Agriculture

Dept. of Mines and Technical Surveys
Geological Survey of Canada
Mines Branch
Mineral Resources Division
Dominion Coal Board
Dominion Bureau of Statistics

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.:-Dept. of Mines and Minerals Alberta Research Council
B.C.:-Dept. of Mines and Petroleum Resources
$\left.\begin{array}{l}\text { Dept. of Justice } \\ \begin{array}{c}\text { Director of } \\ \text { Research } \\ \text { Restrictive Trade Practices Com- } \\ \text { mission }\end{array}\end{array}\right\} \quad$ COMBINES

Dept. of Transport
Telecommunications and Electronics Branch (radio aids, aeronautical and marine navigation)
Information Services
Meteorological Branch (meteorological communications)
Board of Transport Commissioners (regulation of certain telegraph and telephone companies)
Canadian Broadcasting Corporation (radio and television broadcasting)
Canadian Overseas Telecommunication Corporation
Dept. of Northern Affairs and National Resources
Northern Administration Branch (Yukon and N.W.T.)
Queen's Printer (International Telecommunication Union)
Dominion Bureau of Statistics
(Nfld.:-Dept. of Economic Development
Board of Public Utilities
P.E.I.:-Tourist and Information Bureau
N.S.:-Board of Commissioners of Public Utilities
N.B.:-Travel Bureau

Que.:-Dravel. of Transportation and Communications
Ont.:-Ontario Telephone Service Commission
Ontario Provincial Police, Radio Communications Branch
Man.:-Manitoba Telephone System Sask.:-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
P.E.I.:-Dept. of Industry and Natural Resources
Dept. of Education, Physical Fitness Division
N.S.:-Dept. of Municipal Affairs
N.B.:-Dept. of Education, Physical Education and Recreational Branch
Dept. 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 Industry and Commerce, Regional Development Branch
Sask.:-Dept. of Municipal Affairs, Community Planning Branch
Executive Council, Economic Advisory and Planning. Board
Centre for Community Studies, University of Saskatchewan, Saskatoon
Alta.:-Dept. of Municipal Affairs, Town and Rural Planning Branch
B.C.:-Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Dept. of Municipal Affairs, Regional Planning Division
Dept. of Education, Community Programmes Branch
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 Lands and Forests, Conservation Branch
Ontario Agricultural College, Guelph
Man.:-Dept. of Mines and Natural Resources
Sask.:-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
$\left\{\begin{array}{l}\text { All Provinces except B.C.:-Depts. } \\ \text { of Attorney General }\end{array}\right.$
B.C.:-Provincial Secretary

Subject

## 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
Dept. of Industry and Commerce, Bureau of Statistics
Ont.:-Dept. of Agriculture, Cooperatives Branch
Man.:-Dept. of Agriculture and Conservation, Co-operative Services Branch
Sask.:-Dept. of Co-operation and Co-operative Development
Alta.:-Dept. of Industry and Development. Co-operative Activities Branch
B.C.:-Attorney-General'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
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 Citizenship and Immigration
Information Division (Indians and immigrants)
Dept. of Northern Affairs and National Resources
National Parks Branch
National Museum of Canada
Northern Administration Branch
Dept. of Veterans Affairs (veterans only)
National Gallery of Canada (films, reference library)
Public Archives
National Film Board

CREATIVE ARTS AND HANDICRAFTS

Nfld.:-Dept. of Education
P.E.I.:-Dept. of Provincial Secretary, Tourist and Information Branch
Dept. of Education, Physical Fitness Division
N.S.:-Dept. of Trade and Industry, Handicrafts Division
Nova Scotia College of Art
Dept. of Education, Physical Fitness Division
N.B.:-Dept. of Industry and Development, Handicraft Division The New Brunswick Museum
Dept. of Education, Physical Education and Recreation Branch
Que.:-Dept. of Cultural Affairs
Dept. of Agriculture (rural handicrafts)
Ont.:-Dept. of Education, Community Programmes Branch
Dept. of Agriculture, Home Economics Service
Man.:-Dept. of Agriculture and Conservation. Extension Service
Sask.:-Dept. of Education, Continuing Education Branch
Saskatchewan Arts Board
Alta.:-Dept. of Provincial Secretary (cultural activities)
B.C.:-Provincial Museum (Indian handicrafts)
Dept. of Education, Community Programmes Branch

Sources for Federal Data
Subject

Dept. of Justice
Office of the Commissioner of Penitentiaries
National Parole Board
Dept. of National Health and Welfare
Research and Statistics Division
National Film Board
Dominion Bureau of Statistics

See pp. 117-122 of this volume for a list of Crown corporations giving the functions of each and the Cabinet Minister through which each reports to Parliament.

CRIME AND DELINQUENCY

CROWN

## CORPORATIONS

## Sources for Provincial Data

All Provinces:-Depts. of Attorney General
Additional:-Nfld., N.S., Alta.:Depts. of Public Welfare
P.E.I.:-Dept. of Welfare and Labour
Que.:-Dept. of Family and Social Welfare
Dept. of Youth
Dept. of Industry and Commerce, Bureau of Statistics
Ont.:-Dept. of Reform Institutions
Sask.:-Dept. of Social Welfare and Rehabilitation
B.C.:-Dept. of Social Welfare
(For information with regard to individual Crown corporations apply as follows:-
Nfld.:-Dept. of Economic Development
Dept. of Public Works
P.E.I.:-Dept. of Industry and

Bank of Canada
Dept. of Finance
Royal Canadian Mint
Public Archives

|  |
| :--- |
| Dept. of Agriculture <br> Production and Marketing Branch <br> Dairy Products Division |
| Health of Animals Branch <br> Research Branch <br> Animal Research Institute <br> Dairy Technology Research In- <br> stitute <br> Dept. of Trade and Commerce |

Dept. of Trade and Commerce
Agriculture and Fisheries Branch National Film Board
Dominion Bureau of Statistics

Natural Resources
N.S.:-Dept. of Trade and Industry Ont.:-Dept. of Provincial Secretary
Man.:-Treasury Dept.
Dept. of Public Utilities
Sask.:-Government Finance Office
Alta.:-Dept. of Industry and Development
B.C.:-Attorney-General's Dept.

## CURRENCY


(Nfid.:-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.:-Dept. of Agriculture and Conservation, Dairy Branch
Sask.:-Dept. of Agriculture, Animal Industry Branch
Milk Control Board

Dept. of National Defence
Director of Public Relations Directorate of Naval Information
Directorate of Public Relations (Army)
Directorate of Public Relations (RCAF)
Defence Research Board
Dept. of Defence Production
Canadian Commercial Corporation
Defence Construction (1951) Limited
Canadian Arsenals Limited
Dept. of External Affairs (NATO)

DEATHS See "Vital Statistics"


Subject
Sources for Provincial Data

DEFENCE PRODUCTION

Dept. of Defence Production

Dept. of National Health and Welfare Dept. of Northern Affairs and National Resources (Yukon and N.W.T.)

Dept. of Veterans Affairs (war disabled veterans)

Bank of Canada
Central Mortgage and Housing Corporation
Dept. of Agriculture Economics Division
Dept. of Citizenship and Immigration Canadian Citizenship Branch
Dept. of Defence Production Economics and Statistics Branch
Dept. of Finance
Financial Affairs Division
Dept. of Fisheries
Economics Service
Dept. of Forestry Economics Division
Dept. of Labour
Economics and Research Branch
Legislation Branch
Dept. of Mines and Technical Surveys
Mineral Resources Division
Dept. of National Health and Welfare Research and Statistics Division
Dept. of Northern Affairs and National Resources
Administration Services
Northern Administration Branch
Northern Co-ordination and Research
Water Resources Branch
Dept. of Public Works
Economic Studies Branch
Dept. of Trade and Commerce Economics Branch
Dept. of Transport Economics Policy Branch
Fisheries Research Board
Public Archives (early data)
Queen's Printer (UNESCO)
Dominion Bureau of Statistics

DISABLED
PERSONS ALLOWANCES
(Nfld::-The Old Age Assistance Board
P.E.I.:-Dept. of Welfare and Labour, Director of Disabled Persons Allowances
N.S.:-Director of Old Age Assistance
N.B.:-Dept. of Youth and Welfare, Director of Disabled Persons Allowances
Que.:-Quebec Social Allowances Commission
Ont.:-Dept. of Public Welfare. Welfare Allowances Branch
Man.:-The Old Age Assistance and Blind Persons' Allowances Board
Sask.:-Dept. of Social Welfare and Rehabilitation, Director of Public Assistance
Alta.:-Dept. of Public Welfare, Pensions Board
B.C.:-The Disabled Persons Allowances Board
(Nfld.:-Dept. of Economic Development
P.E.I.:-Dept. of Industry and Natural Resources
N.S.:-Dept. of Trade and Industry Nova Scotia Research Foundation
N.B.:-Dept. of Industry and Development, Office of the Economic Advisor
Que.:-Dept. of Industry 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
ECONOMIC AND SOCIAL RESEARCH

Man.:-Dept. of Industry and Commerce, Business Research Branch
Manitoba Development Authority
Treasury Dept., Economic Research Division
Dept. of Agriculture and Conservation, Economic Division
Sask.:-Executive Council
Economic Advisory and Planning Board
Dept. of Industry and Information
Government Finance Office
Dept. of Co-operation and Cooperative Development. Research and Statistical Division
Centre for Community Studies, University of Saskatchewan, Saskatoon
Alta.:-Dept. of Industry and Development
B.C.:-Dept. of Industrial Development, Trade, and Commerce. Bureau of Economics and Statistics

## Sources for Federal Data

Subject
Sources for Provincial Data
Dominion Bureau of Statistics Canada Council
Canadian Broadcasting Corporation (educational broadcasts)
Dept. of Citizenship and Immigration Citizenship Branch (immigrants) Information Division (Indians)
Dept. of Finance (university grants) Dept. of Fisheries

Information and Consumer Service Dept. of Forestry

Information and Technical Services
Dept. of Labour
Vocational Training Branch
Dept. of National Defence
Director of Education (service dependants' schools)
Dept. of National Health and Welfare
Dept. of Northern Affairs and National Resources
Northern Administration Branch (Yukon and N.W.T.)
Dept. of Veterans Affairs (veterans and children of war dead)
National Gallery of Canada (school broadcasts, lectures)
National Research Council
Division of Administration and Awards (science and engineering students registered in Canadian graduate schools)
Queen's Printer (UNESCO)

## EDUCATION

See also
"Motion Pictures" and "Photographic Material ${ }^{\prime \prime}$

All Provinces:-Depts. of Education (technical, visual, audio and all other phases of education)
Additional:-Alta.:-Dept. of Labour, Apprenticeship Board

Chief Electoral Office
Library of Parliament
$\}$ ELECTIONS $\left\{\begin{array}{l}\text { Nfl.:-Dept. of Provincial Affairs } \\ \text { P.E.i., N.S.S. Ont.:-Depts. of Pro- } \\ \text { vincial Secretary } \\ \text { N.B.:-Dept. of Finance } \\ \text { Que.:-Chief Returning Officer } \\ \text { Man., B.C.:-Chief Electoral Of- } \\ \text { ficers. } \\ \text { Sask., Alta.:-Clerks of the Execu- } \\ \text { tive Councils }\end{array}\right.$


National Film Board
Dominion Bureau of Statistics
(Nfld.:-Dept. of Economic Development, Power Commission
P.E.I.:-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 Resources The Hydro-Electric Power Commission of Ontario
Man.:-Manitoba Hydro
Dept. of Public Utilities
Sask.:-Saskatchewan Power Corporation
B.C.:-Dept. of Lands, Forests and Water Resources
British Columbia Hydro and Power Authority
British Columbia Energy Board
Dept. of Industrial Development, Trade, and Commerce. Bureau of Economics and Statistics

## Sources for Provincial Data

(All Provinces:-Depts. of Agriculture (farm labour)
Additional:-Nfld., N.S., N.B., Sask.:-Depts. of Labour
Que.:-Dept. of Labour, Provincial Employment Bureau

## Dept. of Labour

Economics and Research Branch Civil Service Commission (opportunities for and conditions of employment in the Federal Civil Service)
Dept. of Citizenship and Immigration Information Division (immigrants)
National Employment Service
Dominion Bureau of Statistics

## EMPLOYMENT

Dept. of National Health and Welfare (health and hospital services)
Royal Canadian Mounted Police (field duties)

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 Fisheries
Information and Consumer Service
Dept. of Mines and Technical Surveys
Editorial and Information Division
Mineral Resources Division
Dept. of National Health and Welfare Information Division
Dept. of Northern Affairs and Na tional Resources
National Museum of Canada
Editorial and Information Division
National Capital Commission
National Capital Plan (exhibits and information)
National Gallery of Canada (paintings, etc.)
National Film Board

## EXHIBITIONS

Dept. of Northern Affairs and National Resources
Northern Administration Branch (education, welfare, handicrafts, livelihood)
Northern Co-ordination and Research
National Museum of Canada (historical and archaeological (historical and archaeological


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)
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Ont.:-Dept. of Economics and Development
Dept. of Labour
Civil Service Commission
Man.:-Dept. of Labour
Dept. of Industry and Commerce, Business Research Branch
Alta.:-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

Nfld.:-Dept. of Public Welfare, Division of Northern Labrador Affairs

Nfld.:-Dept. of Provincial Affairs P.E.I., N.S., N.B.:-Depts. of Agriculture
Que.:-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 Sask.:-Dept. of Agriculture Dept. of Industry and Information
Alta.:-Dept. of Provincial Secretary
Dept. of Agriculture
B.C.:-Dept. of Agriculture Dept. of Industrial Development, Trade, and Commerce

Dept. of National Health and Welfare
Dept. of Citizenship and Immigration (assistance to families entering Canada not yet eligible for family allowances)

## EXTERNAL AFFAIRS

See also "Trade"

Dept. of External Affairs
Queen's Printer (International Organizations Publications)


Sources for Federal Data
Dept. of Agriculture
Production and Marketing Branch Plant Products Division
Plant Protection Division
Research Branch
Genetics and Plant Breeding Research Institute
Plant Research Institute
Dept. of Trade and Commerce
Agriculture and Fisheries Branch
National Research Council
Prairie Regional Laboratory, Saskatoon, Sask. (utilization of crops and crop products)
Queen's Printer (FAO)
National Film Board
Dominion Bureau of Statistics

Dept. of Finance
Bank of Canada
Dominion Bureau of Statistics

Dept. of Forestry
Forest Research Branch
Forest Products Research Branch (forest products fire retardents)
Board of Transport Commissioners (forest-fire protection along railway lines)
Dept. of Northern Affairs and National Resources
National Parks Branch
Northern Administration Branch
Dept. of Public Works
Fire Prevention Branch (fire loss statistics)
National Research Council
Fire Research Section

Dept. of Fisheries
Information and Consumer Service
Canadian Broadcasting Corporation
Farm and Fisheries Department
Dept. of Finance
Fisheries Improvement Loans Act
Dept. of Northern Affairs and Na tional Resources
Northern Administration Branch (Eskimo fishing co-operatives)
Dept. of Trade and Commerce Agriculture and Fisheries Branch
Dept. of Veterans Affairs (veterans settled as commercial fishermen)
Fisheries Research Board
Queen's Printer (FAO)
Unemployment Insurance Commission (unemployment insurance for fishermen)
National Film Board

## Subject

Sources for Provincial Data

## FIELD CROPS

FINANCE
See also "Taxation"

FIRE

## PREVENTION

Nfld.:-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., Alta., B.C.:-Depts. of Agriculture, Field Crops Branch
Man.:-Dept. of Agriculture and Conservation, Soils and Crops Branch
Sask.:-Dept. of Agriculture, Plant Industry Branch
(Nfld., N.B., B.C.:-Depts.of Finance
P.E.I., Man., Sask., Alta.:Depts. of Provincial Treasurer
N.S.:-Dept. of Finance and Economics.
Que.:-Dept. of Finance
Dept. of Industry and Commerce, Bureau of Statistics
Ont.:-Treasury Dept.
Dept. of Economics and Development, Administration Branch and Financial Research Branch
(All Provinces: - Provincial Fire Marshals (for urban and rural fire losses)
Additional:-Nfld.:-Dept. of Mines, Agriculture, and Resources
P.E.I.:-Dept. of Industry and Natural Resources
N.S.:-Dept. of Lands and Forests
N.B.:-Dept. of Lands and Mines

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
Sask.:-Dept. of Natural Resources Dept. of Labour, Fire Commissioner
Alta.:-Dept. of Lands and Forests Dept. of Provincial Secretary
B.C.:-Dept. of Lands, Forests and Water Resources
Nfld., P.E.I., N.B.:-Depts. of Fisheries
N.S.:-Dept. of Trade and Industry. Fisheries Division
Que.:-Dept. of Tourism, Game and Fish
Dept. of Industry and Commerce, Bureau of Statistics
Ont.:-Dept. of Lands and Forests. Fish and Wildlife 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

Sources for Federal Data
Subject
Sources for Provincial Data
Dept. of National Health and Welfare (for standards and methods of control of quality or potency and safety of food and drugs)
Dept. of Agriculture (for inquiries on standards for meat, canned food, fruit, honey, maple products, vegetables, dairy products, poultry, etc.)
Dept. of Fisheries (standards for fish products)

Dept. of Finance
Bank of Canada

Dept. of Forestry
Economics Division
Forest Research Branch
Forest Products Research Branch
Dept. of Trade and Commerce
Commodities Branch
National Film Board (films, filmstrips, photographs, in relation to departmental conservation and development programs)
Dominion Bureau of Statistics


## FOREIGN AFFAIRS

See
"External Affairs"

FOREIGN EXCHANGE

Nfld.:-Dept. of Mines, Agriculture, and Resources
P.E.I.:-Dept. of Industry and Natural Resources Resources, Forestry Branch
Sask.:-Dept. of Natural Resources, Forestry Branch
Dept. of Industry and Information Saskatchewan Timber Board
B.C.:-Dept. of Lands, Forests and Water Resources

Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics


FUEL
See "Coal", "Oil and Natural Gas" and "Electric

Power"

Dept. of Agriculture
Production and Marketing Branch Livestock Division (grading)
Research Branch (production)
Dept. of Northern Affairs and National Resources
Northern Administration Branch (Yukon and N.W.T.)
Dominion Bureau of Statistics

|  |  |
| :---: | :---: |
| Dept. of Agriculture |  |
| Production and Marketing Branch Livestock Division (grading) <br> Research Branch (production) | FUR FARMING |
| Dept. of Northern Affairs and | See also |
| National Resources |  |
| Northern Administration Branch (Yukon and N.W.T.) | rapping |

(Nfld.:-Dept. of Mines, Agriculture, and Resources
Dept. of Economic Development
P.E.I., N.B., Alta., B.C.:-Depts. of Agriculture
N.S., Ont.:-Depts. of Lands and

Qorests Que.:-Dept. of Agriculture and Colonization
Dept. of Industry and Commerce, Bureau of Statistics
Man.:-Dept. of Mines and Natural Resources, Game Branch
Sask.:-Dept. of Natural Resources Saskatchewan Fur Marketing Service

Sources for Federal Data
Subject

## Sources for Provincial Data


(Nfld.:-Dept. of Mines, Agriculture, P E and Resources
P.E.I.:-Travel Bureau
N.S.:-Dept. of Mines
N.B.:-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
Ont.:-Dept. of Lands and Forests, Lands and Surveys Branch
Dept. of Mines
Ontario Agricultural College
Dept. of Economics and Development, Special Research and Surveys Branch
Dept. of Municipal Affairs, Community Planning Branch
Man.:-Dept. of Mines and Natural Resources
Sask.:-Dept. of Natural Resources Dept. of Industry and Information
Alta.:-Dept. of Lands and Forests University of Alberta
B.C.:-Dept. of Lands, Forests and Water Resources
(Nfld.:-Dept. of Mines, Agriculture. and Resources
P.E.I.:-Dept. of Industry and Natural Resources
N.S.:-Dept. of Mines
N.B.:-Dept. of Lands and Mines

Que.:-Dept. of Natural Resources, Geological Surveys Branch
Dept. of Agriculture
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 Petroleum Resources

Dept. of the Secretary of State (federal-provincial channel of communication)
Chief Electoral Office (Electoral Act and voters lists)
Dept. of Citizenship and Immigration Citizenship Branch (publications) Information Division
Dept. of Northern Affairs and National Resources (Yukon and N.W.T.)

Queen's Printer (distribution and sale of statutory orders and regulations).
Library of Parliament
Privy Council Office (appointments, orders in council, statutory orders and regulations)
Public Archives (early official records)

GOVERNMENT
For Senate of Canada and House of Commons see "Parliament"

Nfld.:-Dept. of Provincial Affairs
P.E.I., N.S., N.B., Ont., Man. Sask., Alta., B.C.:-Depts. of Provincial Secretary.
Que.:-Office of Provincial Secretary

Dept. of National Health and Welfare
Queen's Printer (WHO)
National Film Board
Dominion Bureau of Statistics

## HEALTH

For Health of Veterans see "Veterans Affairs'

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## Sources for Federal Data

Dept. of Veterans Affairs (war memorials)
Library of Parliament
National Capital Commission (Historical Section)
National Gallery of Canada (provincial and federal)
National Film Board
Dominion Bureau of Statistics


Public Archives
Dept. of National Defence
Naval Historian
Directorate of History (Army)
Air Historian
Dept. of Northern Affairs and National Resources
National Parks Branch (historic sites and monuments)
National Museum of Canada
Canadian War Museum
National Aviation Museum
Archivist for the Northwest Territories Council

## Sources for Provincial Data

(Nfd.:-Legislative Library Memorial University
Gosling Memorial Library
Dept. of Provincial Affairs, Public Archives and Museum
P.E.I.:-Travel Bureau, Legislative Librarian
N.S.:-Public Archives
N.B.:-Legislative Library

Que.:-Office of Provincial Secretary, Provincial Archives
Provincial Library
Dept. of Cultural Affairs
Ont.:-Legislative Library
Dept. of Travel and Publicity, Historical Branch
Dept. of Public Records and Archives
Man.:-Provincial Library and Archives
Sask.:-Legislative Library, Archives Division
Alta.:-Archives, Provincial Library Dept. of Provincial Secretary
B.C.:-Dept. of Provincial Secretary. Provincial Librarian and Archivist
(Nfld.:-Dept. of Mines, Agriculture, and Resources
P.E.I., Ont.:-Depts. of Agriculture N.S., N.B., Alta., B.C.:-Depts. of Agriculture, Horticultural Branches
Que.:-Dept. of Agriculture and Colonization, Horticultural Branch
Man.:-Dept. of Agriculture and Conservation
Sask.:-Dept. of Agriculture, Plant Industry Branch

Nfld., Que.:-Depts. of Health
P.E.I.:-Dept. of Health

Hospital Services Commission
N.S.:-Hospital Services Planning Commission
N.B.:-Dept. of Health, Hospital Services Branch
Ont.:-Ontario Hospital Services Commission
Man.:-Hospital Services Plan
Sask., Alta.:-Depts. of Public Health
B.C.:-Dept. of Health Services and Hospital Insurance
(Nfld., N.B., Que., Man.:-Depts. of Health
P.E.I.:-Dept. of Health

Hospital Services Commission
N.S.:-Hospital Services Planning Commission
Ont.:-Ontario Hospital Services
Sask., Alta.:-Depts. of Public Health
B.C.:-Dept. of Health Services and Hospital Insurance

## HOUSE OF <br> COMMONS

See "Parliament"

## Sources for Federal Data

Central Mortgage and Housing Corporation (long-term mortgage loans for new houses and lowrental housing projects; National Housing Act financing; loans to universities for resident student accommodation; loans to municipalities for sewage treatment projects; mortgage lending; insurance of loans)
Dept. of Northern Affairs and National Resources
Northern Administration Branch (Eskimo housing)
Dept. of Veterans Affairs (home construction assistance for veterans)
National Research Council
Division of Building Research (construction materials, building codes and practice, soil and snow mechanics, housing standards)
Dominion Bureau of Statistics

Dept. of Citizenship and Immigration Information Division
Dept. of National Health and Welfare
Quarantine, Immigration Medical and Sick Mariners Division
Dominion Bureau of Statistics


## IMMIGRATION

INCOME TAX
See "Taxation"

Dept. of Citizenship and Immigration Indian Affairs Branch
Dept. of National Health and Welfare (health and hospital services)
Dept. of Northern Affairs and National Resources
Northern Administration Branch
National Museum of Canada (historical and archaeological information)
INDIANS
$\qquad$

Nfld.:-Dept. of Public Welfare (Indians in Labrador)
Que.:-Dept. of Tourism, Game and Fish
Ont.:-Dept. of Public Welfare
Man.:-Dept. of Welfare, Community Development Branch
Sask.:-Provincial Committee on Minority Groups
Executive Council
B.C.:-Dept. of Labour, Provincial Advisory Committee on Indian Affairs

Dept. of Industry
National Design Branch
Dept. of Secretary of State
Patent and Copyright Office

$\left\{\begin{array}{c}\text { Man.:-Dept. } \\ \begin{array}{c}\text { Commerce, } \\ \text { Institute }\end{array} \\ \text { of Manitoba }\end{array}\right.$

INDUSTRIAL DEVELOPMENT

See
"Manufacturing"


## Sources for Federal Data

## Subject

## Sources for Provincial Data

Dept. of Mines and Technical Surveys Surveys and Mapping Branch
Dept. of Agriculture
Agricultural Rehabilitation and Development Division
Dept. of Citizenship and Immigration Information Division (land settlement)
Dept. of Northern Affairs and National Resources
Northern Administration Branch (Yukon and N.W.T.)
Dept. of Transport
Real Estate Branch
Dept. of Veterans Affairs
Veterans Land Administration
Public Archives (early data re settlement)

## LANDS AND <br> LAND SETTLEMENT

Royal Canadian Mounted Police (Enforces Federal Statutes in all parts of Canada; in the prooinces, exclusive of Quebec and Ontario, it carries out, under contract, enforcement of the Criminal Code and Prootncial Statutes and polices a number of municipalities; is the only lawenforcement body in the Yukon and N.W.T.)

Clerk of the Senate of Canada
Clerk of the House of Commons
Dept. of Justice
Dept. of Northern Affairs and National Resources (Yukon and N.W.T.)

Queen's Printer (distribution and sale of the Statutes of Canada and texts of federal legislation)
Library of Parliament
Privy Council Office
For Acts administered by individual Federal Depts., see pp. 123-127 of this volume.

## LAW ENFORCEMENT

(Nfld.:-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 Lands and Mines

Que.:-Dept. of Lands and Forests
Dept. of Agriculture and Colonization
Ont., Alta.:-Depts. of Lands and Forests
Man.:-Dept. of Mines and Natural Resources, Lands Branch
Sask.:-Dept. of Agriculture, Lands Branch
Attorney General, Land Titles
B.C.:-Dept. of Agriculture, Land Clearing
Dept. of Lands, Forests and Water Resources

## Sources for Federal Data

## Subject

Sources for Provincial Data
(Nfld.:-Dept. of Mines, Agriculture, and Resources
P.E.I., N.B., Ont.:-Depts. of Agriculture, Livestock Branches
N.S.:-Dept. of Agriculture, Animal Husbandry Branch
Que.:-Dept. of Agriculture and Colonization, Animal Products Branch
Dept. of Industry and Commerce, Bureau of Statistics
Man.:-Dept. of Agriculture and Conservation, Livestock Branch
Sask.:-Dept. of Agriculture, Animal Industry Branch
Alta., B.C.:-Provincial Bureaus of Statistics
Depts. of Agriculture, Livestock Branches

## Dominion Bureau of Statistics

Bank of Canada
Industrial Development Bank
Dept. of Defence Production (for defence items)
Dept. of Finance (Small Businesses Loans Act
Dept. of Industry
Industrial Promotion Branch
National Design Branch
Dept. of Secretary of State Companies and Corporations Branch
Dept. of Trade and Commerce Economics Branch
National Research Council
Canadian Patents and Development Limited (utilization of new scientific processes)
National Film Board

## LIVESTOCK

(Nfld.:-Dept. of Economic Development
P.E.I.:-Dept. of Industry and Natural Resources
N.S.:-Dept. of Trade and Industry
N.B.:-Dept. of Finance

Dept. of Industry and Development
Que.:-Dept. of Industry and Commerce, Bureau of Statistics
Ont.:-Dept. of Economics and Development, Trade and Industry Branch and Special Research and Surveys Branch
Man.:-Dept. of Industry and Commerce
Sask.:-Economic Advisory and Planning Board
Dept. of Industry and Information
Alta.:-Dept. of Industry and Development
Alberta Bureau of Statistics
B.C.:-Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Dept. of Mines and Technical Surveys
Surveys and Mapping Branch
Marine Sciences Branch
Geological Survey
Geographical Branch
Dominion Observatories
Mineral Resources Division
Dept. of Agriculture (soil survey and economics survey maps)
Dept. of Fisheries
Information and Educational Service (fisheries maps)
Dept. of Forestry
Information and Technical Services (forestry maps)
Dept. of Transport (meteorological maps)
National Capital Commission (planning maps)
National Research Council
Division of Building Research Climatological Atlas of Canada
Public Archives (maps relating to history and cartography)
Dominion Bureau of Statistics (economic and census maps)

## MAPS AND CHARTS

Nfld.:-Dept. of Mines, Agriculture, 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 Industry and Commerce, Drafting Division Dept. of Agriculture
Ont.:-Dept. of Mines
Dept. of Lands and Forests
Dept. of Highways
Dept. of Travel and Publicity
Man.:-Dept. of Mines and Natural Resources, Surveys Branch
Sask.:-Dept. of Natural Resources
Dept. of Industry and Information
Alta.:-Dept. of Lands and Forests
Alberta Travel Bureau
B.C.:-Dept. of Lands, Forests and Water Resources

## Sources for Federal Data

## Subject

Sources for Provincial Data

Dept. of Agriculture
Administration Branch
Economics Division
Dept. of Trade and Commerce
Trade Services Branch
Commodities Branch
Dominion Bureau of Statistics

Dept. of Mines and Technical Surveys
Geological Survey of Canada
Mines Branch
Mineral Resources Division
Dept. of Trade and Commerce
Economics Branch
Dominion Bureau of Statistics (for production data)

## METALS

See also "Iron and Steel"

## METEOROLOGY <br> See "Climate"

MARRIAGES
See "Vital Statistics"

## MERCHANDISING

(Man.:-Dept. of Industry and Commerce
Sask.:-Dept. of Industry and Information
Alta.:-Dept. of Industry and Development
B.C.:-Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
(Nffd.:-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.:-Dept. 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 Commerce, Bureau of Economics and Statistics
Dept. of Mines and Petroleum Resources

Dept. of Mines and Technical Surveys.
Geological Survey of Canada
Mines Branch
Mineral Resources Division
Dept. of Northern Affairs
and National Resources
Northern Administration Branch (Yukon and N.W.T.)
Dominion Bureau of Statistics (for production data)

National Film Board
(Produces documentary films, newsreels and short subjects for theatrical, non-theatrical and television distribution; film-strips and photographs for informational, educational and archioal purposes; other visual materials devoted to the interpretation of the Canadian scene to audiences both at home and abroad; and maintains a large film preoiew library for the benefit of government departments and other official bodies.)
Canadian Broadcasting Corporation (Produces 16 mm . films for broadcasting over its own networks and stations. Some of these are available for export sales.)
National Gallery of Canada (library of films on art)

## MINING AND MINERALS

MOTION PICTURES
(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.:-Dept. of Mines and Natural Resources, Mines Branch
Sask.:-Dept. of Mineral Resources
Alta.:-Dept. of Mines and Minerals
B.C.:-Dept. of Mines and Petroleum Resources
(Nfld., P.E.I., N.B.:-Purchase films but do not produce them
N.S., Que., Alta., B.C.:-Produce educational or informational films
Ont.:-Dept. of Travel and Publicity, Theatres Branch and Photography Branch (Films are available to the public from several other departments)
Man.:-Dept. of Industry and Commerce
Sask.:-Dept. of Industry and Information
Dept. of Education, Visual Education Branch
Alta.:-Dept. of Industry and Development, Photographic Branch
B.C.:-Dept. of Recreation and Conservation
(All provinces have Motion Picture Censorship Boards. Details available from: Depts. of Education and Travel,
Prooincial Censorship Boards and
National Film Board Regional Offices.)

## Sources for Federal Data

Dominion Bureau of Statistics
Public Finance and Transportation Division
Dept. of Finance (municipal grants)
Dept. of Northern Affairs and National Resources (Yukon and N.W.T.)

## Subject

## MUNICIPAL AFFAIRS

## Sources for Provincial Data

National Gallery of Canada (paintings, sculpture, etc.)
Dept. of Northern Affairs and National Resources
National Museum of Canada
Canadian War Museum
National Aviation Museum
Laurier House, Ottawa (historical)
National Historic Parks Museums
Queen's Printer (UNESCO)

Comptroller of the Treasury
Dominion Bureau of Statistics


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, Musée de la Province de Québec, Quebec Commercial and Industrial Museum of Montreal
Dept. of Cultural Affairs
Ont.:-Royal Ontario Museum, Art and Archaeology, Life Sciences and Earth Sciences Divisions
Dept. of Public Records and Archives
Man.:-Manitoba Museum, Winni-
peg
Sask.:-Provincial Museum, Regina Western Development Museum, Saskatoon
Alta.:-Provincial Archives, Edmonton
B.C.:-Provincial Museum of Na tural History and Anthropology, Provincial Archives (including Helmcken House), Victoria
Also provincial universities of Sask., Alta., and B.C.

Dept. of Transport
Marine Services (aids to marine navigation; secondary canals)
Telecommunications Branch (radio aids to navigation)
Information Services
Canadian Maritime Commission
Dept. of Mines and Technical Surveys
Hydrographic Service
Legal Surveys and Aeronautical Charts Division
Dept. of Public Works (construction and maintenance of harbour and river works, incl. graving docks and marine engineering generally)
Harbours and Rivers Engineering Branch
Information Services
National Harbours Board
National Research Council
Radio and Electrical Engineering Division (applications of radar to navigation)
Division of Mechanical Engineering (model-testing basin and hydraulic models)
St. Lawrence Seaway Authority (St. Lawrence-Great Lakes canals)

## Sources for Federal Data

Subject
$\rightarrow$


## NUTRITION

Inspection and Consumer Service
Queen's Printer (FAO; WHO)

## Sources for Provincial Data

(Nfld., P.E.I., N.B., Que.:-Depts. of Health
N.S.:-Dept. of Public Health

Ont.:-Dept. of Health
Dept. of Agriculture. Home Economics Service
Man.:-Dept. of Health, Health Education Branch
Sask.:-Dept. of Public Health, Nutrition Division
Alta.:-Dept. of Agriculture, Nutritionist
Dept. of Public Health
B.C.:-Dept. of Health Services and Hospital Insurance
$\left.\begin{array}{l}\text { Dept. of Mines and Technical } \\ \text { Surveys } \\ \text { Marine Sciences Branch } \\ \text { Dept. of Fisheries } \\ \text { Fisheries Research Board }\end{array}\right\} \quad$ OCEANOGRAPHY $\left\{\begin{array}{l}\text { Que.:-Dept. of Tourism, Game and } \\ \text { Fish } \begin{array}{l}\text { Marine Biological Station of } \\ \text { Grande Riviere } \\ \text { Fisheries Training School }\end{array}\end{array}\right.$

Dept. of Mines and Technical Surveys.
Geological Survey of Canada
Mineral Resources Division
Mines Branch
Dept. of Citizenship and Immigration
Indian Affairs Branch (Indian reserves)
Dept. of Northern Affairs and National Resources
Northern Administration Branch (Yukon and N.W.T.)
National Energy Board
Northern Ontario Pipe Line Crown Corporation
Dominion Bureau of Statistics

OIL AND

## NATURAL GAS

Nfld.:-Dept. of Mines, Agriculture, and Resources
P.E.I.:-Dept. of Industry and Natural Resources
N.S.:-Dept. of Mines
N.B.:-Dept. of Lands and Mines

Ont.:-Dept. of Energy Resources Dept. of Mines
Man.:-Dept. of Mines and Natural Resources, Mines Branch
Sask.:-Dept. of Mineral Resources Saskatchewan Power Corporation Alta.:-Dept. of Mines and Minerals, Oil and Gas Conservation Board, Calgary
Alberta Bureau of Statistics
B.C.:-Dept. of Mines and Petroleum Resources



Sources for Federal Data

Sources for Provincial Data
(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 Tourism, Game and Fish
Ont.:-Dept. of Lands and Forests, Conservation Branch and Parks Branch
Man.:-Dept. of Mines and Natural Resources, Forestry Branch
Sask.:-Dept. of Natural Resources
B.C.:-Dept. of Recreation and Conservation
Nfld.:-Dept. of Provincial Affairs
P.E.I., N.B., Sask., Alta., B.C.:Legislative Assemblies
N.S.:-House of Assembly

Que.:-Legislative Council Legislative Assembly
Ont.:-Legislative Assembly
Clerk of the Legislative Assembly
Man.:-Legislative Council

## PHOTOGRAPHIC MATERIAL

See also
"Motion Pictures" and "Tourist Trade"

## POPULATION



Sask.:-Dept. of Industry and Information, Saskatchewan Government Photo Services
(Photographs are available from many provincial government departments in all provinces.)

Nfld.:-Dept. of Health
P.E.I.:-Travel Bureau
N.S.:-Dept. of Public Health, Vital Statistics Branch
N.B.:-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, Economics Branch
Man.:-Dept. of Industry and Commerce
Dept. of Municipal Affairs
Sask.:-Dept. of Public Health, Vital Statistics Branch
Legislative Library
Alta.:-Dept. of Industry and Development, Provincial Statistician
B.C.:-Dept. of Health Services and Hospital Insurance. Director of Vital Statistics.
Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Dominion Bureau of Statistics (for all census and estimated population statistics)
Dept. of Citizenship and Immigration Information Division (Indians and immigrants)
Dept. of Northern Affairs and National Resources
Northern Administration Branch (Eskimos)
Public Archives (early census and settlement records)

## Sources for Federal Data

## Subject

Sources for Provincial Data
Post Office Department
Public Relations (general postal information)
Accounting Branch (money orders, savings bank, philatelic services, etc.)
Postal Rates and Classification Branch (postage rates, etc.)

(Nfld.:-Dept. of Mines, Agriculture, and Resources
P.E.I., N.S.:-Depts. of Agriculture
N.B., Alta., B.C.:-Depts. of Agriculture, Poultry Branches
Que.:-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
Protocol Branch

## PRECEDENCE

 n AND CEREMONIAL(Nfld:-Dept. of Provincial Affairs P.E.I., N.S., B.C.:-Depts. of Provincial Secretary
Man.:-Dept. of Provincial Secretary, Clerk of the Executive Council


Ont.:-Dept. of Economics and Development, Special Research and Surveys Branch
Man.:-Dept. of Industry and Commerce
Sask.:-Economic
Advisory and Planning Board
B.C.:-Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Dept. of Secretary of State
Administration and Registration Branch
Public Archives (early records)

PUBLIC DOCUMENTS
(Commissions of Appointment, Proclamations, Land Grants, etc.)

Nfld.:-Dept. of Provincial Affairs Dept. of Mines, Agriculture, and Resources

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Dept. of Public Works
Information Services
Dept. of Labour
Industrial Relations Branch (fair wages)
Dept. of Transport
Marine and Air Services
St. Lawrence Seaway Authority

Canadian Broadcasting Corporation
Board of Broadcast Governors (regulations for operation of radio and TV stations and networks both public and private)
Canadian Overseas Telecommunication Corporation
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)


## PUBLIC WORKS

All Provinces:-Depts. of Public Works
Additional:-Ont.: - The HydroElectric Power Commission of Ontario
Ontario Water Resources Commission

## Sources for Federal Data

Dept. of Veterans Affairs (veterans)
Dept. of Citizenship and Immigration Information Division (Indians)
Dept. of Justice,
National Parole Board
Dept. of Labour
Civilian Rehabilitation Branch
Dept. of National Health and Welfare
Dept. of Northern Affairs and National Resources
Northern Administration Branch (Eskimos)
National Film Board

Canada Council (humanities and social sciences)

| Subject |
| :---: |
| REHABILITATION <br> (of persons) |

(Nfld.:-Dept. of Health, Provincial Co-ordinator of Rehabilitation
P.E.I.:-Dept. of Welfare and Labour
N.S.:-Dept. of Public Health, Provincial Rehabilitation Coordinator
N.B.:-Dept. of Health, Provincial Co-ordinator of Rehabilitation
Que.:-Dept. of Family and Social Welfare
Dept. of Youth
Dept. of Labour
Ont.:-Workmen's Compensation Board
Dept. of Health, Rehabilitation Division and Alcoholism and Drug Addiction Research Foundation of Ontario
Dept. of Reform Institutions
Man.:-Dept. of Health, Provincial Co-ordinator of Rehabilitation Services
Sask.:-Dept. of Social Welfare and Rehabilitation, Provincial Co-ordinator of Rehabilitation of Disabled Persons
Alta.:-Dept. of Public Welfare (rehabilitation of Metis)
B.C.:-Dept. of Health Services and Hospital Insurance, Rehabilitation Co-ordinator
(Nfld.: - Dept. of Economic Development
P.E.I.:-Dept. of Industry and Natural Resources
N.S.:-Dept. of Municipal Affairs

Dept. of Trade and Industry
N.B.:-Depts. of Finance and Industry and Development
Que.:-Depts. of Lands and Forests, Labour, Roads. Family and Social Welfare, Youth. Natural Resources, and Industry and Commerce
Ont.:-Dept. of Economics and Development, Special Research and Surveys Branch
Dept. of Energy Resources
Dept. of Lands and Forests
Ontario - St. Lawrence Development Commission
Dept. of Municipal Affairs, Community Planning Branch
Ontario Northland Transportation Commission. North Bay
Man.:-Dept. of Mines and Natural Resources
Dept. of Industry and Commerce
Manitoba Development Authority
Sask.:-Dept. of Industry and Information, Industrial Development Office
Alta.:-Dept. of Industry and Development
B.C.:-Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

## Sources for Federal Data

National Research Council
Laboratory Divisions (applied biology, building research, pure and applied chemistry, mechanical engineering, aeronautical research, pure and applied physics, radio and electrical engineering)
Regional Laboratories at Saskatoon, Sask., and Halifax, N.S.
Medical Research Council (fellowships, associateships and grants-in-aid)
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 Forestry
Forest Research Branch
Forest Products Research Branch
Forest Entomology and Pathology Branch
Dept. of Mines and Technical Surveys Geological Survey of Canada
Mines Branch
Dominion Observatories
Geographical Branch
Marine Sciences Branch
Dept. of National Defence
Defence Research Board
Dept. of National Health and Welfare
Dept. of Northern Affairs and National Resources
National Museum of Canada
National Parks Branch (wildlife)
Northern Co-ordination and Research
Dept. of Transport (aviation, radio, meteorology, navigation)
Dept. of Veterans Affairs (medical research)
Fisheries Research Board
National Gallery of Canada
Queen's Printer
(International Atomic Energy Agency)

Subject
Sources for Provincial Data

Nfld.:-Dept. of Economic Development
P.E.I.:-Dept. of Industry and Natural Resources
N.S.:-Nova Scotia Research Foundation
N.B.:-Dept. of Finance

Dept. of Industry and Development, Research and Development Division
Que.:-Dept. of Agriculture and Colonization
Dept. of Natural Resources
Dept. of Roads
Ont.:-Ontario Research Foundation Dept. of Agriculture
Dept. of Lands and Forests
Alcoholism and Drug Addiction Research Foundation of Ontario Hydro-Electric Power Commission of Ontario
Man.:-Various Depts., such as Health and Mines and Natural Resources
Manitoba Research Council
Sask.: - Saskatchewan Research Council
Alta.:-Alberta Research Council
B.C.:-Dept. of Industrial Development, Trade, and Commerce. B.C. Research Council

## SMALL LOANS AND MONEY-LENDERS See "Banking"

| SOCIAL |
| :---: |
| SECURITY |
| See |
| "Family |
| Allowances" |
| "Blindness |
| Allowances" |
| "Old Age |
| Assistance"" |
| "Old Age |
| Security" |
| "Disabled Persons |
| Allowances" |
| "Workmen's |
| Compensation" |
| "Labour" |
| "Unemployment" |
| "Veterans Affairs" |
| "Economic and |
| Social Research" |

> SOCIAL WELFARE See "Welfare"

Dept. of Trade and Commerce
Standards Branch (for inquiries on electricity and gas inspection, weights and measures, precious metals marking, commodity standards and national trade mark matters)
Canadian Government Specifications Board (specifications for purchasing)
Canadian Standards Association
Central Mortgage and Housing Corporation (apartment building standards; NHA financed)
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

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SURPLUS
GOVERNMENT PROPERTY

Subject
Sources for Provincial Data
(Nfld., Que.:-Depts. of Finance P.E.I.:-Provincial Treasurer
N.S.:-Dept. of Finance and Economics
N.B.:-Dept. of Finance

Dept. of Industry and Development
Ont.:-Treasury Dept.
Man., Sask.:-Provincial Treasury Depts.
Alta.:-Provincial Treasurer's Dept.
Dept. of Provincial Secretary
Dept. of Municipal Affairs
B.C.:-Dept. of Finance, Surveyor of Taxes

Board of Broadcast Governors
Canadian Broadcasting Corporation
Dept. of Transport
Telecommunications Branch
National Research Council
National Film Board

TELEVISION
See also "Radio"

| Dept. of Mines and Technical |
| :---: |
| Sopographical Survey Division <br> National Research Council <br> Applied Physics Division (photo- <br> grammetric research) |


(Nfld.:-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.:-Dept. of Lands and Forests, Lands and Surveys Branch
Man.:-Dept. of Mines and Natural Resources, Surveys Branch
Sask.:-Dept. of Natural Resources Alta.; B.C.:-Depts. of Lands and Forests

Nfld.:-Tourist Development Board P.E.I.:-Dept. of Provincial Secretary. Tourist and Information Branch
N.S.:-Dept. of Trade and Industry, Travel Bureau
N.B.:-New Brunswick Travel Bureau
Que.:-Dept. of Tourism, Game and Fish
Ont.:-Dept. of Travel and Publicity
Man.:-Dept. of Industry and Commerce
Sask.:-Dept. of Industry and Information, Travel Bureau
Alta.:-Dept. of Industry and $\mathrm{De}-$ velopment, Alberta Travel Bureau
B.C.:-Dept. of $\underset{\text { Conservation, Travel Branch }}{\text { Recreation }}$ and

## Sources for Federal Data

Dept. of Trade and Commerce
Agriculture and Fisheries Branch
Canadian Government Exhibition Commission
Commodities Branch (for exports, imports, transportation, etc.)
Export. Credits Insurance Corporation
International Trade Relations Branch
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
Economics Division
Dept. of Secretary of State
Companies and Corporations Branch
Queen's Printer (Organization for Economic Co-operation and De velopment, GATT)
National Film Board
Dominion Bureau of Statistics

Subject
Sources for Provincial Data

For incorporation of companies under provincial law, address Provincial Secretaries except B.C., where Attorney General's Department is the authority.
Nfld.:-Dept. of Economic Development
P.E.I.:-Dept. of Industry and Natural Resources
N.S.:-Dept. of Trade and Industry
N.B., Alta.:-Depts. of Industry and Development
Que., Man.:-Depts. of Industry and Commerce
Ont.:-Dept. of Economics and Development, Trade and Industry Branch and Special Research and Surveys Branch
Sask.:-Dept. of Industry and Information, Trade and Business Information Services
B.C.:-Dept. of Industrial Development. Trade, and Commerce

Dept. of the Secretary of State
Bureau for Translations
National Research Council
National Science Library (information re location of completed scientific translations in Canada, other countries of the Commonwealth, and the United States)

TRANSLATIONS
Que.:-Legislative Assembly Bureau for Translations

Dept. of Transport
Information Services
Air Transport Board (regulation of commercial air services)
Board of Transport Commissioners (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)
Canadian Maritime Commission
Canadian National Railways
Dept. of Forestry (access roads)
Dept. of Northern Affairs and National Resources (Roads to Resources and Territorial Development Roads)
National Parks Branch (highways in National Parks)
Dept. of Public Works (TransCanada Highway, roads and bridges in the North and in National Parks and international and interprovincial bridges)
Information Services
Dept. of Trade and Commerce
Trade Services Branch
National Harbours Board
Northern Transportation Company Limited (Crown)
St. Lawrence Seaway Authority
Trans-Canada Air Lines
National Film Board
Dominion Bureau of Statistics

## TRANS PORTATION

Nfld., N.S.:-Depts. of Highways
P.E.I.:-Dept. of Industry and Natural Resources
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, Special Research and Surveys Branch
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
Saskatchewan Transportation Company
Alta.:-Dept. of Highways
Highway Traffic Board
Alberta Freight Bureau
B.C.:-Dept. of Commercial Transport
Public Utility Commission
Dept. of Highways
Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Sources for Federal Data
Subject
Sources for Provincial Data
(Nfld.:-Dept. of Mines, Agriculture, and Resources
P.E.I.:-Dept. of Industry and Natural Resources
N.S., Ont., Alta.:-Depts. of Lands and Forests
N.B.:-Dept. of Lands and Mines

Que.:-Dept. of Tourism, Game and Fish
Man.:-Dept. of Mines and Natural Resources, Game Branch
Sask.:-Dept. of Natural Resources, Fur Marketing Service
B.C.:-Dept. of Recreation and Conservation
Nfld., N.S., Que., Man., Sask., Alta.:-Depts. of Labour
N.B.:-Office of the Economic Advisor
Ont.:-Dept. of Economics and Development, Economics Branch
Dept. of Public Welfare
B.C.:-Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Dept. of Labour
(Nfld., P.E.I., N.S., Man., Sask.:Depts. of Public Welfare
N.B.:-Dept. of Youth and Welfare

Que.:-Dept. of Family and Social
Welfare
Ont.:-Dept. of Public Welfare, Director of General Welfare Assistance
B.C.:-Dept. of Social Welfare
(Ont.:-Dept. of Economics and Development, Housing Branch
Man.:-Dept. of Municipal Affairs, Municipal Affairs Branch
Manitoba Housing Commission
B.C.:-Dept. of Finance, Housing Commissioner
P.E.I.:-Provincial Secretary
N.S.:-Dept. of Public Welfare
N.B.:-Dept. of Youth and Welfare Que.:-Dept. of Family and Social Welfare
Ont.:-Dept. of Public Welfare, Soldiers Aid Commission
Sask.:-Dept. of Social Welfare, Rehabilitation Division
B.C.:-Dept. of Provincial Secretary

Nfld., N.B., Que.:-Depts. of Health
P.E.I.:-Dept. of Health, Director of Vital Statistics
N.S.:-Dept. of Public Health, Registrar General
Ont.:-Dept. of Provincial Secretary and Citizenship, Office of the Registrar-General
Man.:-Dept. of Welfare, Vital Statistics Division
Sask.:-Dept. of Publit 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

## Sources for Federal Data

Dept. of Labour
Industrial Relations Branch (fair wages)
Economics and Research Branch Legislation Branch
National Research Council
Division of Administration and Awards (recruitment and salary levels of scientific and technical personnel)
Dominion Bureau of Statistics

Dept. of Northern Affairs and National Resources
Water Resources Branch (Yukon and N.W.T. and federal interests in provinces)
Dept. of Agriculture
Prairie Farm Rehabilitation Administration
Dept. of Fisheries
Conservation and Development Service
Dept. of Mines and Technical Surveys
Mines Branch (industrial waters)
Geological Survey of Canada (ground-water studies)
National Film Board

Dept. of National Health and Welfare
Dept. of Citizenship and Immigration Indian Affairs Branch
Dept. of Northern Affairs and National Resources
Northern Administration Branch (for Eskimos)
National Advisory Committee on the Rehabilitation of Disabled Persons
Northwest Territories Council, Ottawa
Unemployment Insurance Commission
Yukon Territorial Council, Whitehorse
National Film Board
Dominion Bureau of Statistics

Dept. of Northern Affairs and National Resources
Canadian Wildlife Service
National Museum of Canada
Commissioner of Yukon Territory, Whitehorse
Dept. of Fisheries
Information and Consumer Service
National Film Board

Dept. of Labour
Accident Prevention and Compensation Branch
Merchant Seamen Compensation Board
Dept. of Northern Affairs and National Resources (Yukon and N.W.T.)

## Subject

## WAGES AND WORKING CONDITIONS

## Sources for Provincial Data

All Provinces:-Depts. of Labour Additional:-Ont.:-Dept. of Economics and Development, Economics Branch
Man.:-Dept. of Industry and Commerce, Business Research Branch
Alta.:-Dept. of Industry and Development
B.C.:-Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Nfld.:-Dept. of Mines, Agriculture, and Resources
N.S.:-Nova Scotia Power Commission
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
Sask., Alta.:-Depts. of Agriculture B.C.:-Dept. of Lands, Forests and Water Resources

WELFARE
For Welfare of
Veterans see "Veterans Affairs"
WILDLIFE
(Nfld.:-Dept. of Mines, Agriculture, and Resources
P.E.I.:-Dept. of Industry and Natural Resources
N.S., Ont., Alta.:-Depts. of Lands and Forests
N.B.:-Dept. of Lands and Mines

Que.:-Dept. of Tourism, Game and Fish
Man.:-Dept. of Mines and Natural Resources
Sask.:-Dept. of Natural Resources, Wildlife Branch
B.C.:-Dept. of Recreation and Conservation

Provincial Workmen's Compensation Boards at:-
Nfd.:-St. John's
WORKMEN'S COMPENSATION
P.E.I.:-Charlottetown
N.S.:-Halifax; N.B.:-Saint John

Ont.:-Toronto; Man.:-Winnipeg
Sask.:-Regina; Alta.:-Edmonton
B.C.:-Vancouver

Que.:-Workmen's Compensation Commission

## PART II.-SPECIAL 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 and Public Relations Division, Dominion Bureau of Statistics.


| Subject and Article | Contributor | Edition | Page |
| :---: | :---: | :---: | :---: |
| Banking and Finance-concluded |  |  |  |
| The Underwriting and Distribution of Investments; their Influence on the Capital |  |  |  |
| Market. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | Investment Dealers Association of Canada......... | 1950 | 1088-1095 |
| Post-War Financial Policy |  | 1954 | 1061-1064 |
| The Canada Conversion Loan | E. C. Gould. | 1959 | 1130-1131 |
| Taxation in Canada. | F. R. Irwin. | 1961 | 1038-1050 |
| Commercial Banking in Canada. | J. Douglas Gibson. | 1961 | 1115-1120 |
| Citizenship- |  |  |  |
| Early Naturalization Procedure and Events Leading up to the Canadian Citizenship |  |  |  |
| Act......................................... | - | 1951 | 153-155 |
| Climate and Meteorology- |  |  |  |
| Factors which Control Canadian Weather. . . | Str Frederick Stupart... | 1925 | 36-40 |
| Temperature and Precipitation of Northern Canada. | A. J. Connor............... | 1930 | 41-56 |
| Droughts in Western Canada. | A. J. Connor...... . . . . . . . | 1933 | 47-59 |
| Meteorology Related to the Science of Aviation | J. Patterson............... | 1943-44 | 24-29 |
| *The Climate of Canada (textual material appears in the 1959 Year Book and the tabular data in the 1960 edition but the reprint includes both textual and tabular data). | C. C. Boughner and M. K. Thomas $\{$ | 1959 | $\begin{aligned} & 23-51 \\ & 31-77 \end{aligned}$ |
| Communications- |  |  |  |
| *The Democratic Functioning of the Press ... | W. A. Buchanan. | 1945 | 744-748 |
| *History and Development of the Canadian Broadcasting Corporation | Augustin Frigon......... | 1947 | 737-740 |
| The Telecommunications Branch of the Department of Transport. | - | 1957-58 | 894-896 |
| *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 |
| (Reprint includes both articles.) |  |  |  |
| Constitution and Government- |  |  |  |
| Provincial and Local Government in- |  |  |  |
| Maritime Provinces | Thomas Flint.............. | 1922-23 | 102-105 |
| Quebec. | G. E. Marquis. . . . . . . . . . . | 1922-23 | 105-107 |
| Ontario | S. A. Cudmore...... . . . . . | 1922-23 | 107-109 |
| Prairie Provinces | E. H. Oliver. . . . . . . . . . . . . | 1922-23 | 110-113 |
| British Columbia. | John Hosie. . . . . . . . . . . . . | 1922-23 | 113-115 |
| Canada and the League of Nations. . . . . . . . | N. A. Robertson........... | 1931 | 115-122 |
| The Government of Canada's Arctic Territory | R. A. Grbson............... | 1938 | 92-93 |
| The Evolution of the Constitution of Canada down to Confederation. | S. A. Cudmore and <br> E. H. Coleman. | 1942 | 34-40 |
| The British North America Act, 1867....... | E. H. Colman.. | 1942 | 40-59 |
| Canada's Present Status in the British Commonwealth of Nations. | W. P. J. O'Meara.......... | 1943-44 | 41-47 |
| Canada's Growth in External Status......... | F. H. Soward............. | 1945 | 74-79 |
| Canada's Part in the Relief and Rehabilitation of the Occupied Territories | - | 1945 | 79-85 |


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| Constitution and Government-concluded |  |  |  |
| The Constitutional Development of Newfoundland prior to Union with Canada, |  |  |  |
| 1949................ ...................... | - | 1950 | 85-92 |
| Federal-Provincial Relations | - | 1951 | 102-105 |
| The Terms of Union of Newfoundland with Canada, 1949. | - | 1951 | 56-57 |
| Financial Administration of the Government of Canada | - | 1956 | 101-107 |
| *The Privy Council Office and Cabinet Secretariat in Relation to the Development of Cabinet Government. | W. E. D. Halliday. | 1956 | 62-70 |
| *Amendment of the Canadian Constitution... | J. R. Mallory ............. | 1961 | 51-57 |
| Construction |  |  |  |
| The Effects of Government Wartime Expenditures on the Construction Industry... | H. Carl Goldenberg.... | 1941 | 366-368 |
| *The Changing Pattern of Canada's Housing. |  | 1957-58 | 732-734 |
| *The Construction Industry in Canada........ | Wm. J. H. Purcell. | 1961 | 684-689 |
| Crime and Delinquency- . |  |  |  |
| A Historical Sketch of Criminal Law and Procedure. | R. E. Watts.. | 1932 | 897-899 |
| The Influence of the Royal Canadian Mounted Police in the Building of Canada. | S. T. Wood. | 1950 | 317-331 |
| The Philosophy of the Royal Canadian Mounted Police. | - | 1957-58 | 332-334 |
| Education- | J. E. Robbins. | 1947 | 313-315 |
| Royal Commission on National Development in the Arts, Letters and Sciences. | J. E. Robbins. . . . . . . . . . . | 1951 | 315-316 |
| Report of the Royal Commission on National Development in the Arts, Letters and Sciences. | - | 1952-53 | 342-345 |
| Fauna and Flora- |  |  | 32-36 |
| Faunas of Canada. | P. A. Taverner. R. M. Anderson. | $1922-23$ 1937 | $32-36$ $29-52$ |
| Flora of Canada................................. | John Adams... | 1938 | 30-59 |
| The Canadian Government's Reindeer Experiment | R. A. Gibson. | 1943-44 1951 | $17-23$ $38-43$ |
| *Migratory Bird Protection in Canada........ | - | 1954 | 33-36 |
| *The Barren-Ground Caribou. Migratory Bird Legislation.. | - | 1955 | 41-45 |
| *The Musk-ox............ . . . . . . . . . . . . . . . . . . | - | 1957-58 | 28-30 |
| Fisheries- |  |  |  |
| The Effects of the War on Canadian Fisheries. | D. B. Finn | 1952-53 | 34-36 |
| Game Fish in Canada's National Parks. ... *Canada's Commercial Fisheries Resources... | F. H. Wooding | $\begin{array}{r}1955 \\ \hline 105\end{array}$ | 578-590 |
| *Scientific Management of Game Fish in Canada's National Parks.. Canadfish Species in the Canadian Fisheries | T. H. Turner. . .......... | $\begin{array}{r} 1956 \\ 1957-58 \end{array}$ | $35-39$ $591-595$ |
| The Fisheries Research Board..... .... ... | J. L. Kask. . . . . . . . . . . . . . | 1959 | 584-588 |
| Canada's Commercial Fishery Resources and Their Conservation. | - | 1960 | 625-630 |


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| Forestry- |  |  |  |
| Physiography, Geology and Climate as Affecting the Forests. | - | 1934-35 | 311-313 |
| Noxious Forest Insects and Their Control.... | J. J. de Gryse. | 1947 | 389-400 |
| Canada's Forest Economy | - | 1951 | 425-437 |
| *The Pulp and Paper Industry in Canada. | - | 1952-53 | 467-475 |
| Administration of Crown Forests in Canada.. | - - | 1954 | 458-465 |
| *The Forest Products Laboratories of Canada. | J. H. Jenkins. | 1955 | 455-461 |
| *The Federal-Provincial Forestry Agreements | H. W. Beall... | 1956 | 459-466 |
| The Pulp and Paper Research Institute of Canada. | Rielle Thomson | 1957-58 | 489-491 |
| Fur Trade - |  |  |  |
| Fur Farming. . . . . . . . . . . . . . . . . . . . . . . . . . | W. M. Ritchie. | 1942 | 254-259 |
| The Development of Marshlands in Relation to Fur Production and the Rehabilitation of Fur-Bearers. | D. J. Allan | 1943-44 | 267-269 |
| The Fur Industry............................. | W. M. Ritchie. | 1961 | 618-622 |
| Geology- |  |  |  |
| Geology in Relation to Agriculture | Wyatt Malcolm. | 1921 | 68-72 |
| Geology and Economic Minerals. | George Hanson | 1942 | 3-14 |
| The Geological Survey of Canada | J. M. Harrison. | 1960 | 13-19 |
| Geology of Canada............... | A. H. Lang.... | 1961 | 1-14 |
| Health and Welfare- |  |  |  |
| Development of Public Health, Welfare and Social Security in Canada. | G. F. Davidson. | 1952-53 | 224-229 |
| The National Health Grant Program. | - | 1954 | 215-223 |
| *Mental Health and Tuberculosis...... | B. R. Buishen and C. A. Roberts. . | 1956 | 248-257 |
| Poliomyelitis Vaccine. | C. A. Roberas. | 1956 | 258-260 |
| Health in Canada. . . . . . . . . . . . . . . . . . . . . . | - | 1957-58 | 232-235 |
| Hospital Services and Hospital Insurance in Canada. | - | 1960 | 281-290 |
| *Federal Food and Drug Legislation in Canada | C. A. Morrell. | 1961 | 242-248 |
| Social Welfare Expenditures in Canada....... | J. W. Willard.. | 1962 | 217-222 |
| History - |  |  |  |
| *Canadian Chronology, 1497-1960............... | - | 1951-60 | ... |
| Insurance- |  |  |  |
| The Growth and Development of Life Insurance in Canada. | A. D. Watson. | 1933 | 937-944 |
| Fire and Casualty Insurance.................. | G. D. Finlayson. | 1942 | 842-846 |
| Insurance in Canada during the Depression and War Periods. | G. D. Finlayson. | 1947 | 1064-1074 |
| Labour- |  |  |  |
| *Seasonal Unemployment in Canada.......... | Eugen Forsey | $1956$ | $758-766$ |
| ${ }^{*}$ History of the Labour Movement in Canada. . | Eugene Forsey. | $1957-58$ | $795-802$ |
| Manufactures- |  |  |  |
| The Iron and Steel Industry................ | - | 1922-23 | 452-456 |
| The Influence of the Present War on Manufacturing. | - | 1943-44 | 354-362 |


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| Manufactures-concluded |  |  |  |
| Changes in Canadian Manufacturing Production from Peace to War, 1939-44. | - - | 1945 | 364-381 |
| The Automobile Industry in Canada......... | H. McLeod................. | 1947 | 521-525 |
| The Chemical Industries in Canada......... | H. McLeod. . . . . . . . . . . . . . | 1948-49 | 532-550 |
| *The Pulp and Paper Industry in Canada..... | - | 1952-53 | 467-475 |
| *Steel in Canada........................... | E. Westbrook and <br> F. M. Pelletier. | 1959 | 618-625 |
| *Canadian Metallurgical Development. | John Convey. | 1961 | 513-522 |
| Manufacturing Production during the Period 1945-59 | A. Cohen | 1962 | 600-609 |
| The Petrochemical Industry in Canada...... | G. E. McCormack. | 1962 | 609-615 |
| Mining- |  |  |  |
| Mining-A Historical Sketch.................. |  | 1939 | 309-310 |
| Geology and Economic Minerals............. | George Hanson.......... | 1942 | 3-14 |
| Government Control of Non-Ferrous Metals and Fuels in Wartime. | - | 1942 | 279-282 |
| The Coal Deposits and Coal Resources of Canada. | B. R. MacKay. . . . . . . . . . | 1946 | 337-347 |
| The Iron-Ore Resources of the QuebecLabrador Region. | W. M. Goodwin............ | 1950 | 505-512 |
| Titanium-The Basis of a New Industry in Quebec. | W. M. Goodwin. | 1950 | 512-513 |
| Post-War Expansion in Canada's Mineral Industry | G. H. Murray and Mrs. M. J. Giroux. . | 1952-53 | 476-495 |
| Canadian Crude Petroleum Situation........ | G. S. Hume. ........... . . | 1952-53 | 524-527 |
|  |  | 1954 | 540-544 |
| History of Pipeline Construction in Canada. . | G. S. Hume. . . . . . . . . . . . . | 1954 | 861-869 |
| *Canadian Metallurgical Development........ | John Convey | 1961 | 513-522 |
| National Defence- |  |  |  |
| The Royal Canadian Naval College......... | 一 | 1946 | $\begin{aligned} & 1081-1082 \\ & 1087-1088 \end{aligned}$ |
| The Royal Military College................ | - | 1946 | 1087-1088 |
| The British Commonwealth Air Training Plan-A Summary of the RCAF's Major Role in the War of 1939-45. | - | 1946 | 1090-1099 |
| Northwest Territories- <br> The Canadian Government's Reindeer Experiment. <br> *The Northland-Canada's Challenge......... | R. A. Gibson............... | $1943-44$ 1955 | $\begin{aligned} & 17-23 \\ & 22-32 \end{aligned}$ |
| Physiography and Related SciencesPhysical Geography of the Canadian Eastern Arctic. | R. A. Gibson.............. | 1945 | 12-19 |
| The Relation of Hydrography to Navigation and the War Record of the Hydrographic and Map Service. | F. C. G. Smith. . . . . . . . . . | 1946 | 14-18 |
| Hydrographical Features..................... | F. C. G. Smith. . . . . . . . . . | 1947 | 3-12 |
| *Physical Geography of the Canadian Western Arctic. | R. A. Gibson.............. . | 1948-49 | 9-18 |
| The Contribution to Science made by the Dominion Astrophysical Observatory ..... | J. A. Pearce............... | 1948-49 | 63-71 |
| *The Northland-Canada's Challenge........ |  | 1955 | 22-32 |
| *Geophysics in Canada....................... | C. S. Beals and <br> J. T. Wilson. | 1956 | 43-49 |


| Subject and Article | Contributor | Edition | Page |
| :---: | :---: | :---: | :---: |
| Physiography and Related Sciences-concl. Astronomy in Canada. |  |  |  |
|  | J. F. Heard | 1956 | 49-55 |
|  | A. E. Covington |  |  |
| The International Geophysical Year | D. C. Rose...... | 1959 | 54-57 |
| The Geological Survey of Canada. | J. M. Harrison. | 1960 | 13-19 |
| Geology of Canada. | A. H. Lang. | 1961 | 1-14 |
| The Drainage Basins of Canada |  | 1961 | 16-18 |
| Economic Regions of Canada... | N. L. Nicholson | 1962 | 17-23 |
| Population- ${ }^{\text {a }}$ - |  |  |  |
| Immigration Policy. | R. J. C. Stead. | 1931 | 189-192 |
| Colonization Activities. |  | 1936 | 201-202 |
| Occupational Trends in Canada, 1891-1931 | A. H. LeNeveu | 1939 | 774-778 |
| Nuptiality and Fertility in Canada. | Enid Charles. | 1942 | 100-115 |
| The Indians of Canada. | - | 1951 | 1125-1132 |
| *Developments in Canadian Immigration.... | - | 1957-58 | 154-176 |
| Integration of Postwar Immigrants.......... . | - | 1959 | 176-178 |
| *Native Peoples of Canada.................... | - | 1960 | 201-210 |
| Power Resources- <br> Conversion Program to 60 -cycle Power in Southern Ontario.. The St. Lawrence Power Project. |  |  |  |
|  | - | 1951 | 540-548 |
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| Research- |  |  |  |
| The Contribution to Science made by the Dominion Astrophysical Observatory . | J. A. Pearce | 1948-49 | 63-71 |
| Geophysics in Canada......... | C. S. Beals. | 1956 | 43-49 |
| Astronomy in Canada. |  |  |  |
|  | J. F. Heard.... . | 1956 | 49-55 |
|  | A. E. Covington |  |  |
| *The International Geophysical Year......... | D. C. Rose. | 1957-58 | 35-38 |
| The Fisheries Research Board. | J. L. Kask. | 1959 | 584-588 |
| Trade, Domestic- <br> Wartime Controls Affecting Distribution and Trade, 1945-46 <br> The Royal Commission on $\qquad$ |  |  |  |
|  | - | 1946 | 574-578 |
|  | W. F. Chown. | 1946 | 618-624 |
| *Marketing Farm-Produced Foods. |  | 1956 | 917-922 |
| 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 |
| Wartime Control of Transportation. | J. A. Wilson | 1943-44 | 567-575 |
| 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. Bоотн. . . | 1952-53 | 820-827 |
| Canals of the St. Lawrence Waterway. ....... | C. | 1954 | 830-833 |
| *History of the Canadian National Railways. | - | 1955 | 840-851 |
| The St. Lawrence Seaway................... . | - | 1955 | 885-888 |
| Traffic on the Great Lakes - St. Lawrence Seaway | - - | 1956 | 821-829 |
| The St. Lawrence Seaway in Operation | S. Judek. | 1960 | 851-860 |
| Revolution in Canadian Transportation | A. W. Currie | 1962 | 753-758 |

## PART III.-REGISTER OF OFFICIAL APPOINTMENTS*

The following list includes official appointments for the period Sept. 1, 1962 to Nov. 15, 1963, continuing the list published in the 1962 Year Book at pp. 1176-1181. Appointments to the Governor General's staff, judicial appointments other than those to the Supreme Court of Canada, and appointments of limited or local importance are not included.

Queen's Privy Council for Canada.-1962. Oct. 15, Mark Robert Drouin, Sillery, Que.: and Roland Michener, Toronto, Ont.: to be members. Dec. 21, Rt. Hon. John George Diefenbaker, Prime Minister of Canada: to be President. 1963. Feb. 12, Marcel-Joseph-Aimé Lambert, Edmonton, Alta.: to be a member. Feb. 20, Major-General Georges P. Vanier, Governor General of Canada: to be a member. Mar. 18, J.-H. Théogène Ricard, St. Hyacinthe, Que.; Frank Charles McGee, Don Mills, Ont.; and Martial Asselin, La Malbaie, Que.: to be members. Apr. 22, Walter Lockhart Gordon, Toronto, Ont.; Mitchell Sharp, Toronto, Ont.; Azellus Denis, Montreal, Que.; George James McIlraith, Ottawa, Ont.; William Moore Benidickson, Kenora, Ont.; Arthur Laing, Vancouver, B.C.: John Richard Garland, North Bay, Ont.; Lucien Cardin, Sorel, Que.; Allan Joseph MacEachen, Inverness, N.S.; Jean-Paul Deschatelets, Montreal, Que.; Hédard Robichaud, Caraquet, N.B.; J. Watson MacNaught, Summerside, P.E.I.; Roger Teillet, St. Boniface, Man.; Miss Judy La Marsh, Niagara Falls, Ont.; Charles Mills Drury, Westmount, Que.; Guy Favreau, Montreal, Que.; John Robert Nicholson, Vancouver, B.C.; Harry Hays, Calgary, Alta.; René Tremblay, Quebec, Que.; and Maurice Lamontagne, Montreal, Que.: to be members, Maurice Lamontagne to be also President. Apr. 26, Hon. Robert Taschereau, Chief Justice of Canada: to be a member. May 23, Robert Gordon Robertson, Deputy Minister of Northern Affairs and National Resources: to be Clerk of the Queen's Privy Council for Canada.

Lieutenant-Governors.-1963. Jan. 21, Hon. William Earl Rowe, Newton Robinson, Ont.: to be Lieutenant-Governor of the Province of Ontario from Mar. 1, 1963. Feb. 5, Robert L. Hanbidge, Kerrobert, Sask.: to be Lieutenant-Governor of the Province of Saskatchewan from Mar. 1, 1963. Fabian O'Dea, St. John's, Nfl.: to be LieutenantGovernor of the Province of Newfoundland from Mar. 1, 1963. Henry Poole MacKeen, Halifax, N.S.: to be Lieutenant-Governor of the Province of Nova Scotia from Mar. 1, 1963. June 21, Lt. Col. Willibald Joseph MacDonald, Charlottetown, P.E.I.: to be LieutenantGovernor of the Province of Prince Edward Island.

Cabinet Appointments.-1963. Feb. 12, Hon. Marcel-Joseph-Aimé Lambert: to be Minister of Veterans Affairs. Hon. Malcolm Vallace McCutcheon: to be Minister of Trade and Commerce. Hon. Gordon Churchill: to be Minister of National Defence. Mar. 18, J.-H. Théogène Ricard and Hon. Frank Charles McGee: to be members of the Administration. Hon. Martial Asselin: to be Minister of Forestry. Apr. 22, Hon. Lionel Chevrier: to be Minister of Justice and Attorney General. Hon. Paul Joseph James Martin: to be Secretary of State for External Affairs. Hon. William Ross Macdonald: to be a member of the Administration. Hon. John Whitney Pickersgill: to be Secretary of State of Canada. Hon. Paul Theodore Hellyer: to be Minister of National Defence. Hon. J. Watson MacNaught: to be Solicitor General of Canada. Hon. Walter Lockhart Gordon: to be Minister of Finance and Receiver General. Hon. Mitchell Sharp: to be Minister of Trade and Commerce. Hon. Azellus Denis: to be Postmaster General. Hon. George James McIlraith: to be Minister of Transport. Hon. William Moore Benidickson: to be Minister of Mines and Technical Surveys. Hon. Arthur Laing: to be Minister of Northern Affairs and National Resources. Hon. John Richard Garland: to be Minister of National Revenue. Hon. Lucien Cardin: to be Associate Minister of National Defence. Hon. Allan Joseph MacEachen: to be Minister of Labour. Hon. Jean-Paul Deschatelets: to be Minister of Public Works. Hon. Hédard Robichaud: to be Minister of Fisheries.

[^366]Hon. J. Watson MacNaught: to be a member of the Administration. Hon. Roger Teillet: to be Minister of Veterans Affairs. Hon. Judy LaMarsh: to be Minister of National Health and Welfare. Hon. Charles Mills Drury: to be Minister of Defence Production. Hon. Guy Favreau: to be Minister of Citizenship and Immigration. Hon. John Robert Nicholson: to be Minister of Forestry. Hon. Harry Hays: to be Minister of Agriculture. Hon. René Tremblay: to be a member of the Administration. May 23, Hon. Robert Gordon Robertson: to be Secretary to the Cabinet, from July 1, 1963. July 25, Hon. Charles Mills Drury: to be Minister of Industry. Aug. 14, Hon. Maurice Lamontagne: to act as the Minister for the purposes of the Economic Council of Canada Act.

Senate Appointments.-1962. Sept. 24, Hon. George Stanley White, a member of the Senate: to be Speaker of the Senate. M. Grattan O'Leary, Ottawa, Ont.: to be a Senator for the Province of Ontario. Edgar Fournier, Iroquois, N.B.: to be a Senator for the Province of New Brunswick. Allister Grosart, Ottawa, Ont.: to be a Senator for the Province of Ontario. Sept. 25, Frank Welch, Wolfville, N.S.: to be a Senator for the Province of Nova Scotia. Clement O'Leary, Antigonish, N.S.: to be a Senator for the Province of Nova Scotia. Nov. 13, Jacques Flynn, Quebec, Que.: to be a Senator for the Province of Quebec. Nov. 29, John Alexander Robertson, Kenora, Ont.: to be a Senator for the Province of Ontario. 1963. Feb. 4, Paul Yuzyk, Winnipeg, Man.: to be a Senator for the Province of Manitoba. Hon. David James Walker, Toronto, Ont.: to be a Senator for the Province of Ontario. Rhéal Bélisle, Chelmsford, Ont.: to be a Senator for the Province of Ontario. Feb. 5, Orville Howard Phillips, Alberton, P.E.I.: to be a Senator for the Province of Prince Edward Island. Apr. 27, Maurice Bourget, Lévis, Que.: to be a Senator for the Province of Quebec, and to be Speaker of the Senate. June 11, Duncan Kenneth MacTavish, Rockcliffe Park, Ont.: to be a Senator for the Province of Ontario. Louis-P. Gélinas, Montreal, Que.: to be a Senator for the Province of Quebec. July 6, Romuald Bourque, Outremont, Que.: to be a Senator for the Province of Quebec.

Supreme Court of Canada.-1962. Nov. 23, Hon. Emmett Matthew Hall, Chief Justice of Saskatchewan: to be a Puisne Judge of the Supreme Court of Canada. 1963. Apr. 22, Hon. Robert Taschereau, a Puisne Judge of the Supreme Court of Canada: to be Chief Justice of Canada. May 30, Hon. Wishart Flett Spence, a Judge of the Supreme Court of Ontario and a member of the High Court of Justice for Ontario: to be a Puisne Judge of the Supreme Court of Canada.

Deputy Ministers.-1962. Oct. 30, S. J. Chagnon, Assistant Deputy Minister of Agriculture: to be Associate Deputy Minister of Agriculture. 1963. Feb. 4, W. E. van Steenburgh, Director General of Scientific Services, Department of Mines and Technical Surveys: to be Deputy Minister of Mines and Technical Surveys. Feb. 26, Alfred Walker Hollinshead Needler, Nanaimo, B.C.: to be Deputy Minister of Fisheries. May 23, Ernest A. Côté, Assistant Deputy Minister of Northern Affairs and National Resources: to be Deputy Minister from July 1, 1963. Robert Broughton Bryce, Clerk of the Queen's Privy Council for Canada and Secretary to the Cabinet: to be Deputy Minister of Finance and Receiver General pursuant to Section 10 of the Financial Administration Act, from July 1, 1963. July 25, David Aaron Golden, Ottawa, Ont.: to be Deputy Minister of Industry. Sept. 19, Lucien Lalonde, Deputy Minister of Veterans Affairs: to be Deputy Minister of Public Works. Paul Pelletier, a member of the Civil Service Commission: to be Deputy Minister of Veterans Affairs. Nov. 4, Claude M. Isbister, Assistant Deputy Minister of Finance: to be Deputy Minister of Citizenship and Immigration from Nov. 4, 1963.

Diplomatic Appointments.-1962. The following diplomatic appointments were announced during the year. F. M. Tovell: to be Canadian Ambassador to Peru and Bolivia. John Alexander McCordick: to be Canadian Ambassador to Czechoslovakia. Gordon Edwin Cox: to be Canadian Commissioner, International Supervisory Commission for Viet Nam, effective from the date of his arrival in Saigon, Indochina. William Frederick

Bull: to be Canadian Ambassador to The Netherlands. Bruce MacGillivray Williams: to be Canadian Ambassador to Turkey. Donald Macalister Cornett: to be High Commissioner for Canada to Ghana. Norman Frederick Henderson Berlis, High Commissioner for Canada to Tanganyika: to be also High Commissioner for Canada to Uganda. Paul Augustus Bridle: to be Canadian Commissioner, International Supervisory Commission for Laos. Richard Plant Bower: to be Canadian Ambassador to Japan. Thomas Paul Malone: to be Canadian Ambassador to Iran. Eric Herbert Gilmour: to be High Commissioner for Canada to Trinidad and Tobago. Donald Macalister Cornett, High Commissioner for Canada to Ghana: to be concurrently Ambassador to the Ivory Coast, Upper Volta, Guinea and Togo. George Bernard Summers: to be Canadian Ambassador to Chile. Kenneth Joseph Burbridge: to be High Commissioner for Canada to New Zealand. Léon Mayrand: to be Canadian Ambassador to Argentina. Graham Campbell McInnes: to be High Commissioner for Canada to Jamaica. Léon Mayrand, Canadian Ambassador to Argentina: to be concurrently Ambassador to Uruguay and Paraguay. 1963. The following diplomatic appointments were announced during the year (to Nov. 15). John Arnold Irwin: to be Canadian Ambassador to Poland. J. Antonio Barrette: to be Canadian Ambassador to Greece. Joseph-Charles-Léonard-Yvon Beaulne, Canadian Ambassador to Venezuela: to be concurrently Ambassador to the Dominican Republic. Robert A. D. Ford, to be Canadian Ambassador to the Union of Soviet Socialist Republics. Llewellyn Aikins Douglas Stephens: to be High Commissioner for Canada to Pakistan. Jean-Louis Delisle, Canadian Ambassador to Costa Rica with concurrent accreditation to Nicaragua, Honduras and Panama: to be Canadian Ambassador to El Salvador. Paul-André Beaulieu: to be Canadian Ambassador to Brazil. Joseph-Marc-Antoine-Jean Chapdelaine: to be Canadian Ambassador to the United Arab Republic and to the Sudan.

## Government Appointments to Miscellaneous Boards, Commissions, etc.

Agricultural Stabilization Board.-1963. Jan. S, Sydney B. Williams, S. J. Chagnon and A. H. Turner, Ottawa, Ont.: to be members.-Mr. Williams to be Chairman, vice L. W. Pearsall, resigned, and Mr. Chagnon to be Vice-Chairman.

Air Transport Board.-1963. Oct. 10, F. T. Wood, Montreal, Que.: to be a member and Chairman for ten years, vice Paul Davoud, resigned. Oct. 11, J. L. Gerald Morisset, a member: to be Vice-Chairman.

Area Development Agency.-1963. Oct. 31, W. J. Lavigne, Montreal, Que.: to be Commissioner for Area Development from Nov. 15, 1963. J. A. Teeter, Ottawa, Ont.: to be Deputy Commissioner from Nov. 15, 1963.

Atlantic Development Board.-1963. Jan. 24, J. Michael S. Wardell, Fredericton, N.B. (five years); Frank H. Sobey, Stellarton, N.S. (five years*); Melvin McQuaid, Souris, P.E.I. (four years*); Fred Ayre, St. John's, Nfld. (four years*); and Donat Lalande, Moncton, N.B. (three years*): to be members for the term set following the nameJ. Michael S. Wardell to be Chairman. Feb. 12, Ernest P. Weeks, Ottawa, Ont.: to be executive Director from Mar 1, 1963. Aug. 2, Robert Cheyne Eddy, Bathurst, N.B.; Ian Malcolm MacKeigan, Halifax, N.S.; and Albert Martin, Corner Brook, Nfld.: to be members for a term ending Jan. 24, 1966; and Carl Frederick Burke, Charlottetown, P.E.I.; Maxwell Burry, Glovertown, Nfld.; and Stephen A. Dolhanty, Florence, N.S.: to be members for a term ending Jan. 24, 1965-Ian Malcolm MacKeigan to be Chairman. Sept. 16, Armand Cormier, Moncton, N.B.: to be a member, vice Donat Lalande.

Board of Broadcast Governors.-1962. Oct. 18, Henry Edward Campbell, Ottawa, Ont.; and Claude Gagnon, Quebec, Que.: to be part-time members for five years. Nov. 29, Charles R. Chambers, Toronto, Ont.: to be a part-time member for five years. 1963.

[^367]Aug. S, John M. Coyne, Ottawa, Ont.: to be a part-time member for five years, vice Charles R. Chambers, resigned. Sept. 13, Joseph W. Grittani, Etobicoke, Ont.: to be a member for five years, vice Edward A. Dunlop.

Board of Grain Commissioners.-1962. Nov. 27, Frank Hamilton, Assistant Grain Commissioner, Saskatchewan: to be Chief Commissioner, vice George Newton McConnell, deceased. Dec. 4, Jack Harley Davidson, District Supervisor, Prairie Farm Assistance Act, Swift Current, Sask.: to be an Assistant Grain Commissioner for Saskatchewan.

Board of Trustees of the Maritime Transportation Unions.-1963. Oct. 23, Hon. Victor Leonard Dryer, Vancouver, B.C.: to be Chairman. Hon. René Lippé, Montreal, Que.; and Charles H. Millard, Toronto, Ont.: to be members.

Canada Council.-1963. Feb. 12, Marcel Faribault, Outremont, Que.: to be again a member for three years. July 16, John William Tranter Spinks, Saskatoon, Sask.: to be a member for a second term of three years. George Edward Hall, London, Ont.: to be a member for a second term of three years. Henry Davies Hicks, Halifax, N.S.; Rev. Jean-Adrien Arsenault, Charlottetown, P.E.I.; Chalmers Jack Mackenzie, Ottawa, Ont.; James Stuart Keate, Victoria, B.C.; and Miriam Barber Dorrance, Vancouver, B.C.: to be members for three years.

Canadian Broadcasting Corporation.-1962. Nov. 6, Roger Séguin, Ottawa, Ont.; and F. L. Jenkins, London, Ont.: to be Directors for three years. 1963. July 16, David McArel MacAuley, Sackville, N.B.: to be a Director for three years. Sept. 13, Terence W. L. MacDermot, Lennoxville, Que.: to be a Director for three years, vice R. L. Dunsmore.

Canadian Commercial Corporation.-1963. Mar. 4, David Beatty Mundy, Assistant Deputy Minister, Department of Defence Production: to be a Director, vice Gordon Ward Hunter. Oct. 3, Alan Goldworth Bland, President, Defence Construction (1951) Limited: to be a Director, vice Richard Golding Johnson, resigned.

Canadian National Railways.-1963. Oct. 4, Donald Gordon: to be again President and Chairman for a period of 18 months.

Canadian Pension Commission.-1962. Sept. 19, James Anderson Forrester, Saskatoon, Sask.: to be an ad hoc member for one year from Oct. 1, 1962. Oct. 25, Wilbur T. Nixon, an ad hoc member: to be a member for ten years from Nov. 18, 1962. 1963. Feb. 21, C. B. Topp: to be an ad hoc member from Mar. 15, 1963 to Dec. 6, 1963. May 30, Leslie Alexander Mutch, Ottawa, Ont.: to be a Commissioner and Deputy Chairman from July 6, 1963 to Jan. 13, 1967. June 27, William Pendleton Power, Ottawa, Ont.: to be a member for ten years from July 1, 1963. Norman Loris Pickersgill, Ottawa, Ont.: to be an $a d$ hoc member for one year from July 1, 1963. Sept. 12, James Anderson Forrester: to be an ad hoc member for one year from Oct. 1, 1963.

Canadian Wheat Board.-1963. May 30, Joseph-René Painchaud, Ottawa, Ont.: to be a Commissioner for ten years from June 17, 1963.

Canadian World Exhibition Corporation.-1963. Jan. 22, Paul Bienvenu, Montreal, Que.: to be Commissioner General. Cecil Frank Carsley, Westmount, Que.: to be Deputy Commissioner General. Feb. 9, Herb Lank, Montreal, Que.; Lucien Piché, Montreal, Que.; Claude Pratte, Quebec, Que.; Maurice Riel, Montreal, Que.; André Rousseau, St. Jean Port Joli, Que.; Lucien Saulnier, Montreal, Que.; T. N. Beaupré, Vancouver, B.C.; Jean Drapeau, Montreal, Que.; Jean Lanctot, Montreal, Que.; Victor Oland, Halifax, N.S.; Harry Price, Toronto, Ont.; and Fridolin Simard, Montreal, Que.:
to be Directors. July 24, Hon. George Hees, Toronto, Ont.: to be a Director, vice Harry Price, resigned. Sept. 6, Pierre Dupuy: to be Commissioner General, with the rank of Ambassador, vice Paul Bienvenu, resigned. Sept. 19, Robert F. Shaw, Montreal, Que.: to be Deputy Commissioner General from Oct. 1, 1963, vice C. F. Carsley, resigned.

Central Mortgage and Housing Corporation.-1963. Oct. 10, Herbert W. Hignett, Ottawa, Ont.: to be Vice-President from Oct. 1, 1963, vice P. S. Secord, retired.

Civil Service Commission.-1963. Feb. 4, Robertson Gass MacNeill, Ottawa, Ont.: to be a member and Chairman. Oct. 31, Jean Boucher, Ottawa, Ont.: to be a member, vice Paul Pelletier.

Copyright Appeal Board.-1962. Nov. 6, Jean Miquelon, Under Secretary of State and Deputy Registrar General of Canada: to be a member, vice A. Alex. Cattanach, resigned.

Defence Research Board.-1962. Nov. 6, Gordon Ward Hunter, Deputy Minister of Defence Production: to be a member for a term expiring Mar. 31, 1965, vice David Aaron Golden, resigned. 1963. Mar. 9, Robert James Uffen, London, Ont.; John Ferguson McCreary, Vancouver, B.C.; Cyril Arthur Peachey, Montreal, Que.; and George Sydney Field, Ottawa, Ont.: to be members from Apr. 1, 1963 to Mar. 31, 1966. Mar. 25, John Tuzo Wilson, Toronto, Ont.: to be a member for a term expiring Mar. 31, 1966.

Dominion Council of Health.-1962. Oct. 4, James Patterson Whyte, Swift Current, Sask.: to be a member for three years, vice Rupert D. Ramsay, deceased.

Economic Council of Canada.-1963. Sept. 12, John J. Deutsch, Vice-Principal of Queen's University, Kingston, Ont.: to be Chairman for seven years from Oct. 1, 1963. Oct. 3, Joseph-Louis-Eugène Couillard, Ambassador to Norway and Iceland: to be a Director for seven years from Nov. 15, 1963. Arthur J. R. Smith, Director of Research, The Canadian-American Committee, Montreal, Que.: to be a Director for seven years from Oct. 3, 1963.

Farm Credit Corporation.-1963. Feb. 12, George Owen, Vice Chairman: to be Chairman. Feb. 21, George Owen, A. Sinclair Abell, Lucien Lalonde and Alexander T. Davidson: to be members for one year from Apr. 5, 1963; George Owen to be Chairman.

Great Lakes Fishery Commission.-1962. Aug. 22, John Richardson Dymond, Toronto, Ont.: to be a Commissioner for Canada for a further two years from Sept. 1, 1962. 1963. Arthur Owen Blackhurst, Port Dover, Ont.: to be again a Commissioner for Canada for a further period ending Dec. 1, 1965.

Historic Sites and Monuments Board of Canada.-1963. May 30, Charles Bruce Fergusson, Halifax, N.S., a member: to be Chairman from May 20, 1963 to Apr. 14, 1965. Margaret Anchoretta Ormsby, Victoria, B.C.: to be again a member for five years. Oct. S, Donald Grant Creighton, Toronto, Ont.: to be a member for five years from Oct. 10, 1963.

Immigration Appeal Board.-1962. Sept. 4, Douglas Jung, Vancouver, B.C.: to be a member.

International Civil Aviation Organization.-1963. Sept. 11, R. Duder: to be Canadian Representative from Jan. 1, 1964, vice J. R. K. Main.

International Commission for the Northwest Atlantic Fisheries.-1963. Apr. 27, Wilson C. MacKenzie, Director, Economics Service, Department of Fisheries,

Ottawa, Ont.: to be a Commissioner, vice George R. Clark, deceased. J. Howard MacKichan, Halifax, N.S.: to be again a Commissioner for two years from May 28, 1963. May 30, Paul P. Russell, St. John's, Nfld.: to be a Commissioner for two years.

International Joint Commission.-1963. Jan. 8, Donald McGregor Stephens: to be again a member from Jan. 1, 1963 to Dec. 31, 1965. René Dupuis: to be again a member from Feb. 23, 1963 to Feb. 22, 1966.

International Pacific Salmon Fisheries Commission.-1962. Aug. 15, A. J. Whitmore, Burnaby, B.C.: to be a member for a further two years from Aug. 15, 1962. 1963. Apr. 27, Alfred W. H. Needler, Deputy Minister of Fisheries, Ottawa, Ont.: to be a member, vice George R. Clark, deceased.

International Whaling Commission.-1963. Apr. 27, William M. Sprules, Special Assistant to the Deputy Minister of Fisheries: to be a member, vice George R. Clark, deceased.

Municipal Development and Loan Board.-1963. Aug. 14, R. B. Bryce, Deputy Minister of Finance and Receiver General; Stewart Bates, President, Central Mortgage and Housing Corporation; and Jean Miquelon, Under Secretary of State: to be membersR. B. Bryce to be Chairman. Sept. 4, Kenneth W. Taylor, Government Adviser on University Grants: to be a member and to be Chairman, vice R. B. Bryce who remains a member.

National Battlefields Commission.-1963. Feb. 21, John Gordon Ross, Quebec, Que.: to be a member, vice R. H. Price. Mar. 18, Félix Hudon, Quebec, Que.: to be Secre ${ }^{-}$ tary from Apr. 6, 1963, vice P. H. Fanning Gosselin. July 30, Jean Leahy, Quebec, Que.: to be a member, vice James Y. Murdoch, deceased.

National Capital Commission.-1963. Feb. 4, Anthony Adamson, Toronto, Ont.; J.-E. Bissonnette, Quebec, Que.; Walter Tucker, Grand Falls, Nfld.; A. E. Campbell, Ottawa, Ont.; Louis M. Bloomfield, Montreal, Que.; Frank Martin, Saskatoon, Sask.; Charles H. Hulse, Ottawa, Ont.; and Hans Geggie, Wakefield, Que.: to be members for four years. F. F. Kemp, Richmond, Ont.; J. C. Horwitz, Ottawa, Ont.; Miss S. C. McLellan, Saint John, N.B.; and Richard Parkinson, Kelowna, B.C.: to be members for three years from Feb. 6, 1963-Anthony Adamson to be Vice-Chairman.

National Centennial Administration.-1963. Jan. 24, John Fisher, Ottawa, Ont.: to be Commissioner. Robert Choquette, Montreal, Que.: to be Deputy Commissioner. Ernest Côté, Assistant Deputy Minister of Northern Affairs; John Hodgson, Assistant Secretary to the Cabinet; Hugh Mills, Halifax, N.S.; Paul Desmarais, Montreal, Que.; George Metcalf, Toronto, Ont.; N. A. M. MacKenzie, President, Canadian Centenary Council; J. R. Murray, Winnipeg, Man.; and Mrs. Marianne Linnell, Vancouver, B.C.: to be Directors.

National Film Board.-1963. Sept. 13, George V. Haythorne, Deputy Minister of Labour: to be a member for three years. Oct. 18, Charles S. Band, Toronto, Ont.: to be again a member.

National Gallery of Canada.-1962. Oct. 4, Sidney Culverwell Oland, Halifax, N.S.: to be a member of the Board of Trustees, vice W. T. Ross Flemington. 1963. Aug. 14, Mrs. Otto Koerner, Vancouver, B.C.: to be a member of the Board of Trustees, vice Lawren Harris, resigned.

National Library Advisory Council.-1963. Feb. 2, Antonio Drolet, Quebec, Que.; Marget Meikleham, Hamilton, Ont.; and Harry W. Ganong, Wolfville, N.S.: to be members.

National Museum of Canada.-1963. Oct. 8, Richard G. Glover, Professor of History, University of Manitoba: to be Director of the Human History Branch from. Jan. 1, 1964.

National Productivity Council.-1963. Feb. 21, Miss A. Speers, Winnipeg, Man.; George V. Haythorne, Ottawa, Ont.; and John Convey, Ottawa, Ont.: to be members for three years from Mar. 1, 1963. LeRoy D. Smithers, Sarnia, Ont.: to be a member for three years vice George C. Metcalf. Mar. 4, A. R. Gibbons, Ottawa, Ont.: to be a member for three years.

National Research Council.-1963. Feb. 4, B. G. Ballard, Vice-President (Scientific): to be President. Léo Marion, Senior Director: to be Vice-President (Scientific). Mar. 9, Pierre-R. Gendron, Montreal, Que.; Paul Lorrain, Montreal, Que.; John H. Shipley, Montreal, Que.; Louis-Philippe Bonneau, Quebec, Que.; Roger Gaudry, Montreal, Que.; and Robert J. Uffen, London, Ont.: to be members for three years from Apr. 1, 1963.

National Technical and Vocational Training Advisory Counci1.-1962. Nov. 1, Fraser Fulton, Horace Laverdure, Mrs. Saul Hayes, N. D. Cochrane, W. S. McMurtry, Jean Delorme, B. F. Addy, J. P. Mitchell, Garnet Page and Floyd G. Robinson: to be members for a period expiring Dec. 1, 1963. G. H. Paquette, S. T. Payne, Mrs. F. R. Duminy, W. H. Sands, J. H. McLellan, Maurice Barrière, B. Scott Bateman, W. H. Swift, Grant Hines and S. C. T. Clark: to be alternates for the same period. 1963. Mar. 4, W. F. McMullen, J. MacKenzie, J. A. Ferguson, A. W. Crawford, J. A. Doyle, J. W. McNutt and W. D. Mills: to be members for a period expiring Dec. 1, 1963. R. K. Richan, J. Lyle Boisvert, David Kirk, W. W. Sharpe, F. E. MacDiarmid and George E. MacDonald: to be alternates for the same period.

North Pacific Fisheries Commission.-1963. Aug. 29, John M. Buchanan: to be again a member for one year. James Cameron: to be again a member for two years. Carl Giske: to be a member for two years.

Northern Canada Power Commission.-1963. July 2, Ernest Adolphe Côté, Deputy Minister of Northern Affairs and National Resources: to be a member and Chairman, vice Robert Gordon Robertson, resigned.

Northern Ontario Pipe Line Crown Corporation.-1962. Nov. 6, James A. Roberts: to be President, vice David A. Golden, resigned.

Northwest Territories Council.-1963. July 2, Bent Gestur Sivertz: to be Commissioner from July 12, 1963, vice Robert Gordon Robertson, resigned.

Prairie Farm Rehabilitation Committee.-1962. Oct. 25, Norman Roebuck, Yorkton, Sask.; Roy Clark, Brandon, Man.; Fred Croy, Stonewall, Man.; Harry Shearer, Elm Creek, Man.; James Cameron, Youngstown, Alta.; Arnold F. Christie, Grande Prairie, Alta.; Desne Holyroyd, Lethbridge, Alta.; Boyd Anderson, Fir Mountain, Sask.; W. H. Hollier, North Battleford, Sask.; Ed. Wright, Eastend, Sask.; and H. J. Collison, Star City, Sask.: to be members-Norman Roebuck to be Chairman.

Restrictive Trade Practices Commission.-1963. Jan. 24, Robert Simpson MacLellan, Sydney, N.S.: to be a member and Chairman from Feb. 1, 1963; Walter Donald Ridley Eldon, Ottawa, Ont.: to be a member from Feb. 1, 1963.

Royal Canadian Mounted Police.-1963. Oct. 18, George B. McClellan, Deputy Commissioner: to be Commissioner from Nov. 1, 1963, vice Clifford Walter Harvison, retired.

Royal Commission on Bilingualism and Biculturalism.-1963. July 19, André Laurendeau, Montreal, Que.; Davidson Dunton, Ottawa, Ont.; Rev. Clément Cormier, Moncton, N.B.; Royce Frith, Toronto, Ont.; Jean-Louis Gagnon, Montreal, Que.; Mrs. Stanley Laing, Calgary, Alta.; Jean Marchand, Quebec, Que.; Jaroslav Bohdan Rudnyckyj, Winnipeg, Man.; Frank Scott, Montreal, Que.; and Paul Wyczynski, Ottawa, Ont.: to be Commissioners under Part I of the Inquiries Act to inquire into and report upon the existing state of bilingualism and biculturalism in Canada-André Laurendeau and Davidson Dunton to be Co-chairmen of the Commission and André Laurendeau to be Chief Executive Officer thereof.

Royal Commission on Pilotage.-1962. Nov. 1, Hon. Yves Bernier, a Judge of the Superior Court of Quebec, Quebec, Que.; Robert Knowlton Smith, Waterloo, Ont.; and Harold Alexander Renwick, Vancouver, B.C.: to be Commissioners under Part I of the Inquiries Act, to inquire into and report upon the problems relating to marine pilotage provided in Canada, Hon. Mr. Justice Bernier to be Chairman.

Royal Commission on Taxation.-1962. Sept. 25, Kenneth LeM. Carter, J. Harvey Perry, A. Emile Beauvais, Donald G. Grant, Mrs. S. M. Milne, and Charles E. S. Walls: to be Commissioners under Part I of the Inquiries Act, to inquire into and report upon the incidence and effects of taxation imposed by Parliament-Kenneth LeM. Carter to be Chairman.

St. Lawrence Seaway Authority.-1963. Nov. 7, Peter Evelyn Reginald Malcolm, Ottawa, Ont.: to be a member for a term of ten years.

The Tariff Board.-1963. Mar. 11, Albert D. McPhillips, Victoria, B.C.: to be a member for a term of ten years.

Tax Appeal Board.-1962. Nov. 1, Roland St-Onge, Hull, Que.: to be a member for ten years, vice Jacques Panneton, deceased. R. W. S. Fordham, a member: to be Assistant Chairman.

Trans-Canada Air Lines.-1962. Oct. 11, Hon. Leslie M. Frost, Lindsay, Ont.: to be a Director of Trans-Canada Air Lines from Oct. 1, 1962.

Unemployment Insurance Commission.-1962. Sept. 6, C. A. L. Murchison, Ottawa, Ont.: to be again a Commissioner for one year, from Oct. 20, 1962. 1963. Sept. 26, C. A. L. Murchison, Ottawa, Ont.: to be again a Commissioner for one year from Oct. 20, 1963.

War Veterans Allowance Board.-1963. June 27, Charles Henry Rennie: to be again a temporary member for one year from Oct. 2, 1963.

## PART IV.-FEDERAL LEGISLATION, 1962-63

Legislation passed in the first session of the Twenty-Fifth Parliament, which began on Sept. 27, 1962 and ended on Feb. 6, 1963, is outlined below, together with legislation passed in the elapsed period of the First Session of the Twenty-Sixth Parliament which began on May 16, 1933, recessed from Aug. 3 to Sept. 29 and was still in progress on Nov. 15, 1963, the date of cut-off for this edition of the Year Book.

These classified lists of federal legislation have been compiled from the Statutes. 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-Fifth Parliament, Sept. 27, 1962 to Feb. 6, 1963 

| Subject, Chapter and Date of Assent |  | Synopsis |
| :---: | :---: | :---: |
| 11-12 Eliz. II |  |  |
| Agriculture- |  |  |
| 7 | Nov. 29 | An Act to amend the Farm Credit Act revises the Act and Regulations to provide a greater measure of flexibility in meeting the credit needs of Canadian farmers; the capital of the Farm Credit Corporation is raised from $\$ 12,000,000$ to $\$ 16,000,000$, increasing the amount of funds available for lending. |
| Finance- |  |  |
| 1 | Oct. 25 | Appropriation Act No. 6, 1962 grants certain sums of money for the public service for the financial year ending Mar. 31, 1963. |
| 3 | Nov. 29 | Appropriation Act No. 7, 1962 grants certain sums of money for the public service for the financial year ending Mar. 31, 1963. |
| 9 | Dec. 20 | Appropriation Act No. 8, 1962 grants certain sums of money for the public service for the financial year ending Mar. 31, 1963. |
| 14 | Dec. 20 | An Act to amend the Federal-Provincial Fiscal Arrangements Act and the Federal-Provincial Tax-Sharing Arrangements Act increases grants to universities from $\$ 1.50$ to $\$ 2$ per capita and legalizes certain arrangements made between the Government of Canada and the Government of the Province of Quebec. |
| Health and Welfare- |  |  |
| 15 | Dec. 20 | An Act to amend the Food and Drugs Act prescribes the conditions respecting the distribution of samples of drugs by pharmaceutical manufacturers, prohibits the sale of certain designated drugs and defines more clearly the requirements regarding the introduction of new drugs. |
| 16 | Dec. 20 | An Act to amend the Department of National Health and Welfare Act authorizes the establishment of a National Council of Welfare. |
| Trade- |  |  |
| 2 | Nov. 1 | An Act to amend the Export Credits Insurance Act increases from $\$ 200,000,000$ to $\$ 400,000,000$ the limit of liability of the Export Credits Insurance Corporation under contracts entered into and provides for other administrative changes. |
| Transportation- |  |  |
| $11$ | Dec. 20 | An Act respecting the Construction of a line of railway in the Province of New Brunswick by Canadian National Railway Company from Nepisiguit Junction on the Bathurst Subdivision of the Canadian National Railway in a southerly and westerly direction for a distance of approximately 15 miles to the property of Brunswick Mining and Smelting Corporation Limited. |
| Revenue- |  |  |
|  | Nov. 29 | An Act to amend the Estate Tax Act makes a number of technical changes in the Act. |
| 6 | Nov. 29 | An Act to amend the Excise Tax Act extends the application of the tax on premiums paid to insurers not authorized to transact business in Canada; provides for the payment of sales tax where certain goods imported or purchased exempt from sales tax are later diverted to a taxable use; and adds or deletes certain items to or from the list of exemptions. |
| 8 | Nov. 29 | An Act to amend the Income Tax Act implements tax proposals introduced in the Budget Speech of Apr. 10, 1962 and provides administrative and technical amendments to the Act. |
| Miscellaneous- |  |  |
| $4$ | Nov. 29 | An Act to amend An Act to amend the Combines Investigation Act and the Criminal Code exempts from the terms of the Act agreements or arrangements between British Columbia fishermen and British Columbia fish buyers or processors for the years 1959 to 1964, inclusive. |
| 10 | Dec. 20 | The Atlantic Development Board Act provides for the establishmnet of the Atlantic Develop ment Board, the duties of which are to inquire into and report upon measures and projects for fostering the economic growth and development of the Atlantic region of Canada. |

# Legislation of the First Session of the Twenty-Fifth Parliament, Sept. 27, 1962 to Feb. 6, 1963-concluded 

| Subject, <br> Chapter and <br> Date of Assent | Synopsis |  |
| :---: | :---: | :---: | :---: |
| Miscellaneous-  <br> concluded  <br> 12 Dec. 20 | The Canadian World Exhibition Corporation Act provides for the establishment of the Canadian <br> World Exhibition Corporation, the duties of which are to plan, organize, hold and ad- <br> minister the Canadian Universal and International Exhibition, Montreal, 1967. |  |
| 13 | Dec. 20 | An Act to amend the Coal Production Assistance Act makes certain adjustments relating to <br> the rate and terms of repayment of loans made to producers under the Act. |
| 17 | Dec. 20 | An Act to amend the National Housing Act, 1954 extends to Mar. 31, 1965 the deadline for <br> partial forgiveness of municipal indebtedness in connection with sewage treatment <br> project loans. |

## Legislation of the First Part of the First Session of the Twenty-Sixth Parliament which began May 16, 1963

| Subject, Chapter and Date of Assent |  |  | Synopsis |
| :---: | :---: | :---: | :---: |
| 12 Eluz. II |  |  |  |
| Government- |  |  |  |
| 3 | July | 22 | The Department of Industry Act establishes a new Department of Industry presided over by a Minister whose duties, powers and functions shall extend to and include all matters relating to the manufacturing industries in Canada over which the Parliament of Canada has jurisdiction, not by law assigned to any other department, branch or agency of the Government of Canada. |
| 5 | July | 31 | An Act to amend the Atlantic Development Board Act increases the Board membership from five to eleven, directs the Board to conduct certain of its functions in consultation with the Economic Council of Canada and establishes an Atlantic Development Fund to finance programs or projects undertaken. |
| 11 | Aug. | 2 | The Economic Council of Canada Act provides for the establishment of an Economic Council of Canada 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. |
| 13 | Aug. |  | The Municipal Development and Loan Act provides for the establishment of a Municipal Development and Loan Board which has the function of promoting increased employment in Canada by financial assistance by way of loans to municipalities to enable municipalities to augment or accelerate municipal capital works programs. |
| 14 | Aug. |  | An Act to amend the Senate and House of Commons Act and the Members of Parliament Retiring Allowances Act increases the sessional allowances of members of the Senate and House of Commons from $\$ 8,000$ to $\$ 12,000$, provides for the payment of an additional allowance of $\$ 4,000$ to Party Leaders, the Chief Government Whip and the Chief Opposition Whip, and makes other changes in respect of expense and retirement allowances. |
| Finance- |  |  |  |
| 1 | June | 5 | Appropriation Act No. 1, 1963 grants certain sums of money for the public service for the financial year ending Mar. 31, 1964. |
| 2 | July | 22 | Special Appropriation Act, 1963 approves certain expenditures authorized for the public service and the application of certain amounts in the accounts for the financial year ended Mar. 31, 1963. |
| 9 | Aug. |  | Appropriation Act No. 2, 1963 grants certain sums of money for the public service for the financial year ending Mar. 31, 1964. |
| 15 | Oct. |  | Appropriation Act No. 3, 1963 grants certain sums of money for the public service for the financial year ending Mar. 31, 1964. |
| 17 | Oct. |  | The Maritime Transportation Unions Trustees Act provides for the placing of the Maritime Transportation Unions of Canada under the management and control of trustees. |

# Legislation of the First Part of the First Session of the Twenty-Sixth Parliament which began May 16, 1963-concluded 

| Subject, Chapter and Date of Assent |  | Synopsis |
| :---: | :---: | :---: |
| Revenue- |  |  |
| 7 | July 31 | An Act to amend the Customs Tariff implements the Budget resolution relating to the Customs Tariff. |
| 12 | Aug. 2 | An Act to amend the Excise Tax Act implements the Budget resolution relating to the Excise Tax Act. |
| 18 | Nov. 7 | An Act respecting an Order of His Excellency the Governor in Council entitled the Surcharge on Imports Order, and to restore certain rates of Customs duties and tariff benefits expressed to be withdrawn thereby. |
| Welfare- |  |  |
| 16 | Oct. 16 | An Act to amend the Old Age Security Act increases the pension paid under the Act from $\$ 65$ a month to $\$ 75$ a month, effective Oct. 1, 1963, and increases the rate of the Old Age Security tax. |
| Miscellaneous- |  |  |
| 4 | June 5 | An Act to amend the Export and Import Permits Act extends the duration of the Act for a further period of three years to July 31, 1966. |
| 6 | July 31 | An Act to authorize the Construction and Maintenance of a Bridge and Tunnel across the St. Lawrence River at the Boucherville Islands, in the Province of Quebec. |
| 8 | July 31 | An Act to amend the Judges Act and the Criminal Code increases the salaries of the Chief Justice of Canada, the puisne judges of the Supreme Court of Canada, the President of the Exchequer Court, the puisne judges of the Exchequer Court, the Chief Justice and other judges of the Supreme Court of Ontario, the Chief Justices and other judges of the superior courts of the provinces, the judges of the Territorial Courts of the Yukon Territory and the Northwest Territories and the judges of the county and district courts of the provinces. Provision is also made for the salaries for fourteen additional judges. |
| 10 | Aug. 2 | The Dissolution and Annulment of Marriages Act authorizes the Senate of Canada to dissolve or annul marriages. |

## 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; for 1954 in the 1955 Year Book, pp. 1329-1330; for 1955 in the 1956 edition, pp. 1233-1234; for 1956 in the 1957-58 edition, p. 1270; for 1957 in the 1959 edition, p. 1240; for 1958 in the 1960 edition, pp. 1255-1256; for 1959 and 1960 in the 1961 edition, pp. 1241-1245; and for 1961 and January to the end of August 1962 in the 1962 edition, pp. 1184-1188. References regarding changes in federal and provincial legislatures or ministries are not included in the following listing but may be found in Chapter II on Constitution and Government or in Appendix I.

## 1962

September: Sept. 1, 25 th anniversary of first scheduled TCA flight celebrated by flight over the original 122-mile route between Vancouver and Seattle, Wash. Sept. 2, Sons of Freedom Doukhobors began 400 -mile march from Shoreacres to Agassiz, B.C. Sept. 5, Announcement of Canada Council grants of $\$ 20,000$ to the Humanities Research Council of Canada and the Social Science Research Council of Canada for production of a Canadian history to be completed by 1967. Sept. 5, The Canada-U.S.-sponsored World Food Bank initiated by Canada's pledge of $\$ 5,000,000$ in cash and commodities to be paid over a three-year period. Sept. 6 , First of five reports of the Royal Commission on Government Organization released. Sept. 7, National Industrial Expansion Conference, sponsored by Department of Trade and Commerce to meet challenge of foreign competition and in-
crease production, opened at Ottawa. Sept. 10 Reduction of bank rate from 6 p.c. to $5 \frac{1}{3}$ p.c. and increase in exchange reserves as a result of the emergency austerity program. Sept. 10-15, Canada Week at Seattle World Fair featured RCMP musical ride, the military tattoo, the RCAF band and aerial acrobatics, and performance of Bousille et les justes by Gratien Gélinas. Sept. 10-19, Commonwealth Prime Ministers' Conference held in London; Britain's proposed entry into the European Common Market opposed under certain conditions by Prime Minister Diefenbaker. Sept. 11, W. Walton Butterworth appointed U.S. Ambassador to Canada; arrived in Ottawa Nov. 30 Official opening of the 42-storey Royal Bank of Canada Building in Place Ville Marie, Montreal. Sept. 13, Negotiations completed for private sale of $\$ 250,000,000$ Government of Canada bonds to five life insurance companies in the U.S. Announcement by Finance Minister Nowlan of termination
of $\$ 250,000,000$ of the $\$ 400,000,000$ stand-by credit obtained in June from the Export-Import Bank. Sept. 16, Grant of $\$ 2,500,000$ to Laurentian University of Sudbury by International Nickel Company of Canada, Limited. Sept. 18, The 17th Session of the General Assembly of the UN opened in New York; Canadian delegation headed by External Affairs Minister Green; Sir Zafrulla Khan of Pakistan elected UN President. Four new states-Republic of Rwanda, Kingdom of Burundi, Jamaica, and the State of Trinidad and Tobago-admitted to UN by acclamation. Sept. 20, Official opening of potash mine at Esterhazy, Sask., inaugurating production from the world's largest known reserves of potash. President Mohammad Ayub Khan of Pakistan arrived for a five-day state visit to Canada. Sept. 24, Garden of the Provinces on Wellington Street, Ottawa, officially opened by Prime Minister Diefenbaker. Sept. 27, Canada's Twenty-Fifth Parliament opened. Sept. 27-Nov. 4, Exhibition of valuable canvasses loaned by Waiter P. Chrysler to the National Gallery of Canada; doubts raised about authenticity of some of the paintings. Sept. 29, Canada's first spacecraft, the $320-\mathrm{lb}$. satellite Alouette, successfully launched from Vandenberg Air Force Base, California.

October: Oct. 2, Official opening of the first of two vocational training centres for Palestine Refugees, built with Canadian contributions to UNRWA, at Siblin, Lebanon. Oct. s, U.S. astronaut Walter M. Shirra in Sigma 7 spacecraft in nine-hour flight six times around the earth. The Sons of Freedom Doukhobors accepted offer of elementary school tuition for about 100 pupils on a temporary basis at Hope, B.C. Oct. 8, Algeria became the 109th member of the UN by acclamation of the General Assembly. Oct. 9, Uganda became an independent nation within the Commonwealth. Oct. 10, Two persons killed and five injured in collision between a TCA Viscount and an RCAF fighter at Bagotville, Que. Oct. 11, Roman Catholic prelates gathered for Ecumenical Council, the first in a century, in Vatican City. The first of 200 Canadian-built CF-104 Super Starfighters left for Zweibrucken, Germany, a part of the strike-reconnaissance squadrons being formed. Oct. 11-18, Pacific coast storm left at least 46 persons dead in B.C. and the U.S. Oct. 1s-14, Ceremony commemorated the 150 th anniversary of the Battle of Queenston Heights and the death of General Sir Isaac Brock. 0 ct. 17,5 -p.c. surcharge on most imported industrial machinery removed. Oct. 18, Revised estimates tabled in the House of Commons showed $\$ 228,000,000$ cut in government spending for the fiscal year as a result of austerity measures. Oct. 22, T.C. Douglas, national leader of the NDP, won by-election in Burnaby-Coquitlam, B.C. Bitter fighting began on China-India Frontier. U.S. President Kennedy proclaimed a naval quarantine of Cuba in protest against installation of nuclear missile launching bases; summit meeting proposed by Soviet Premier Kruschev regarded as conciliatory and U.S.S.R. naval vessels withdrawn from area. Oct. 2s, Death of John Thomas Haig, Winnipeg, former Progressive Conservative Government Leader in the Senate. Oct. 24, Dr. T. H. B. Symons, University of Toronto, appointed President and Vice-Chancellor of Trent University at Peterborough, Ont., scheduled to open in 1964. Oct. 25, Bedford Institute of Oceanography near Halifax, N.S., officially opened. Oct. 27, New agreement averted strike of 6.000 railway men on CPR. Oct. 29, India requested assistance in conflict with China. Oct. SO, Canada voted with 55 others to defeat Soviet resolution in UN General Assembly to seat Communist China. Soviet construction on missile bases in Cuba reported halted; U.S. quarantine and surveillance of Cuba reported lifted. Oct. 31, Reciprocal currency arrangements made in June with Federal Reserve Bank of New York and the Bank of England reduced by one
half. Two-mile bridge across St. Mary's Rive between Sault St. Marie in Ontario and Sault Ste Marie in Michigan officially opened.
November: Nov. 1, Political Committee of the UN voted to boycott South Africa for its policy of apartheid; Canada, the U.S. and Britain among those opposed. Nov. 2, Federal Royal Commission appointed to study Canadian marine pilotage system in effort to reduce labour disputes. Nov. 5, Political Committee of the UN approved Ca-nadian-proposed compromise formula for halting all nuclear bomb tests by Jan. 1. Nov. 7, Death of Mrs. Eleanor Roosevelt, widow of Franklin D. Roosevelt and internationally respected for her efforts toward human betterment. Rt. Hon. Vincent Massey, former Governor General of Canada, and J. Tuzo Wilson, Professor of Geophysics, University of Toronto, admitted as henorary fellows to Trinity College, University of Toronto, a rare distinction limited to six living persons. Nov. 8, Dr. Léo Marion, Senior Director of the National Research Council and Director of the Division of Pure Chemistry, received honorary doctorate from the Sorbonne. Nov. 9-17, At Royal Winter Fair, Toronto, world championship title for wheat won by F. W. Hallworth, Taber, Alta.; for flax by R. P. Robbins, Shaunavon, Sask.; for barley by Mrs. Marthua Jussila, Manyberries, Alta.; for hay by R. P. Allan, Brucefield, Ont.; for oats by Myron D. Zacharko, Bruderheim, Alta.; for rye by W. Winters, Renfrew, Ont.; for potatoes by Anne MacAuley, East Baltic, P.E.I.; and for tobacco by G. Atkins, Baltimore, Ont.; the grand championship in the steer class was won by Don and Marion Johnson, Burrows, Sask., and the Queen's Guineas, award for 4-H Club members, by Ronald Storey, Guelph, Ont., for his Aberdeen Angus steer. Nov. 11, Portraits of 28 men who made significant contributions to Canadian agriculture unveiled in Canadian Agricultural Hall of Fame at Royal Agricultural Winter Fair, Toronto. Nov. 12, Application of Canada to hold a World's Fair in Montreal in 1967 granted by International Exhibition Bureau. Nov. 18, Bank rate reduced from $5 \frac{1}{2}$ p.c. to 4 p.c. Death of Senator T. D. Bouchard of Montreal. Nov. 14, Sioux rock carving depicting Indian legend of the White Dog, uncovered at Dog Lake near Port Arthur. Nov. 15, Liberal Government of Premier Jean Lesage returned to power in Quebec election. Surcharges imposed on certain goods on June 24 eliminated. Nov. 19, Liberal Government of Premier Joseph R. Smallwood returned to power in Newfoundland election-the fifth consecutive time since 1949. Nov. 20, Appointment of Dr. H. Rocke Robertson as principal of McGill University announced. UN approved Canadian plan for worldwide measurement of atomic radiation. Nov. 2\$-Dec. 1, British Empire Games held in Perth, Australia; Canada placed fourth, with four gold medals won by Bruce Kidd of Toronto (track), Richard Pound of Montreal (swimming), Mary Stewart of Vancouver (swimming) and Harry Mann of Prince George, B.C. (boxing), and 27 other medals. Nov. 26, Resumption of disarmament negotiations in Geneva. Nov. 28, Death of Wilhelmina, former Queen of the Netherlands. Nov. 29, Public Works Minister Fulton announced his decision to seek election as leader of the Progressive Conservative Party in British Columbia. Senator M. Wallace McCutcheon, Minister without Portfolio, appointed chairman of Cabinet Committee to direct implementation of Glassco Commission recommendations. Nov. SO, Over 100 residents of Cornwall, Ont. required hospital treatment for chlorine gas poisoning when fumes escaped from a railway tank car. Acting Secretary-General of the UN, U Thant of Burma, elected to regular term of office to serve until Nov. 3, 1966.
December: Six Canadian transport aircraft sent to India to help repel aggression on the Himalayan frontier. Dec. 2, Winnipeg Blue Bombers retained

Canadian football title, winning Grey Cup match with Hamilton Tiger-Cats by score of $28-27$. Dec. 5, Mrs. Claire Kirkland-Casgrain, Montreal lawyer, appointed Minister without Portfolio in Quebec Legislature, the first woman Cabinet minister in the history of the province. Dec. 6, Dr. Murray L. Barr, London, Ont., received from U.S. President Kennedy one of the first awards from a foundation set up in the name of the President's late brother to assist work in overcoming mental retardation, and a grant of $\$ 25,000$ to further his research. Dec. 7, Dr. Hugh Keenleyside, former Canadian Ambassador and senior UN official, first recipient of the Vanier Medal of the Institute of Public Administration. Dec. 9, Tanganyika remained a member of the Commonwealth upon achieving status as a republic. Dec. 10, Progressive Conservative Government of Premier Walter R. Shaw returned to power in Prince Edward Island election. Dec. 12, Warwick Fielding Chipman, Montreal, former Canadian diplomat, presented with Italy's highest award for merit in Italian studies for his translation into English of Dante's Inferno. Dec. 14, Progressive Conservative Government of Premier Duff Roblin returned to power in Manitoba election. Dec. 18, CNR Board of Directors to study ways of attracting more French-speaking Canadians into the organization. Dec. 20, Report of the Royal Commission on Unemployment Insurance tabled in the House of Commons. Dec. 21, Prime Minister Diefenbaker arrived in the Bahamas for talks with British Prime Minister Macmillan and U.S. President Kennedy. Canada accorded recognition to the Government of the Yemen Arab Republic. Mary Stewart of Vancouver chosen Canada's outstanding female athlete of 1962 in Canadian Press poll. Other women acclaimed for outstanding achievement during the year were: Mayor Charlotte Whitton of Ottawa and Hon. Claire KirklandCasgrain of Montreal in public affairs; Mrs. Hugh John Flemming, founder of the international Kindness Club; Mrs. Sheila Burnford, author; Miss Kate Reid, actress; and Miss Teresa Stratas, opera singer. Dec. 22, Death of Solon Low, former national leader of the Social Credit Party. Dec. 24, Death of former Senator Thomas Farquhar of Little Current, Ont.

## 1963

January: Second Battalion, Royal Canadian Regiment, London, Ont., awarded Duke of Edinburgh trophy in a Commonwealth competition; criteria were small arms efficiency and physical standards. Exhibition of contemporary Canadian painting and graphic art sent by the National Gallery of Canada to Africa for eight-month tour. Eliza Edith Mayhew, Victoria, B.C., won first annual award of the Sir Otto Beit Medal for Sculpture offered by the Council of the Royal Society of British Sculptors. First piece of creative fiction written by an Eskimo for Eskimo children published. Jan. 1, Eastview became Ontario's 32nd city. Jan. 3, General Lauris Norstad, former Supreme Allied Commander, Europe, stated that if Canada does not accept nuclear weapons for its forces in Europe it will not meet its commitments to NATO. Jan. 7, Contracts awarded for construction of Red River floodway, the largest earthmoving job ever to be undertaken in Canada. Canada and the Republic of Mali established diplomatic relations. Jan. 10, Appointment of M. J. Coldwell, former national leader of the CCF, as Resident Fellow at Carleton University's Institute of Canadian Studies announced. Jan. 11, Fiftieth anniversary of the start of activities of the 4-H Club movement, begun with about 400 Manitoba boys and girls in 1913 and now with a national membership of more than 72,000; commemorative projects included an active part in the World Freedom from Hunger Campaign and interprovincial exchange visits. Jan. 11-12, First meeting of the Canada-Japan Ministerial Committee, es-
tablished by Prime Minister Diefenbaker and Prime Minister Ikeda in June 1961, held in Tokyo; discussions covered trade and economic relations. Jan. 14, Canada and the Republic of Korea (South Korea) established diplomatic relations. Jan. 18, Death of Hon. Hugh Gaitskell, British Labour Party leader. Sod-turning ceremony for Ontario Research Community-a 300-acre campus of laboratories to be built by private industry and the Ontario Research Foundation-near Toronto. Jan. 29, Britain lost 15 -month struggle to enter European Common Market. Jan. 31, United States in open disagreement with Canada's nuclear weapons policy regarded by all Party leaders in the House of Commons as "unwarranted intrusion into Canadian affairs".

February: Feb. 2, Nyasaland became an independent nation within the Commonwealth after 65 years of British rule. Sod-turning ceremony for Fathers of Confederation Memorial Building took place in Charlottetown, P.E.I., Premier Stanfield of Nova Scotia officiating. Apology by U.S. State Department to Canadian Government for handling of nuclear arms controversy. Death of Chief Justice Patrick Kerwin. Feb. 4, Dr. B. G. Ballard appointed President of the National Research Council. Resignation of Defence Minister Harkness over disagreement on nuclear arms policy. Feb. 5, Very Rev. Eugene Carlisle Lebel appointed first President and Vice-Chancellor of the new nondenominational University of Windsor. Feb. 6, Dissolution of Twenty-Fifth Parliament of Canada. Feb. 7, Death of Hon. Esioff Léon Patenaude of Montreal, former Lieutenant-Governor of Quebec and senior member of the Queen's Privy Council for Canada. Feb. 9, Announcement of the World Health Organization approval of a Canadianinitiated plan for rapid dissemination through the world body of information on the dangerous side-effects of drugs. Feb. 11, Three striking loggers killed and nine others wounded in shooting involving loggers and independent bushworkers near Kapuskasing, Ont. Hon. Roland Michener named chairman of Manitoba's Royal Commission on Local Government Organization and Finance. Feb. 12, Prince Albert of Belgium, heading an economic mission, arrived in Canada for 12-day visit. Feb. 13, Death of George R. Clark, Deputy Minister of Fisheries, in Tokyo. Ontario police round up individuals involved in violence at Kapuskasing; 19 murder charges against independent woodcutters and 400 riot charges laid against striking loggers. Charter for new Brock University in Niagara Peninsula, to open in 1964, presented by Premier Robarts of Ontario. Feb. 14, Thirty-one-day strike of loggers at Kapuskasing ended, with the dispute going before an arbitration board. Feb. 16, Canadians won all four titles in the North American figure skating championships for the first time in 19 years-Donald McPherson of Stratford, Ont; men's singles; Wendy Griner of Toronto, women's singles; Debbi Wilkes and Guy Revell of Unionville, Ont., pairs; and Paulette Doan and Kenneth Ormsby of Toronto, ice dancing. Feb. 18, Justice Minister Fleming announced his retirement from public life after 25 years of service, for personal reasons. Announcement of an anonymous gift of $\$ 4,250,000$ to the Canada Council to enable Canadian students to undertake advanced studies in medicine, science and engineering in Canada, the largest gift received by the Council since its establishment in 1957. Canada Council medals presented to Arthur Lismer, artist; Claude Champagne, musician; and Leoñard W. Brockington, writer and scholar. Report of the Restrictive Trade Practices Commission presented to the Minister of Justice; recommendations included abolition of patents on drugs and better information for doctors about the cost of the products they prescribe. Feb. 19, Bruce Kidd of Toronto awarded the Viscount Alexander Trophy for the outstanding junior male athlete for the
fourth consecutive time. Canada recognized the new Government of Iraq, recently come to power after a revolution. Certain surcharges on imports imposed in June 1962 were eliminated entirely and others reduced, reflecting the continued improvement in Canada's international transactions. Feb. 22, Prime Minister Diefenbaker, accompanied by a trade delegation, left for a three-day visit to London and talks with Prime Minister Macmillan. The 1963 Massey Medal of the Royal Canadian Geographical Society awarded to Graham W. Rowley, archaeologist, explorer, army officer and administrator, for outstanding geographical work in the Canadian Arctic. Feb. 25, Prime Minister Diefenbaker acclaimed a Freeman of the City of London.

March: Winners of Governor General's Literary Awards for 1962 announced: James Reaney (poetry and drama in English); Kildare Dobbs (fiction in English); Marshall McLuhan (critical and expository prose); Jacques Languirand (poetry and drama in French); Jacques Ferron (fiction in French); and Gilles Marcotte (other literary styles in French). By Act of the B.C. Legislature, Victoria College converted to University of Victoria, Simon Fraser University (Burnaby) created, and university powers given to Notre Dame University College at Nelson. Trent University at Peterborough incorporated, to be opened September 1964. Mar. 1, Donald McPherson of Stratford, Ont., won the men's world figure skating championship at Cortina, Italy. Mar. 15, a Viking sword, dating back to the middle of the ninth century, presented by General Odd Bull, Chief of Staff of the Royal Norwegian Air Force, to the Canadian Minister of National Defence in appreciation of help rendered by the Canadian Armed Services to the Norwegian Services, and placed in the Canadian War Museum; evidence of a Viking settlement in northern Newfoundland 500 years before Columbus' time was found in 1961. Mar. 18, Report of Royal Commission on Crime in Ontario released. Mar. 21, Death of L. D. Crestohl, Liberal Member of Parliament for Montreal-Cartier. Mar. 23-May 3, 1963 Trade promotion program of Dept. of Trade and Commerce "Operation World Markets" conducted. Mar. 23-81, 200 foreign businessmen and government officials were brought to Canada to publicize Canadian machinery products. Mar. 25, Dr. Frank G. Patten, Superintendent of Ottawa secondary schools, honoured as "Citizen of the Year" by B'nai B'rith Ottawa Lodge. St. Helen's Island named as site of the 1967 World's Fair. Mar. 29, Vandals shattered the Wolfe Monument on historic Plains of Abraham. Death of Gaspard Fauteux, former Speaker of the House of Commons and Lieutenant-Governor of Quebec.

April: Apr. 1-4. International scientific conference at National Research Council, Ottawa, featured study of NRC invention of U.V. Helava, an analytical plotter being manufactured in Italy. Apr. 2-4, A National Canadian Samples Show, sponsored by the Department of Trade and Commerce and held in Toronto, was attended by more than 600 buyers from Europe, the U.S. and the West Indies. Apr. 8 , Twenty-Sixth General Election; party standing129 Liberal, 95 Progressive Conservative, 23 Social Credit, 17 New Democratic Party and 1 Independent Social Credit. Apr. 9, Sir Winston Churchill made an honorary U.S. citizen, a tribute unique in U.S. history. $A$ pr. 10, New regulations under the Food and Drugs Act give increased federal control over sale of drugs. Apr. 16-May 3, Export Trade Promotion Conference held at Ottawa at which nearly 1,200 Canadian businessmen discussed export opportunities with Trade Commissioners. Apr. 18, The Toronto Maple Leafs won the Stanley Cup, symbol of hockey supremacy. Apr. 19-22, Official visit to Ottawa of Governor of Vermont Philip H. Hoff and members of the State legislature. Apr. 20, W. V. O'Neill killed in one
of several explosions attributed to terrorist activity of the Front de Liberation du Québec (FLQ) in Montreal. Apr. 22, Liberal Government of Premier Louis J. Robichaud returned to power in New Brunswick election. Report of the Quebec Royal Commission on Education recommended formation of a Ministry of Education and a complete reorganization of the administrative structure of the Quebec school system. Apr. 23, Mr. Justice Robert Taschereau appointed Chief Justice of the Supreme Court of Canada. Apr. 24, Marriage of H.R.H. Princess Alexandra of Kent, daughter of Princess Marina of Kent and cousin of H.M. Queen Elizabeth, to Angus Bruce Ogilvy in Westminster Abbey. Apr. 29-30, Tun Abdul Razak Bin Hussein, Al Haj, Deputy Prime Minister of Malaya, guest of the Canadian Government.

May: May 1, Takeover into Hydro-Québec (Quebec Hydro-Electric Commission) of 11 private power companies by Quebec Government became effective. May 1-3, Prime Minister Pearson visited London for consultations with Prime Minister Macmillan; he was received by H.M. Queen Elizabeth and appointed to the British Privy Council. May 3, Hay River and Fort Simspon, N.W.T., inundated by flood waters; more than 1,600 residents airlifted to Fort Smith, Yellowknife and Edmonton. May 4, Construction commenced at Belle Plaine, Sask., of multi-million-dollar plant for the world's first production of potash by solution-mining technique. May 5, Fourth Pan-American Games, with competitors from 21 Western Hemisphere countries, ended in São Paulo, Brazil; Canada won 10 gold medals, 26 silver and 27 bronze, a record second only to that of the U.S. May 8, Air evacuation began of Canadian citizens from troubled Haiti. May 10-11, Prime Minister Pearson visited U.S. President Kennedy at Hyannis Port; announced acceptance of the gift of the former Roosevelt family home on Campobello Island, N.B., to be used by both countries for public purposes. May 14, Upheaval in Social Credit Party resulting in split into two groups-one under National Leader Robert Thompson and the other the Quebec group under Réal Caouette. Agreement signed for the purchase by India of 16 Caribou transport aircraft. Hon. Walter Gordon appointed Canadian Governor of the International Bank and the International Monetary Fund, succeeding Hon. Donald Fleming. May 15, Louis Rasminsky appointed Canadian Alternate Governor of the International Bank. May 16, Gordon Cooper, U.S. astronaut, successfully completed a 22 -orbit flight lasting more than 34 hours. Canada's Twenty-Sixth Parliament opened. May 17, Contract awarded for construction of the National Library and Archives building on Wellington Street, Ottawa. Sgt. Major Walter Leja seriously injured in dismantling one of several bombs set in mail boxes in Westmount, Que.; the Quebec Government offered a $\$ 50,000$ reward for information leading to the conviction of any person responsible for an act of terrorism in Quebec since Apr. 1. May 22-24, Ministerial meeting of NATO in Ottawa. May 23 -25, UNESCO festival and seminar on art films held in Ottawa. May 24, Replica of a relief carved in the workshop of Eleusis presented to Canada as a token of friendship and gratitude for postwar aid given to the people of Greece. May 27 , Announcement that seven graduates from Canadian institutes of technology will attend postgraduate courses in a large company in Dusseldorf, Germany, the first such project under the auspices of the Dept. of Labour. Northern Alberta Institute of Technology at Edmonton opened. Dr. Wilder Penfield, Montreal neurosurgeon, installed as the first Canadian member of the Polish Academy of Science. May 29 , Official opening of a new permanent exhibit at the National Museum of Canada-Hall of Canadian Eskimos-by Northern Affairs Minister Laing, inaugurating the Museum's modernization and enlargement program.

June: June 2, Dr. Charles F. Comfort, Director of the National Gallery, awarded the Italian Medaglio al Merito Culturale for his efforts to strengthen cultural ties between Canada and Italy. June 3, Labour College of Canada, the first in North America, opened in Montreal. Death of His Holiness Pope John XXIII. Government decision to establish a 12 -mile exclusive fisheries zone off Canadian coastline, beginning in mid-May 1964, announced. June 5 , Canadian Government contribution of $\$ 10,000$ for provision of supplies for victims of cyclone and flood in East Pakistan announced. Death of Senator Donat Raymond of Montreal. June 6, Trailer camp leased by the Federal Government temporarily to accommodate victims of Hay River, N.W.T., flood. June 7, House of Commons approved establishment of a Special Committee on Defence. June 8, Ceremony commemorating 150th anniversary of the Battle of Stoney Creek between Britain and the U.S. (June 8, 1813); speakers were Prime Minister Pearson and U.S. Ambassador Butterworth. June 10-11, Georges Schoeters, 33 -year-old native of Belgium, Raymond Villeneuve, 19-year-old student, and Gabriel Hudon, 20 -year-old draughtsman, identified themselves as the three founding members of the FLQ. June 12, Final report of the Glassco Royal Commission released. June 15, Charges of breach of Budget security brought by Opposition against Finance Minister Gordon when it was revealed that three "outside" experts had assisted in preparation of the Budget. June 17, Social Credit Government of Premier Ernest C. Manning returned to power in Alberta election. June 19, The world's first woman cosmonaut, Valentina Tereshkova of the U.S.S.R., landed safely after 49 orbits of the earth that began three days earlier; at the same time, the U.S.S.R.'s fifth cosmonaut, Lt.-Col. Valery Bykovsky, landed after 82 orbits begun five days earlier. June 21, Giovanni Batista Cardinal Montini, Archbishop of Milan, elected 262nd ruler of the Roman Catholic Church; to be known as Pope Paul VI; coronation took place June 30. June 20, The Ottawa Technical High School Band left on a six-week tour of Europe; more than 20 appearances in England and 10 in Holland were scheduled. June 23, Death of Dr. H. A. Bruce of Toronto, former Lieutenant-Governor of Ontario. June 25, Voluntary medical care insurance program of Alberta Government began with unqualified support of both doctors and insurance companies. June 29, Fines of $\$ 200$ each paid by 138 bushworkers of the Lumber and Sawmill Workers' Union (CLC) convicted on unlawful assembly charges arising from a Feb. 11 strikersettler clash at Reesor Siding, Ont.

July: July 2, In response to urgent need in Barbados, Canada provided 50,000 doses of polio vaccine and several respirators. July 3, Death of Senator John G. Higgins of St. John's, Nfld. Miss Margaret MacLaren, head of the St. John Ambulance Nursing Services in Canada, invested as a Dame Grand Cross of the Order of St. John of Jerusalem, the first Western Hemisphere woman to receive this honour. July 4-6, Visit of Sir Robert Menzies, Prime Minister of Australia, to Canada. July 5, Four of the five persons charged with non-capital murder in the death of Wilfred V. O'Neill, killed in explosion of a time bomb in Montreal, committed for trial. July 10, Accord between the Federal and British Columbia Governments regarding the Columbia River Treaty announced. July 11, Commencement of construction of a $\$ 50,000,000$ iron ore pelletizing plant at Pointe Noire on the Quebec side of the Labrador-Quebec border announced by Premier Lesage. July 12, Monument of Queen Victoria in Quebec destroyed in dynamite explosion. Death of Herbert H. Hannam, President of the Canadian Federation of Agriculture since 1949. July 15, Report of Mr. Justice T. G. Norris, results of the inquiry of the Royal Commission on Great Lakes Shipping, tabled in the

House of Commons; recommended appointment of a board of trustees to control the major maritime transportation unions. July 19, President Julius Nyerere of Tanganyika visited Ottawa as guest of the Canadian Government. July 20, Scientists from other parts of the world gathered in various parts of Canada to study eclipse of the sun. July 21, British freighter and Bermuda ore carrier collided in St. Lawrence River; 18 dead and 15 missing. July 22, Federal Art providing for the establishment of a Department of Industry received Royal Assent; Hon. C. M. Drury to be Minister. Membership of the Royal Commission on Bilingualism and Biculturalism, under the co-chairmanship of André Laurendeau and Davidson Dunton, announced. Sir Zafrulla Khan, President of the United Nations General Assembly, visited Ottawa. July 23-24, General Lyman L. Lemnitzer, Supreme Allied Commander, Europe, visited Ottawa. July 27, Perforated breakwater, developed by the National Research Council to reduce wave action that prevents berthing of ships, officially opened at Baie Comeau, Que. July 30, Announcement of entry of Japan as a full member of OECD. July 31, Federal Act increasing salaries of all federally appointed judges of superior, district and county courts received Royal Assent.

August: Aug. 1, End of dispute over ownership of the B.C. Electric Company; the B.C. Government accepted the valuation placed on that utility by the B.C. Supreme Court. Aug. 2, Federal Act establishing the Economic Council of Canada received Royal Assent; John J. Deutsch appointed Chairman. Federal Act increasing sessional and other allowances of Members of the House of Commons and the Senate, received Royal Assent. Policy of full twinning of locks of the Welland Canal announced by Transport Minister McIlraith; construction to begin in the winter of 1963-64 and to be completed in 1968. A second long-term wheat sales agreement with Communist China worth $\$ 300,000,000$ or more announced by Trade Minister Sharp. (First agreement signed in April 1961 worth $\$ 400,000,000$.) Aug. 5 , The U.S., Britain and the U.S.S.R. signed a treaty in Moscow banning nuclear tests in the atmosphere, outer space and under water; Canada signed Aug. 8. Aug. 5-6, Annual Conference of Provincial Premiers held at Halifax. Aug. 7, Canadian gift to Greece of $\$ 1,000,000$ worth of food products. Aug. 11, The Bank of Canada increased its lending rate from $3 \frac{1}{2}$ p.c. to 4 p.c. Aug. 12, Canada's 1967 World's Fair site at Montreal inaugurated by Prime Minister Pearson; Federal Government's contribution will be at least $\$ 50,000,000$. Aug. 13, Eleven-day congress of Anglican Church, comprising 1,000 delegates from 78 countries, began in Toronto. Aug. 16, Canada and the U.S. reached agreement on conditions under which nuclear warheads will be made available for Canadian forces engaged in North American defence and assigned to NATO. Aug. 23, Announcement of approval by Governments of Canada and the U.S. for Canadian participation in testing of experimental communication satellites. Aug. 26, The Sept. 21 opening of Place des Arts Concert Hall in Montreal cancelled after two unions failed to agree on which should represent performers at the Hall.
September: Sept. 1, Quebec members of Social Credit Party voted to disown Robert N. Thompson as national party leader. Sept. 5, Convention of Social Credit Party ended; Robert N. Thompson remained as national leader and Quebec members backed Réal Caouette. Sept. 6, Resignations of four senior staff members of the National Museum over plans for new building. Thirty-five highunemployment areas in Canada designated by the Federal Government to be tax-free for three years as inducement to development of new industries. Pierre Dupuy, retiring Canadian Ambassador to France, appointed Commissioner-General of the

1967 World's Fair. Sept. 9, Federal-provincial conference opened in Ottawa. Sept. 13, Resignation of Hon. George A. Drew as Canadian High Commissioner to Britain. Sept. 16, The Federation of Malaysia created, uniting the Federation of Malaya, the State of Singapore and the Crown colonies of North Borneo and Sarawak, and became a member of the Commonwealth. Announcement of agreement with the U.S.S.R. for the largest single wheat sale in Canadian history; value of shipments to that country in the current crop year to approach $\$ 500,000,000$. Sept. 17, Eighteenth session of the UN General Assembly opened; Prime Minister Pearson addressed the Assembly and outlined proposals for strengthening the UN peace-keeping forces. Sept. 18, Princess Alice, Countess of Athlone, arrived in Ottawa on semiofficial visit; as Colonel-in-Chief of the Princess Louise Dragoon Guards, she presented a regimental standard in a ceremony on Parliament Hill on Sept. 21. Sept. 19, Plans for a $\$ 100,000,000$ redevelopment of the Confederation Square and Union Station area of Ottawa announced. Sept. 20, The Canadian freighter Howard L. Shaw sailed from Chicago empty of cargo after a five-month boycott marked by shooting and an explosion, as conferences between union and government officials of the U.S. and Canada indicated possibility of a government trusteeship over maritime unions in Canada. Department of External Affairs announcement that Canada is sending relief supplies of powdered milk and tinned meat to Brazil following severe droughts and forest fires. Sept. 21, Montreal's new concert hall, Place des Arts, opened with performance by Montreal Symphony Orchestra; opening marred by demonstration of separatists. Sept. 24, Canadian delegation headed by Privy Council President Lamontagne left for Commonwealth conference in London on finance and trade preceding International Monetary Fund meeting. Sept. 25, Death of Senator C. V. Emerson of Saint John, N.B. Sept. 26, Progressive Conservative Government of Premier John P. Robarts returned to power in Ontario election, with an increased majority. Sept. 27, Establishment of $\$ 2,000,000$ C. D. Howe Memorial Foundation set up by individual and corporation contributions to give financial assistance to young persons who give promise of leadership and decisive achievement. Sept. 30, Social Credit Government of Premier W. A. C. Bennett returned to power in British Columbia election.
October: Oct. 1, Death of Miss Margaret MacLaren, Superintendent-in-Chief, St. John Ambulance Brigade in Canada. Oct. 2, Twenty men cleared on charges of non-capital murder in the shooting of three striking bushworkers and on charges of rioting, by Ontario Supreme Court Grand Jury; three charged with possession of offensive weapons and fined $\$ 100$ each. Oct. 4, Strike of 3,800 longshoremen in three St. Lawrence River ports began, delaying shipment of wheat to U.S.S.R. Oct. 7 , Eleven members of FLQ pleaded guilty to terrorist activities; sentences ranging from six months to 12 years were imposed for charges ranging from public mischief to manslaughter. Oct. 7-9, His Imperial Majesty Haile Selassie I, Emperor of Ethiopia, on state visit to Canada. Oct. 8, Progressive Conservative Government of Premier R. L. Stanfield returned to power in Nova Scotia election. Oct. 9, Agreement between Canada and U.S. to provide for the storage of nuclear-tipped missiles at two U.S. Air Force interceptor bases in Newfoundland announced by Prime Minister Pearson. Oct. 10, Nobel Peace Prize for 1963 awarded to the International Red Cross Committee and the League of Red Cross Societies in recognition of their work in the international field. Oct. 12, Open criticism by U.S. leaders of Canadian proposal to put maritime unions under government trusteeship aroused indignant Canadian reaction. Quebec longshoremen's strike forced CPR ship Empress of Canada to sail from Montreal to Halifax
to disembark her passengers. Death of Senator Mark Drouin of Quebec, Que., former Speaker of the Senate. Oct. 15, Canada's contribution to the UN Special Fund doubled to $\$ 5,000,000$. Oct. 16, Old age security pensions increased to $\$ 75$ monthly. Oct. 18, Longshoremen of the Seafarers' International Union left their ships and marched on Parliament Hill at Ottawa in protest against trusteeship. Lord Home invited to form a government to succeed Sir Harold Macmillan who resigned as Prime Minister of Britain on the grounds of ill health. Oct. 21, House of Commons concurred in report (Oct. 9) of Committee on Privileges and Elections to give precedence in the House to the Thompson Social Creditors and to recognize the Caouette Social Credit Rally (Ralliement des Creditistes) as a separate group in the House. Announcement of new nuclear agreement between Canada and Britain on the development of heavy water reactors using natural or enriched uranium fuel, a Canadian-pioneered system. Oct. 23, The Maritime Transportation Unions Trustee Act placing the maritime unions of Canada under the management and control of trustees received Royal Assent; three-man board of trustees appointed. To be eligible to stand for election to the British House of Commons, Lord Home entered a "disclaimer" of his four hereditary titles. Oct. 24, SIU longshoremen voted to end their walkout and return to work. Oct. 28, Government announcement that $\$ 45,000$ had been made available from Canadian sources, of which $\$ 10,000$ was a grant from public funds to victims of the earthquake at Skopje, Yugoslavia. Oct. SO, U.S. Grain Workers Union, Local 418, ordered by Chicago court to pay $\$ 26,500$ in fines for refusing to load Canadian ships. Young member of FLQ given three-year prison sentence for Westmount bomb incident that crippled Sgt. Maj. Walter Leja; three others placed on probation.
November: Nov. 1, SIU documents seized by RCMP. Nov. 5-7, SIU leader Hal C. Banks and others charged with conspiring to cause bodily harm by assault to Ship's Captain H. F. Walsh of Welland, Ont., in 1957. Nov. 6, Death of John Wilson McConnell, former President of the Montreal Star. TCA jet airliner with 90 passengers and a crew of seven crashed on take-off from London Airport in fog; no lives lost. Nov. 7, Sir Alec Douglas-Home elected Member of British Parliament for Kinross and West Perthshire in a by-election. Nov. 11-16, Canada Week Trade Fair in Philadelphia, U.S.A., sponsored by the Dept. of Trade and Commerce; featured, in addition to Canadian products displays, were champion Canadian skaters and an RCN flotilla. Nov. 19, Unveiling of portrait of Rt. Hon. R. B. Bennett, the late Canadian Prime Minister, to be hung near the Commons Chamber in Ottawa. Opening of the Royal Agricultural Winter Fair in Toronto; world championship wheat title won by George Luco of Lethbridge, Alta.; title for barley by J. E. French of Mitchell, Ont.; for flax by John E. Cotton of Kenville, Man.; for oats by Jeffrey Abbott of South Edmonton, Alta.; and for potatoes by Mrs. A. R. Chorney of East Selkirk, Man.; Sandra Peart of Guelph, Ont. won Queen's Guineas, top prize for 4-H Club members, for her Shorthorn steer. Nov. 15, Accidental death of Senator Duncan K. MacTavish of Ottawa. Death of Senator Calvert Coates Pratt of St. John's, Nfld. Death of Francis C. C. Lynch former head of the National Museum. Nov. 18, Governor General and Mme Vanier received honorary counsellorships-the highest title the Canadian Red Cross Society can bestow in recognition of their service to the Red Cross during and after the Second World War. Nov. 19, Death of Mayor Donald Summerville of Toronto. Nov. 22, Death of U.S. President John Fitzgerald Kennedy in Dallas, Texas, from an assassin's bullet; burial was in Arlington National Cemetery Nov. 25. Vice-President Lyndon Baines Johnson sworn in as 36th President of the United States.

## APPENDIX

Certain information given in Chapter II on Constitution and Government (closed off Apr. 30, 1963) is brought up to the date of going to press (Nov. 15, 1963) in this Appendix.

## Page 69, Table 4

On July 25, 1963, Hon. Charles Mills Drury, Minister of Defence Production, was appointed Minister of Industry.

## Pages 70-71, Table 5

Queen's Privy Council for Canada appointments from Apr. 30 to Nov. 15, 1963 are given in the Register of Official Appointments, p. 1164.

## Pages 73-74, Table 8

Senate appointments from Apr. 30 to Nov. 15, 1963 are given in the Register of Official Appointments, p. 1165. Deaths of Senators, creating vacancies, are noted in the Chronology. At Nov. 15, 1963 there were five vacancies.

## Page 76

The final list of Members of the House of Commons, the number of voters on the list and the votes polled at the Twenty-Sixth General Election of Apr. 8, 1963, and the provincial summary of the voters and votes polled, which data were not available at the time of printing of Chapter II, are here given in Tables 1 and 2.
1.-Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-Sixth General Election, Apr. 8, 1963.

Speaker.
Prime Minister
Hon. Alan A. Macnaughton

Clerk of the House of Commons.
Léon J. Raymond

Note.-The vote is summarized by provinces in Table 2, p. 1185. The leaders of the political parties are indicated by asterisks (*). For Parliamentary Secretaries, see p. 69. This information, except 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; L.-Lab. $=$ Liberal-Labour.

| Province and Electoral District | Population, Census 1961 | Voters List | Total Votes Polled | Votes <br> Polled <br> by <br> Mem- <br> ber | Name of Member | P.O. Address | Party Affiliation |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Newfoundland - <br> ( 7 members) | No. | No. | No. | No. |  |  |  |
| Bonavista-Twillingate.. | 50,527 | 24,706 | 16,185 | 11,748 | Hon. J. W. Pickersgill. | Ottawa, Ont. | $\operatorname{Lib}_{\text {Lib. }, ~}$ |
| Burin-Burgeo......... | 48,673 | 22,684 | 14,682 | 12,167 | C. W. Carter........... | St. John's | Lib. ${ }^{\vee}$ |
| Bay-Labrador.. | 82,433 | 41,239 | 25,977 | 18,233 | C. R. M. Granger. | St. John's. | Lib. ' |
| Humber-St. George's.. | 74,015 | 32,151 | 22,897 | 13,605 | H. M. Batten. . | Corner Brook | Lib. ${ }^{\text {d }}$ |
| St. John', East......... | 77,070 | 38,018 | 28,854 | 14,768 | J. P. O'Keefe. | St. John's..... | Lib. |
| St. John's West. ... | 68,979 56,156 | 33,693 28,830 | 26,327 17,253 | 14,724 12,31 | R. J. Cashin.. | St. John's........ | Lib. |
| Prince Edward Island- <br> (4 members) <br> Kings |  |  |  |  |  |  |  |
| Kings................... | 17,893 | 9,969 20 | 9,108 17,675 | 4,705 | J. Mullally........... | Souris........ | $\operatorname{Lib}_{\mathrm{T}: \mathrm{h}}$ |
| Prince.. | 40,894 | 20,588 | 17,675 | 88,967 | Hon. J. W. MACNAUGHT <br> Hon. J. A. MacLean... | Ottawa, Ont.... |  |
| Queens. | 45,842 | 26,472 | 42,703 | 11,608 | H. N. Macouarrie...... | Mills. | P.C. |
| Nova Scotia( 12 members) Antigonish- |  |  |  |  | .... | Victari....... |  |
| Guysborough. | 27,634 | 14,905 | 12,852 | 6,847 | J. B. Stewart | Bayfield. | Lib. |
| Cape Breton NorthVictoria. | 50,957 | 25,646 | 21,490 | 10,508 | R. Muir. | Sydney Mines | P.C. $\vee$ |

1.- Mectoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-Sixth General Election, Apr. 8, 1963 -continued.

| Province and Electoral District | $\begin{aligned} & \text { Popu- } \\ & \text { lation, } \\ & \text { Census } \\ & 1961 \end{aligned}$ | Voters List | Total <br> Votes <br> Polled | Votes Polled by Member | Name of Member | P.O. Address | Party Affiliation |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Nova Scotia-concluded | No. | No. | No. | No. |  |  |  |
| Cape Breton South.... | 85,001 | 42,671 | 36,986 | 14,307 | D. Macinnis. | Glace Bay. | P.C. |
| Colchester-Hants. . | 60,751 | 34,513 | 29,511 | 14,387 | C. F. Kennedy | Truro. |  |
| Cumberland. | 37,767 | 21,573 | 18,079 | 9,034 | R. C. Coates. | Amherst | P.C. |
| Digby-Annapolis-Kings | 76,073 | 39,793 | 34,091 | 16,887 | Hon. G. C. Nowlan.... | Wolfville | P.C. |
| Halifax. | 225,723 | 122,846 | 183,402 | $\left\{\begin{array}{l} 46,274 \\ 45,173 \end{array}\right.$ | J. E. Lloyd <br> G. A Regan | Halifax. Halifax | Lib. |
| Inverness-Richmond. | 33,907 | 19,068 | 15,448 | 8,373 | Hon. A. J. MacEachen | Ottawa, Ont | Lib. |
| Pictou. | 43,908 | 24,809 | 20,793 | 10,566 | H. R. MacEwan........ | New Glasgow | P.C. |
| Queens-Lunenburg. | 48,153 | 29,684 | 24,105 | 12,591 | L. R. Crouse. | Lunenburg. | P.C. |
| Clare.......... | 47,133 | 26,366 | 22,595 | 11,607 | F. T. Armstrong | Yarmouth | Eib. |
| New Brunswick( 10 members) |  |  |  |  |  |  |  |
| Charlotte.. | 23,285 | 13,726 | 11,939 | 6,279 | A. M. A. McLean. | Blacks Harbour. . | Lib. |
| Gloucester | 66,343 | 29,182 | 23,423 | 13,344 | Hon. H.-J. Robichaud.. | Ottawa, Ont | Lib |
| Kent. | 26,667 | 12,294 | 10,077 | 5,971 | G. Crossman.. | Buctouche | Lib. |
| NorthumberlandMiramichi....... | 50,035 | 23,240 | 18,182 | 10,148 | G. R. McWillam. | Newcastle. | Lib. |
| Restigouche- |  |  |  |  | J.-E. Du | Campbell |  |
| Royal...... | 37,548 | 21,806 | 17,882 | 9,524 | R. G. L. Fairweather. | Rothesay |  |
| Saint John-Alber | 101,736 | 57,601 | 42,112 | 21,584 | T. M. Bell............. | Saint John | P.C. |
| Victoria-Carleto | 43,219 | 22,180 | 18,039 | 10,572 | Hon. H. J. Flemming. | Juniper. | P.C. |
| Westmorland | 93,679 | 50,361 | 41,905 | 19,989 | S. H. Rideout. | Moncton |  |
| York-Sunbury | 75,468 | 38,330 | 32,859 | 15,827 | J. C. MacRae. | Frederict | P.C. |
| Quebec- <br> (75 members) <br> Argenteuil-Deux- <br> Montagnes..... | 64,667 | 34,905 | 29,027 | 12,324 | V. Drourn | St. Eustache | Lib. |
| Beauce..... | 61,332 | 30,234 | 25,211 | 12,627 | G. Perron. | St. Joseph de Beauce. |  |
| Beauharnois-Salaberry. | 70,191 | 38,619 | 31,299 | 15,892 | G. Laniel. | Valleyfield. | Lib. |
| Bellechasse............ | 32,513 | 15,834 | 12,336 | 5,434 | H. Laverdiere. | St. Lazare Village | Lib. |
| Berthier-MaskinongeDelanaudière | 48,749 | 25,806 | 20,573 | 8,471 | R. Paul. | Louiseville. | P.C. |
| Bonaventure. | 42,962 | 20,632 | 16,304 | 9,092 | A. Béchard | Carleton sur Mer. | Lib. |
| Brome-Missisquoi | 43,217 | 23,734 | 18,971 | 8,411 | W. H. Grafftey | Knowlton. | P.C. |
| Chambly-Rouville | 60,959 | 32,287 | 24,770 | 13,850 | B. Pilon. | Beloeil. | Lib. |
| Champlain | 63,086 | 32,715 | 27,987 | 12,446 | J.-P. Matte. | St. Tite. | Lib. |
| Chapleau. | 71,394 | 33,901 | 25, 130 | 14,701 | G. Laprise. | La Sarre | S.C |
| Charlevoix. | 48,906 | 24,136 | 20,184 | 7,390 | L.-P.-A. Bélanger. .... | Beaupré.......... | S.C. |
| Châteauguay-Huntingdon- |  |  |  |  |  |  |  |
| Laprairie... | 61,729 | 33,660 | 23,262 | 10,746 | I. Watson | Howick.......... | Lib. |
| Chicoutimi........ | 83,635 42,366 | 38,087 20,227 | 31,541 15,931 | 14,581 6,234 | M. Со̂te.... | Chicoutimi North | S.C. |
| Dorchester............ | 38,953 | 18,049 | 14,332 | 5,830 | P.-A. Boutin. | Ste. Marguerite de Dorchester | S.C. |
| Drummond- | 89,851 | 45,601 | 37.184 | 17,338 | J.L Pépin | Drummondville. | Lib. |
| Gaspé.... | 65, 300 | 29,804 | 23,982 | 10,738 | A. Cyr. | Chandler. | Lib. |
| Gatinea | 58,771 | 31, 116 | 25,030 | 11,589 | R. Leduc. | Maniwaki | Lib. |
| Hull | 86,563 | 44,713 | 37,379 | 19,667 | A. Caron. | Hull. | Lib. |
| Îles-de-la-Madeleine. | 12,479 | 5,656 | 4,827 | 3,053 | M. Sauvé. | Montreal. | Lib. |
| Joliette-L'AssomptionMontcalm | 102,717 | 54,060 | 38,117 | 16,103 | L.-J. Pigeon. | Joliette. | P.C. |
| Kamouraska | 35,312 | 17,736 | 12,967 | 6,286 | C.-E. Dionne. | St. Pascal | S.C. |
| Labelle. | 45,701 | 22,228 | 17,487 | 6,951 | G. Girouard. | Mont Laurier. | S.C. |
| Lac-Saint-Jea | 48, 149 | 21,777 | 18,606 | 9,318 | M. Lessard. | Alma. | S.C. |
| Lapointe | 74,408 | 33,482 | 28,455 | 13,312 | G. Grégoire. | Lapointe. | S.C. |
| Lévis. | 49,047 | 27,374 | 23,778 | 9,634 | R. Guay. | Lauzon. | Lib. |
| Longueuil | 107,318 | 56,390 | 43,030 | 17,223 | J.-P. Côté. | Longueuil | Lib. |
| Lotbinière | 38,529 | 18,301 | 16,028 | 6,957 | A. Choquette | Quebec. | Lib. |
| Matapédia-Matane | 67,226 | 29,145 | 24,079 | 10,265 | Hon. R. Tremblay | Ottawa, Ont...... | Lib. |
| Megantic. | 70,064 | 33,276 | 26,055 | 11,329 | R.-C. Langlots. | Thetford Mines.. | S.C. |
| Montmagny-L'Islet | 40,987 | 20,591 | 16,076 | 7,096 | J. Berger. | Montmagny | ${ }_{\text {Lib. }}$ |
| Nicolet-Yamaska...... | 45, 192 | 23,968 | 19,767 | 9,438 | C. Vincent. | Ste. Perpétue. | P.C. |

1.-Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-Sixth General Election, Apr. 8, 1963 -continued.

| Province and <br> Electoral District | Population, Census 1961 | Voters on | Total <br> Votes Polled | Votes Polled by Member | Name of Member | P.O. Address | Party Affiliation |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. |  |  |  |
| Quebec-concluded |  |  |  |  |  |  |  |
| Témiscamingue | 41,069 | 20,000 | 17,029 | 6,449 | Hon. P. Martine | Campbell's Bzy.. | P.C. |
| Portneuf.. | 48,137 | 25,385 | 20,564 | 11,473 | J.-L. Frenette | St. Marc des |  |
| Quebec East | 92,170 | 54,163 | 44,873 | 18,661 | R. Beaulé. | Quebec | S.C. |
| Quebec South | 54,535 | 36,316 | 30,178 | 16,314 | J.-C. Cantin | Quebec |  |
| Quebec West. | 57,763 | 33,006 | 27,539 | 13, 136 | L. Plourde. | Quebec. | S.C |
| Quebec-Montmorency. | 138,030 | 76,279 | 62,953 | 28,147 | G. Marcoux | Beauport | S.C. |
| Richelieu-Verchères. | 60,832 | 34,040 | 26,887 | 14,194 | Hon. L. Cardin. | Ottawa, Ont... | Lib. |
| Richmond-Wolfe. | 60,534 | 28, 473 | 22,195 | 8,762 | P.-T. Asselin | Bromptonville | Lib. |
| Rimouski. | 75,076 | 35,921 | 29,394 | 12,414 | G. Ouellet. | St. Mathieu | S.C. |
| Rivière-du-LoupTémiscouata... | 58,909 | 26,916 | 22,710 | 10,753 | R. Gendron | Rivière du Loup. . | Lib. |
| Roberval....... | 56,234 | 24,570 | 20, 107 | 10,345 | C.-A. Gauthie | Mist | S.C. |
| Saint-HyacintheBagot. | 63,942 | 35,276 | 26,674 | 13,716 | Hon. T. Ricar | St. Hyacint | P.C. |
| Saint-Jean-Iberville- |  |  |  |  |  | St. Jean | Lib. |
| Napierville......... | 65, 464 | 33, 514 | 28,168 | 14, 1458 | J. Chrétien | Shawinigan | Lib. |
| Saguenay.... | 81,097 | 46,781 | 32,853 | 13,896 | G. Brourn | Sept Iles. | Lib. |
| Shefford | 67,962 | 35, 104 | 26,815 | 9,989 | G. Rondeaut | St. Césaire | S.C. |
| Sherbrook | 73,417 | 41,514 | 32,067 | 12,708 | G. Chapdelaine | Sherbrooke | S.C |
| Stanstead | 43,309 | 23,844 | 18,899 | 7,649 | Y. Forest. | Magog | Lib |
| Terrebonne | 102,450 | 55, 872 | 41,716 | 19,015 | L. Cadieux... | St. Jérôme.... |  |
| Trois-Rivières. | 68,854 | 39,790 | 32,845 | 14,558 | Hon. L. Balcer | Trois Rivières... <br> Ile Perrot | Pib. |
| Vaudreuil-Soulange | 38,756 | 21,061 36,305 | 17,532 30,115 | 8,639 18,096 | R. Emard.. <br> R. Caouett | Ile Perrot Rouyn.... | S.C. |
| Montreal and Jesus <br> Islands- |  |  |  |  |  |  |  |
| Cartier | 51,819 | 19,944 | 13,842 | 6,642 | M. L. Klein. |  | Lib. |
| Dollard | 107, 394 | 58,212 46,587 | 41,808 28,717 | 23,764 13,093 | G. Rouleau | Montreal Montreal | Lib. |
| Jacques-Cartier- | 79,912 |  |  |  | R. Rock | Lachine | Lib. |
| Lafontain | 163,148 50,325 | 31,411 | 21,975 | 10,929 | G.-C. Lachance. | Montreal | Lib |
| Laurier | 45,652 | 26,870 | 18,226 | 8,059 | Hon. L. Chevrier | Ottawa, Ont |  |
| Laval | 193,437 | 112,822 | 81,825 | 43,452 | J.-L. Rochon.. | Montreal | Lib. |
| Maisonneuve-Rosemont | 108,023 | 64,850 | 42,704 | 20,595 | Hon. J.-P. Deschatelets | Ottawa, Ont | Lib |
| Mercier | 233, 964 | 120,083 | 80,904 | 33,450 | P. Boulanger. | Montre |  |
| Mont-Roya | 128, 524 | 74,982 | 54,180 | 37,648 | Hon. A. A. Macnaughton. | Otawa, | Lib. |
| Notre-Dame-de-Grâce. | 100,719 | 61,237 | 47,731 | 30,532 | E.-T. Asselin. | Montreal |  |
| Outremont-Saint-Jean | 63,888 | 33,945 | 23,856 | 13,305 | Hon. M. Lamontagne... | Ottawa, O |  |
| Papineau. | 87,588 | 48,526 | 30,605 | 15,677 | Hon. G. Favreau. | Ottawa, <br> Montreal | Lib. |
| St. Ann..... | 38,173 | 19,601 | 12,989 | 7,215 | G. Loiselle | Montrea |  |
| Westmount | 59,609 | 38,175 | 27,731 | 16,635 | Hon. C. M. Drury.... | Ottawa, Ont. | b. |
| Saint-Denis | 65,090 | 36,516 | 23,341 | 11,707 | Hon. A. Dents. | Ottawa, O |  |
| Saint-Henri | 71,691 | 39,202 | 27,604 | 13,981 | H.-P. Lessard. | Montreal | Lib |
| Saint-Jacques. | 54,679 | 33,045 | 20,592 | 7,841 | M. Rinfret | Montrea |  |
| St. Lawrence- | 34,020 | 22,294 | 14,880 | 8,552 | J. N. Turner. | Montreal | Lib. |
| Sainte-Ma | 56,455 | 32,253 | 20,491 | 8,549 | G.-J. Valade. | Montreal |  |
| Verdun. | 78,317 | 46,396 | 35, 223 | 19,473 | B. S. Mackase y........ | Verdun. | Lib. |
| $\begin{aligned} & \text { Ontario- } \\ & (85 \mathrm{members}) \end{aligned}$ |  |  |  |  |  |  |  |
| Algoma East. | 54,868 80,542 | 25,104 | 20,897 | 10,817 |  | Sault Ste. Marie. | Lib. |
| Brantford. | 54,392 | 30,700 | 25,115 | 10,804 | J. E. Brown. | Brantford |  |
| Brant-Haldiman | 57,644 | 32,337 | 26,576 | 12,733 | L. T. Pennell. | Brantford |  |
| Bruce. | 29,334 | 17,382 | 14,541 | 7,451 | J. Loney...... | Tiverton |  |
| Carleton | 130,497 | 77,910 | 67,728 | 32,325 | C. L. Francis. | Ottawa. | Lib. |
| Cochrane | 47, 854 | 24,613 | 18,951 | 7,809 | J.-A. Habel. | Kapuskasing | P. |
| Dufferin-Simcoe | 53,226 | 26,173 | 21,738 | 10,278 8,720 | J. E. Madill. | Orangevile | Lib. |
| Durhan | 39,916 62,862 | 21,873 | -18,994 | 13,957 | J.A. McBain. | St. Thomas | P.C. |
| ${ }_{\text {Essex }}$ Elgin | 99, 432 | 53,589 | 43,520 | 25,727 | Hon. P. Martin | Ottawa | , |
| Essex South | 55, 816 | 29,631 | 25,725 | 12,947 | E. F. WH | Amherstbu | Lib. |

1.-Mectoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-Sixth General Election, Apr. 8, 1963
-continued.

| Province and <br> Electoral District | Population, Census 1961 | Voters List | Total Votes Polled | Votes <br> Polled <br> by <br> Mem- <br> ber | Name of Member | P.O. Address | Party Affiliation |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. |  |  |  |
| Essex West. | 101,526 | 55,689 | 41,877 | 23,165 | H. E. Gra | Windso | Lib. |
| Fort William | 57,642 | 30,885 | 26,436 | 11,765 | H. Badanar. | Fort William | Lib. |
| Glengarry-Prescott | 46,443 | 24,336 | 20,057 | 9,906 | V. Ethier. | Glen Robertso | Lib. |
| Grenville-Dundas. | 40,026 | 22,592 | 18,155 | 10,434 | Jean Casselman | Prescott. | P.C. |
| Grey-Bruce. | 36,883 | 21,648 | 18,593 | 10,535 | E. A. Winkler | Hanover | P.C. |
| Grey North | 38,824 | 23, 110 | 19,225 | 9,804 | P. V. Noble. | Shallow Lake | P.C. |
| Halton.. | 107,285 | 59,151 | 49,368 | 25, 482 | H. C. Harle y | Oakville. | Lib. |
| Hamilton East | 65,287 | 36,132 | 28,397 | 13,167 | J. C. Munro. | Hamilton |  |
| Hamilton South | 121,161 | 67,669 | 54,451 | 19,205 | W. D. Howe. | Hamilton | N.D.P. |
| Hamilton West | 72,131 | 41, 264 | 31,380 | 13,701 | J. Macaluso. | Hamilton |  |
| Hastings-Fronte | 48,217 | 26, 206 | 20,637 | 12,321 | R. A. Webb............. | Norwood | P.C. |
| Hastings South | 70,806 | 37,041 | 32, 228 | 15,505 | R. Temple. | Belleville | Lib. |
| Huron. | 48,355 | 26,076 | 22,547 | 12,224 | L. E. Cardify | Brussels. | P.C |
| Kenora-Rainy R | 72,775 | 36,006 | 27,327 | 16,794 | Hon. W.M. Benidickson | Ottawa | b. |
| Kent. | 71,285 | 39,541 | 32,307 | 15,381 | H. W. Danforth. | Blenheim |  |
| Kingston | 76,485 | 40,993 | 34,198 | 18,425 | E. J. Benson. | Kingston | Lib |
| Lambton-Ke | 43,235 | 24,323 | 20,233 | 9,520 | Mac T. McCutcheon... | Florence. | P.C. |
| Lambton | 78, 482 | 41,342 | 32,760 | 15,978 | W. F. Foy. | Sarnia.. | b. |
| Lanark | 40,081 | 22,565 | 18,579 | 10,475 | G. H. Doucetr | Carleton Pl | P.C. |
| Leeds. | 47,121 | 26,867 | 22,183 | 12,113 | J. R. Matheson | Brockville. | Lib. |
| Lincoln | 126,674 | 70,159 | 55,846 | 25,902 | J. C. McNulty | St. Catharines | Lib. |
| London | 73,970 | 44, 283 | 34, 229 | 15,700 | J. A. Irvine. | Lambeth | P.C. |
| Middlesex Eas | 101,721 | 57,158 | 44,599 | 19,850 | C. E. Millar | London. | P.C. |
| Middlesex Wes | 45,731 | 25,585 | 21,299 | 10,247 | W. H. A. Thomas | Strathroy | P.C. |
| Niagara Falls | 78,010 | 42,688 | 31,480 | 18,749 | Hon. Judy V. LaMarsh | Ottawa. | Lib. |
| Nickel Belt | 76,307 | 35,277 | 29,905 | 13,414 | O.-J. Godin | Sudbury | Lib. |
| Nipissing | 68,173 | 34,851 | 27,984 | 16,547 | Hon. J. R. Garland | Ottawa. | Lib. |
| Norfolk | 50,475 | 27,464 | 22,973 | 10,862 | J. M. Roxburgh. | Simcoe | Lib. |
| Northu | 42,768 | 24,226 | 21,376 | 10,343 | Pauline Jewett | Brighton | Lib. |
| Ontario | 125,784 | 70,303 | 58,602 | 22,902 | Hon. M. Starr. | Oshawa. | P.C. |
| Ottawa E | 51,828 | 31,132 | 25,591 | 12,043 | J.-T. Richard | Ottawa | Lib. |
| Ottawa | 67, 131 | 38,934 | 31, 169 | 18,634 | Hon. G. J. McIlraith... | Ottawa | Lib. |
| Oxiord | 70,499 | 38,915 | 32,381 | 19,402 | W. B. Nesbitt.......... | Woodstock | P.C. |
| Parry Sound-Muskoka. | 55, 898 | 31,710 | 26,109 | 12,132 | G. H. Aiken. | Gravenhur |  |
| Peel | 111,575 | 65,035 | 53,517 | 28,009 | B. S. Beer. | Brampton | Lib. |
| Perth | 55,816 | 32,760 | 27,028 | 15,328 | Hon. J. W. Monteith | Stratford. | P.C. |
| Peterboroug | 67,969 | 38,434 | 33,334 | 11,909 | F. F. Stenson. | Peterborough |  |
| Port Arthur | 87,977 | 43,314 | 35,828 | 16,141 | D. M. Fisher. | Ottawa. | N.B.P. |
| Prince Edward-Lennox. | 37,758 | 21,051 | 17,532 | 8,869 | A. D. Alkenbr | Napanee | P.C. |
| Renfrew North | 55,616 | 26,368 | 23,478 | 11,580 | J. M. Forgie. | Pembrok | Lib. |
| Renirew | 35,929 | 19,760 | 17,774 | 8,765 | J. J. Greene | Arnprior | Lib |
| Russell | 124,368 | 62,929 | 52,664 | 31,182 | P. Tardif. | Ottawa |  |
| Simcoe Ea | 58,773 | 30,591 | 25, 236 | 12,662 | P. B. Rynard | Orillia. | P.C. |
| Simcoe N | 46,377 | 26,764 | 22,301 | 10,157 | H. E. Smitr. | Barrie | P.C. |
| Stormont | 57,867 | 30,739 | 24,869 | 13,285 | L. Lamoureux. | Cornwall | Lib. |
| Sudbury | 73,945 | 38, 808 | 32,632 | 15,794 | D. R. Mitchell | Sudbury |  |
| Timiskaming | 50,654 | 26,290 | 21,800 | 7,356 | A. Peters. | New Liskeard | N.D.P. |
| Timmins | 48,956 | 25,067 | 19,967 | 8,452 | M. W. Martin | Timmins | N.D.P. |
| Victoria | 48,789 | 28,798 | 23,223 | 10,538 | C. Lamb | Lindsay | P.C. |
| Waterloo No | 115,579 | 66,651 | 51,036 | 22,007 | O. W. Weichel | Elmira. | P.C. |
| Waterloo S | 61,175 | 34,875 | 28,270 | 11,479 | G. Chaplin | Galt | P.C. |
| Welland. | 86,731 | 47,181 | 36,408 | 19,879 | W. H. McMul | Thorold | Lib. |
| Wellington-Huron | 32,638 | 18,440 | 15,419 | 8,391 | W. M. Howe. . | Arthur. | P.C. |
| Wellington South | 59,150 | 33,436 | 28, 822 | 11,350 | A. D. Hales. | Guelph | P.C. |
| Wentworth. | 99,940 | 54,814 | 44,612 | 18,589 | J. B. Morison. | Hamilton | Lib. |
| York Cen | 190, 405 | 106,741 | 83,394 | 41,485 | J. E. Walker | Downsvie | Lib. |
| York East | 89,709 | 59,809 | 47,660 | 21,038 | S. Otro. | Toronto | Lib. |
| York-Hum | 90,618 | 55, 860 | 44,552 | 20,188 | R. B. Cowan. | Toronto | Lib. |
| York North | 100,874 | 56,201 | 45,382 | 21,668 | J. H. Addison | King | Lib. |
| York-Scarboroug | 267,252 | 162,950 | 133,145 | 63,049 | M. J. Moreau. | Scarborou | Lib. |
| York South | 114,867 | 62,892 | 48,520 | 21,042 | M. Gelber. | Toronto. | Lib. |
| York West. | 162,604 | 98,473 | 81,136 | 41,480 | L. P. Kelly | Toront | Lib. |
| City of Toronto- |  |  |  |  |  |  |  |
| Broadview. | 56,982 | 29,775 | 21,605 | 8,743 | D. G. Hain | Toronto. |  |
| Danforth | 88,988 <br> 64,520 | 52,116 26,604 | 41,019 20,366 | 14,903 | R. Scotr | Scarborough | N.D.P. |
| Eglinton. | 70,470 | 49,709 | 41,694 | 22,215 | Hon. M. Sharp. | Ottawa |  |
| Greenwood | 58,548 | 31,243 | 24,305 | 9,421 | F. A. Brewin. | Toronto | N.D.P. |
| High Park. | 60,630 | 32,232 | 25,429 | 13,034 | A. J. P. Came | oro | Lib. |

1.-Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Flected at the Twenty-Sixth General Election, Apr. 8, 1963
-continued.

| Province and Electoral District | $\begin{gathered} \text { Popu- } \\ \text { lation, } \\ \text { Census } \\ 1961 \end{gathered}$ | Voters on | Total Votes Polled | Votes Polled by Member | Name of Member | P.O. Address | Party Affiliation |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Ontario-conclud | No. | No. | No. | No. |  |  |  |
| City of Toronto-concl. |  |  |  |  |  |  |  |
| Parkdale..... | 59,145 | 34,078 | 25, 052 | 12,694 | S. Haidasz | Toronto. | Lib. |
| Rosedale. | 56,015 | 31,442 | 23,711 | 12,860 | D. S. Macdonald | Toronto |  |
| St. Paul's | 53,155 | 38, 323 | 28, 296 | 15,891 | I. G. Wahn. | Toronto | Lib. |
| Spadina | 83,424 | 37,793 | 27,592 | 14,850 | S. P. R yan | Toronto. | Lib. |
| Trinity.. | 64,902 | 26,533 | 19,940 | 10,595 | Hon. P. T. Hellyer.. | Ottawa | Lib. |
| Manitoba- <br> (14 members) |  |  |  |  |  |  |  |
| Brandon-Souris. | 65, 036 | 37,337 | 30,067 | 18,100 | Hon. W. G. Dinsdale. . | Brandon. | P.C. |
| Churchill. | 54,952 | 29,478 | 22,099 | 11,707 | R. Simpson... | Flin Flon |  |
| Dauphin | 40,179 | 22, 254 | 17,646 19,468 | 7,541 | R. E. Forres. | Dauphin <br> Roland. | P.C. |
| Marquette | 47,865 | 25,254 | 21,549 | 11,729 | J. N. Mandziuk. | Oakburn. | P. |
| Portage-Neepawa | 57,958 | 31,913 | 24,892 | 12,532 | S. J. Enns. | Portage la Prairie | P. |
| Provencher | 40,314 | 20,925 | 14,671 | 6,729 | W. H. Jorgenson | Morris. | P.C. |
| St. Bonif | 76,524 | 42,395 | 33,479 | 13,547 | Hon. R.-J. Tellet | St. Boniface | Lib |
| Selkirk | 50,320 | 26,999 | 20,043 | 10,096 | E. Stefanson. | Gimli | P. |
| Springfield | 48,343 | 26,331 | 20,198 | 9,552 | J. B. Slogan | Selkirk |  |
| Winnipeg North | 116,266 | 65,992 | 51, 106 | 18,512 | D. Orlikow | Winnipeg | N.D.P. |
| Winnipeg North Centre | 78,615 | 42,432 | 29,785 | 13,619 | S. H. Knowles | Winnipeg | N.D.P. |
| Winnipeg South....... | 113,629 | 68,016 | 56,463 | 24,467 | Margaret Konantz. | Winnipeg |  |
| Winnipeg South Centre. | 85,288 | 51,426 | 40, 404 | 17,092 | Hon. G. Churchill. | Winnipeg | P.C. |
| Saskatchewan- <br> (17 members) |  |  |  |  |  |  |  |
| Assiniboia... | 45,553 | 24,032 | 21,033 | 9,393 | L. Watson. | Avonlea. | P.C. |
| Humboldt-M | 48,243 | 25,779 | 21,304 | 12,010 | R. R. Rapp | Spalding | P.C |
| Kindersley | 47,960 | 24,631 | 21,779 | 9,944 | R. W. Cantelon | Unity. |  |
| Mackenzie | 44,479 | 23,627 | 17,617 | 10,010 | S. J. Korchinski | Rama. | P.C. |
| Meadow L | 37,937 | 18,344 | 13,927 | 7,819 | A. C. Cadieu. | Spiritwood | P.C. |
| Melville. | 40,255 | 22,815 | 19,497 | 9,412 | J. N. Ormiston | Cupar. |  |
| Moose Jaw-Lake Centre | 81,960 | 45, 927 | 38,454 | 20,958 | J. E. Pascoe. | Moose Jaw |  |
| Moose Mountain. | 44,404 | 23,313 | 20,122 | 9,949 | R. R. Southam. | Gainsboroug | P.C |
| Prince Albert. | 58,493 | 31,782 | 25,066 | 17,824 | Rt. Hon. J. G. Diefentaker* | Ottawa, Ont. | P.C. |
| Qu'Appelle. | 39,362 | 21,138 | 17,829 | 10,690 | Hon. A. Hamilon...... | Manotick, On | P. |
| Regina City | 89,293 | 50,600 | 42,662 | 19,605 | K. H. More. | Regina. |  |
| Rosetown-Big | 47, 208 | 25, 237 | 21,717 | 11,984 | C. O. Cooper. |  |  |
| Rosthern. | 46,954 | 23,657 | 18,895 | 11,351 | E. Nasserden | Saskatoon | $\xrightarrow{\text { P.C. }}$ |
| Saskatoon. | 95,575 | 58,154 | 49,469 | 26,237 | H. F. Jones. | Saskatoo | P.C. |
| Swift Current-Maple Creek | 56,528 | 31,230 | 26,512 | 12,963 | J. McIntosh | Swift Current | P.C. |
| The Battlefords | 51,613 | 26,725 | 20,890 | 12,108 | A. R. Horner. | Blaine La | P.C |
| Yorkton. | 49,364 | 28,560 | 23, 200 | 12,443 | G. D. Clancy.......... | Yorkton. | P.C. |
| Alberta- <br> ( 17 members) |  |  |  |  |  |  |  |
| Acadia. | 47,724 | ${ }_{28,223}$ | 20, 233 | 12,674 | F. J. Biganer. | Westlock.. | P.C. |
| Battle River-Camrose. | 58,655 | 31,255 | 25,689 | 15,565 | C. S. Smallwood | Irma | P.C |
| Bow River. | 62,806 | 31,912 | 25,112 | 11,461 | E. M. Woolliams | Calgary |  |
| Calgary North | 134,783 | 72,693 | 57,038 | 21,966 | Hon. D. S. Harkness.. | Calgary | P.C |
| Calgary South | 124,248 | 69,807 | 54, 174 | 21,619 | Hon. H. W. Hays...... | Ottawa, Ont | Lib |
| Edmonton East | 82,246 | 44,443 | 32,784 | 13,582 | W. Skore yko. | Edmonton |  |
| Edmonton-Strathcona. | 121,124 | 66,269 | 53,646 | 18,880 | T. J. Nugent..... |  |  |
| Edmonton West | 150,257 | 79,781 | 63, 204 | 26,578 14,776 | Hon. M. Lambert |  | P.C |
| Jasper-Edson. | 70,088 | 35,923 <br> 32 | ${ }_{26,647}^{26,405}$ | 14,776 11,475 | D. R. Gundlock | Warner. | P.C. |
| Macleod. | 50,966 | 25,928 | 21, 674 | 9,785 | L. E. Kindt. | Nanton | P.C. |
| Medicine Ha | 63,450 | 32,796 | 27,043 | 11, 080 | H. A. Orson.... | Medicine Hat | S.C. |
| Peace Rive | 75,811 | 39,275 | 27,666 | 16,111 | G. W. Bald win. | Peace River | ${ }_{\text {P. }}^{\text {P.C. }}$ |
| Red Deer. | 63,205 | 33,530 | 27, 194 | 12,182 | R. N. Thompson* | Red Dee |  |
| Vegreville. | 42,798 | 23,416 | 19,139 | 12,859 | F. J. W. Fane. | Vegreville | P.C. |
| Wetaskiwin. | 55,424 | 28,435 | 21,973 | 11,601 | H. A. Moore. | Wetaskiw | P.C. |
| British Columbia- <br> (22 members) |  |  |  |  |  |  |  |
| Burnaby-Coquitlam... | 90,941 | 49,944 | 41,289 | 19,067 16,578 | T. C. Wouglas* | Burnaby | N.D.P. |
| Burnaby-Richmond. | 96,835 | 52,520 | 43,758 | 16,578 |  | Burnaby |  |

1.-Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-Sixth General Election, Apr. 8, 1963
-concluded.

| Province and Electoral District | Population, Census 1961 | Voters on | Total Votes Polled | Votes Polled by Member | Name of Member | P.O. Address | Party Affiliation |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| British Columbiaconcluded | No. | No. | No. | No. |  |  |  |
| Cariboo........... | 82,173 | 43.073 | 30,805 | 9,335 | B. R. Leboe. | Prince George. | S.C. |
| Coast-Capilano | 113,734 | ${ }^{65.669}$ | 54,155 | 27, 177 | J. Davis. | West Vancouver. . |  |
| Comox-Alberni | 71.886 | 39.303 | 31,399 | 13,449 | T. S. Barnett. | Alberni. | N.D.P. |
| Esquimalt-Saani | 74,979 | 44.514 | 36.968 | 13,772 | G. L. Chatterton | Royal Oak. |  |
| Fraser Valley. | 88,518 | 45.929 | 38,444 | 11,500 | A. B. Patterson. | Abbotsford. | S.C |
| Kamloops | 73.446 | 37,988 | 29,433 | 8,604 | C. J. M. Wmlotghb | Kamloops. | P.C |
| Kootenay East. | 41,449 | 22,164 | 18.438 | 6,165 | J. A. B Yrne.. | Kimberley. |  |
| Kootenay West. ....... Nanaimo-Cowichan- | 57,136 | 29,939 | 23,046 | 8,595 | H. W. Herridge | Nakusp..... | N.D.P. |
| The Islands..... | 59.786 | 34.517 | 27,969 | 12.280 | C. Cameron. | Lantzville. | N.D.P. |
| New Westminster. <br> Okanagan Boundary | 142,803 66,180 | 79,027 | 64,220 | 23.609 | B. Mather. | Ladner | N.D.P. |
| Okangan-Revelstoke.. | 36,009 | 19,545 | 16,572 | 10,031 5.800 | S. A. Fleming | Vernon |  |
| Skeena.. | 58,740 | 26,572 | 20,382 | 10,743 | F. Howard | Kitimat | N.D.P. |
| Vancouver-Burrard | 60,347 | 41,081 | 32.204 | 12,048 | S. R. Basford | Vancouver | Lib. |
| Vancouver Centre. | 44.920 | 34,541 | 24,359 | 9,472 | Hon. J. R. Nicholson. | Ottawa, Ont |  |
| Vancouver East. | 59,496 | 31,920 | 23,594 | 12,688 | H. E. Winch. | Vancouver. | N.D.P. |
| Vancouver-Kingsway.. | 67,228 | 37,858 | 29,772 | 13,966 | A. A. Webster. | Vancouver | N.D.P. |
| Vancouver-Quadra. | 69,981 | 43,299 | 36,495 | 15,160 | G. Deachman. | Vancouver. | Lib. |
| Vancouver South. | 88.069 | 51,538 | 42,661 | 19.140 | Hon. A. Laing | Ottawa, On | Lib. |
| Victoria......... | 86,426 | 53,123 | 43,771 | 15,040 | D. W. Groos.. | Victoria. | Lib. |
| Yukon Territory- <br> (1 member) <br> Yukon. $\qquad$ | 14,628 | 6,878 | 6,051 | 2,969 | E. Nielsen. | Whitehorse. | P.C. |
| Northwest Territories- <br> ( 1 member) <br> Northwest Territories. | 14,895 | 11,856 | 8,663 | 4,814 | G. Rhéaume........... | Yellowknife. | P.C. |

## 2.-Voters on the Lists and Votes Polled at the Federal General Elections of 1958, 1962 and 1963

Note.-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. 66 ; 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 ; and those for 1949, 1953 and 1957 in the 1962 edition, p. 71.

| Province or Territory | Voters on the Lists |  |  | Votes Polled |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1958 | 1962 | 1963 | 1958 | 1962 | 1963 |
|  | No. | No. | No. | No. | No. | No. |
| Newfoundland. | 204,778 | 215,565 | 221,321 | 160,928 | 155, 263 | 152,175 |
| Prince Edward Island. | 54,200 | 56.542 | 57,029 | 69,3021 | 73.5091 | 69,4861 |
| Nova Scotia. | 390,196 | 398, 161 | 401,874 | $418.479{ }^{2}$ | $423.556^{2}$ | 419,352 ${ }^{2}$ |
| New Brunswick | 294,387 | 302,313 | 304,732 | 249,706 | 252,053 | 245,557 |
| Quebec. | 2,576,682 | 2,728,191 | 2,807,634 | 2,045,199 | 2,117,644 | 2,143,246 |
| Ontario. | 3,189,422 | 3,397,647 | 3, 455, 363 | 2,534.555 | 2,719,020 | 2,799,870 |
| Manitoba | 481.552 | 508,920 | 516,525 | 385, 648 | 393,023 | 401,870 |
| Saskatchewan | 488,139 | 502,495 | 505,551 | 399,949 | 426.426 | 419,973 |
| Alberta. | 608,820 | 680,253 | 700,920 | 452,977 | 505,752 | 552,164 |
| British Columbia | 830,237 | 891,686 | 921,074 | 629,982 | 691,930 | 740,229 |
| Yukon Territory ${ }^{3}$ | 6,071 | 6,762 | 6,878 | 5,469 | 5,978 | 8,051 |
| Northwest Territories ${ }^{4}$. | 6,716 | 11,790 | 11,856 | 4,945 | 8,502 | 8,663 |
| Totals | 9,131,200 | 9,700,325 | 9,910,757 | 7,357,139 | 7,772,656 | 7,958,636 |

[^368]
## Pages 76-77, Indemnities and Allowances

Effective Apr. 8, 1963, the sessional allowance of members of the Senate and House of Commons was increased from $\$ 8,000$ to $\$ 12,000$ per annum. In addition to actual moving and travelling expenses from his constituency to Ottawa for each session of Parliament and actual telecommunication expenses incurred while in Ottawa, the expense allowance was increased in the case of each member of the Senate from $\$ 2,000$ to $\$ 3,000$ per annum and in the case of each member of the House of Commons from $\$ 2,000$ to $\$ 6,000$, to be paid quarterly. Additional annual allowances of $\$ 4,000$ (beyond the above-noted sessional allowance) are provided to each leader of a party having a recognized membership of 12 or more persons in the House of Commons, other than the Prime Minister and the member occupying the recognized position of 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. A motor vehicle allowance (previously provided by Appropriation Act No. 5,1931 ) was authorized by this amendment to the Senate and House of Commons Act to the amount of $\$ 2,000$ to be paid to each Minister of the Crown and to the recognized Leader of the Opposition in the House of Commons, and of $\$ 1,000$ to be paid to the Speaker of the Senate and to the Speaker of the House of Commons.

Pages 81-91
Three provincial elections took place between Apr. 30 and Nov. 15, 1963:-

## Page 83

A general election took place in Nova Scotia on Oct. 8, 1963 as a result of which the Party standing in the Legislature was: 39 Progressive Conservative and 4 Liberal. There was no change in the Ministry; to the office of the "Provincial Secretary, Minister of Public Welfare and Minister in charge of Emergency Measures Organization" was added "and Minister under the Water Act".

| Page 86 |  |  |
| :---: | :---: | :---: |
| A general election took place in Ontario on Sept. 25, 1963 as a result of which the Party standing in the Legislature was: 77 Progressive Conservative, 24 Liberal and 7 New Democratic Party. The Ministry as at Nov. 8, 1963 was as follows:- |  |  |
|  |  |  |
|  |  |  |
|  |  | Date of Present |
| Office | Name |  |
| Premier and President of the Council | Hon. John P. Robarts. | Nov. 8, 1961 |
| Minister of Lands and Forests. | Hon. A. Kelso Roberts. | Oct. 25, 1962 |
| Minister of Public Welfare | Hon. Louts P. Ceclee | Aug. 17, 1955 |
| Treasurer | Hon. James N. Allan | Oct. 16, 1963 |
| Minister of Public Works | Hon. T. Ray Connell | Dec. 22, 1958 |
| Minister of Health | Hon. Matthew B. Dymond | Dec. 22, 1958 |
|  | Hon. J. Wilfrid Spooner. | Oct. 25, 1962 |
| Attorney General and Minister in charge of the <br> Department of Insurance. <br> Hon. Frederick M. Cass. $\qquad$ Oct. 25, 1962 |  |  |
| Provincial Secretary and Minister of Citizenship. | Hon. John Yaremko. | May 26, 1980 |
| Minister of Mines. | Hon. George C. Wardrope. | Nov. 8, 1961 |
| Minister of Labour | Hon. H. Leblie Rowntree. | Oct. 25, 1962 |
| Minister of Reform Institutions. | Hon. Allan Grossman | Aug. 14, 1963 |
| Minister of Agriculture | Hon. Whllam A. Stewart | Nov. 8, 1961 |
| Minister of Highways. | Hon. Charles S. MacNaughton | Oct. 25, 1962 |
| Minister of Transport. | Hon. Irwin Haskett. | Aug. 14, 1963 |
| Minister of Travel and Publicity | Hon. James A. C. Auld | Aug. 14, 1963 |
| Minister of Education | Hon. William G. Davis. | Oct. 25, 1962 |
| Minister of Energy Resources. | Hon. John R. Simonett. | Oct. 16, 1963 |
| Minister of Economics and Development.............. | Hon. Stanley J. Randall. | Nov. 8, 1963 |

## Page 91

A general election took place in British Columbia on Sept. 30, 1963, as a result of which the Party standing in the Legislature was: 33 Social Credit, 13 New Democratic Party, 5 Liberal and 1 disputed. There was no change in the Ministry.

## Page 98

One Federal Royal Commission was established during the period Apr. 30 to Nov. 15, 1963 as follows:-

Nature of Commission
To inquire into and report upon the existing state of bilingualism and biculturalism in Canada.

Co-chairmen*

André Laurendeau Davidson Dunton

* See p. 1171 for other appointments to Commission.


## Pages 104-122

Organizational changes were made in several government departments and agencies during the period Apr. 30 to Nov. 15, 1963, including the transfer of certain duties from one department to another and the transfer of certain Ministerial responsibilities. In particular, a Department of Industry was established taking over, in addition to its new functions, some of the duties of the Department of Trade and Commerce (see pp. 677 and 1173), and an Economic Council was established (see pp. 1168 and 1173). The Chart inserted between pp. 104 and 105 shows the organization of the Government of Canada as at Nov. 15, 1963 and therefore includes all transfers of Ministerial responsibilities taking place between Apr. 30 and that date.

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[^0]:    * Revised by the Geographical Branch, Department of Mines and Technical Surveys.

[^1]:    ＊United Nations Statistical Yearbook， 1961.
    $\dagger$ United Nations Population and Vital Statistics Report，Oct．1， 1962.

[^2]:    *The Federal Government's oceanographic research program is outlined in Chapter XI on Mines and Minerals, Section 2, Subsection 1.

[^3]:    For footnotes, see end of table.

[^4]:    ${ }^{1}$ The summit of the Cypress Hills, with an elevation of 4,810 feet, is in Alberta. ${ }^{2}$ Part of the AlbertaBritish Columbia boundary. Yukon-Alaska boundary.
    ${ }^{3}$ Part of the British Columbia-Alaska boundary. ${ }^{5}$ Approximate.

[^5]:    * A special article covering the history and current activities of the Geological Survey of Canada appears in the 1960 Year Book, pp. 13-19, and is available from the Director in reprint form. A brief outline of the functions of the Survey is given in the Mines and Minerals Chapter of this volume (see Index).

[^6]:    ${ }^{1}$ Administered by the Northern Administration Branch, Department of Northern Affairs and National Resources.

[^7]:    * Excluded are the 16,000 sq. miles of the Mingan Reserve, no longer operated by the Department of Game and Fisheries as a reserve.

[^8]:    * Prepared in the Information and Historical Division, National Capital Commission, Ottawa.

[^9]:    * A series of special articles relating to the wildlife resources of Canada has been carried in previous editions of the Year Book. See the list of special articles in Chapter XXVI, Part II, under the heading of "Fauna and Flora".

[^10]:    * Additional information on provincial conservation of fisheries resources is given in the Fisheries Chapter, together with data relating to the work of the Fisheries Research Board of Canada and to international fisheries conservation (see Index).

[^11]:    * Prepared by the Meteorological Branch of the Department of Transport, Toronto. A comprehensive study on The Climate of Canada, also prepared by the Meteorological Branch, was carried in the 1959 Year Book, pp. 23-51. Supplementing that textual material, detailed tabulations of climatic factors for 45 individual meteorological stations across the country were carried in the 1960 Year Book, pp. 33-77. A reprint is available from the above source giving the complete textual and tabular data, A very brief outline of the climate of Canada by region is given in the 1962 edition, pp. 39-40,

[^12]:    ${ }^{1}$ Total rainfall and one-tenth of the total snowfall.

[^13]:    ${ }^{1}$ Total rainfall and one-tenth of the total snowfall.

[^14]:    ${ }^{1}$ Total rainfall and one-tenth of the total snowfall. $\quad{ }^{2}$ No appreciable period free from frost.

[^15]:    ${ }^{*}$ Prepared by the Meteorological Branch, Department of Transport, Toronto.

[^16]:    * Prepared by Dr. G. S. Garland, Physics Department, University of Alberta, Edmonton.

[^17]:    * Except where otherwise indicated, the information in this Chapter has been brought up to the date of Apr. 30, 1963. 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 XXVI (see Index).

[^18]:    *See A Consolidation of The British North America Acts 1867 to 1952, prepared by Elmer A. Driedger (Queen's Printer, Ottaws, 1956, 50 cents).

[^19]:    * Also available in reprint form from the Dominion Bureau of Statistics, Ottawa, 25 cents.

[^20]:    * Senator the Hon. Gideon Decker Robertson held the portfolio of Minister of Labour for the periods Nov. 7, 1918 to Dec. 29, 1921 and Aug. 7, 1930 to Feb. 2, 1932; Senator the Hon. Malcolm Wallace McCutcheon served as Minister of Trade and Commerce from Feb. 12 to Apr. 22, 1963.

[^21]:    ${ }^{1}$ The ordinary legal limit of duration for each Parliament is five years. $\quad{ }^{2}$ 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, both days inclusive (B.N.A. Act, Sect. 50). $\quad{ }^{3}$ Date of general election. ${ }^{4}$ Writs return${ }_{7}$ able. ${ }^{5}$ Dissolution of Parliament. ${ }^{6}$ Includes long adjournment from Nov. 29, 1956 to Jan. 8, 1957. ${ }^{7}$ Includes long adjournment from July 13 to Sept. 7, 1961. want of confidence motion.

[^22]:    * More detailed information concerning provincial judiciaries is given in the 1954 Year Book, pp. 48-55.

[^23]:    * The information given in Subsections 1 to 10 of this Section is brought up to Apr. 30, 1963. Any important changes occurring between that date and the time of going to press will be found in an Appendix to this volume.

[^24]:    ${ }^{*} 63$ members, following adjustment of constituencies immediately preceding the General Election of June 17 1963.

[^25]:    ${ }^{1}$ At a General Election held June 17, 1963, the Social Credit Party was returned to power and all members of the Executive Council were re-elected. Party standing: 60 Social Credit, 1 Liberal, 1 Coalition and 1 Independent.

[^26]:    * Further information on officials of various Federal Government departments serving the Yukon Territory may be obtained from the Director, Northern Administration Branch, Department of Northern Affairs and National Resources, Ottawa.

[^27]:    * Prepared in the Public Finance and Transportation Division, Dominion Bureau of Statistics,

[^28]:    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 10 cities, 89 towns, 158 villages, 31 municipal districts and 17 counties. The latter administer schools as well as municipal services. Municipal government for the 49 improvement districts and two 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, four

[^29]:    ${ }^{1}$ Municipalities grouped according to their official nomenclature, which is roughly indicative of size and nature (see footnote 10).

    2 Municipalities grouped under the classification devised by the Dominion-Provincial Conferences on Municipal Statistics, designed to bring municipalities into comparable groups for statistical presentation. ${ }^{2}$ Census 1961 figures. 4 Includes 62 local improvement districts and 10 commissions. ${ }^{5}$ The Montreal Metropolitan Corporation. ${ }^{6}$ The Municipality of Metropolitan Toronto. ${ }^{7}{ }^{7}$ The Metropolitan Corporation of Greater Winnipeg.

    8 Designated by the province as towns (39), rural districts (5) and local improvement districts (3); all operate under the same Act. ${ }^{9}$ Classified by the province as community councils. ${ }^{10}$ Rural municipalities are designated by different names in the different provinces. ${ }^{11}$ Includes 20 improvement districts. ${ }^{12}$ Includes 5 units of self-government known as suburban municipalities; excludes the unincorporated local government districts. ${ }^{13}$ Excludes the 12 unincorporated local improvement districts. ${ }^{14}$ Includes 20 county municipalities; excludes the 49 unincorporated improvement districts and 2 special areas.
    ${ }^{15}$ Includes the Inter-Urban Corporation of Ile Jesus, formerly Laval County.
    ${ }^{16}$ Includes municipalities shown wholly or partly in metropolitan areas by the 1961 Census, with subsequent revisions to take care of annexations, etc. Included in urban are the Montreal Metropolitan Corporation, the Municipality of Metropolitan Toronto and the Metropolitan Corporation of Greater Winnipeg. the province as suburban or semi-urban.

[^30]:    * Prepared under the direction of H. R. Balls, Comptroller of the Treasury, Department of Finance, Ottawa.

[^31]:    * On July 1, 1963, the Organization was given the responsibility of directing and administering the Civil Defence College at Arnprior, Ont. (See Part III of Chapter XXV on Defence of Canada.)

[^32]:    * 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. Though not included in the Schedules to the Financial Administration Act, certain provisions of the Act apply to the Northern Ontario Pipe Line Crown Corporation, set up on June 7, 1956 to oversee the building of a cross-country natural gas pipeline. 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 National Productivity Council set up under the National Productivity Act (assented to Dec. 20, 1960) and the Atlantio Development Board set up under the Atlantic Development Board Act (assented to Dec. 20, 1962).

[^33]:    - Compiled from information supplied by the respective Departments.

[^34]:    ${ }^{1}$ Provincial totals include employees undistributed as to sex; total for Canada 1,908. include employees undistributed as to ser; total for Canada 1,381 .

[^35]:    * Staffed by employees of the National Research Council.
    $\dagger$ Staffed by employees of the Defence Research Board and Defence Construction (1951) Limited.
    $\ddagger$ Prepared by the Department of External Affairs, Ottawa.

[^36]:    - Dual accreditation; representative not resident in the country.

[^37]:    *The terms of the Treaty and the organization of the Council and subordinate committees are dealt with in the 1954 Year Book at pp. 113-115. 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.

[^38]:    ${ }^{*}$ An outline of the growth of population in Canada 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.

[^39]:    ${ }^{1}$ 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. $\quad 2$ Includes 485 members of the Royal Canadian Navy recorded separately in 1921.

[^40]:    ${ }^{1}$ Incorporated after June 1, 1956. the town limits, numbering 435.

[^41]:    © Kemptville became a town on Jan. 1, 1963.
    ${ }^{2}$ Includes residents of the Nova Scotia Sanatorium located outside ${ }^{3}$ Amalgamation of the towns of L'Abord à Plouffe, St. Martin and rural ${ }_{4}^{4}$ Brockville became a city on Apr. 1, $1962 . \quad{ }^{5}$ Eastview became

[^42]:    * 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 stairway inside. The entrance must not be through another person's living quarters.

[^43]:    ${ }^{1}$ Exclusive of the Yukon and Northwest Territories.

[^44]:    * 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 together in the same dwelling. Adopted children and stepchildren are counted as own children and, in fact, a family may comprise a man or woman living with a guardianship child or ward under 21 years of age.

[^45]:    ${ }^{1}$ Final figures used where available and registrations substituted for the remaining period.
    ${ }^{2}$ Mainly emigration.

[^46]:    ${ }^{1}$ With 100,000 or more population in the city proper at the 1961 Census. $\quad{ }^{2}$ Areas as of the 1961 Census.

[^47]:    * Revised in the Information Division, Department of Citizenship and Immigration, Ottawa.

[^48]:    ${ }^{1}$ Includes resident boarders attending Indian day schools, numbering 324. of school age for whom full information is not available.

[^49]:    * Prepared in the Editorial and Information Division, Department of Northern Affairs and National Resources, Ottawa.

[^50]:    For footnotes, see end of table, p. 197.

[^51]:    * Sections 1 and 2 of this Part were revised under the direction of the Deputy Minister, Department of Citizenship and Immigration, Ottawa.

[^52]:    * Prepared in the Citizenship Registration Branch under the direction of the Deputy Minister, Department of Citizenship and Immigration, Ottawa.

[^53]:    ${ }^{1}$ Includes persons who reported themselves as stateless.

[^54]:    ${ }^{1}$ Canadian-born persons who lost their citizenship by marriage; this applies to females only.

[^55]:    ${ }^{1}$ Mainly children over 14 years of age.

[^56]:    * Revised in the Vital Statistics Section, Health and Welfare Division, Dominion Bureau of Statistics.

[^57]:    ${ }^{1}$ Excludes Newfoundland for which data are not available.

[^58]:    ${ }^{1}$ 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.

    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.

    * 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 marita! status of the mother was reported as "single" at the time of birth or registration.

[^59]:    * A crude rate is one based on the total population.

[^60]:    * Although there are at present some provincial differences in the requirements for compulsory registration of stillbirths (i.e., with respect to minimum gestational age-limits and specific criteria of life), stillbirths, as referred to here, may be summarized as including "foetuses of 28 or more weeks of ges tation, which did not show any sign of life'".

[^61]:    * For international comparisons, see Section 7, pp. 256-257.
    $\dagger$ A crude rate is one based on the total population.

[^62]:    ${ }^{1}$ Excludes the Yukon and Northwest Territories.

[^63]:    * INCLUDES: DISEASES OF HEART (INCL. RHEUMATIC FEVER) AND ARTERIES, INTRACRANIAL LESIONS, CHRONIC NEPHRITIS.

[^64]:    ${ }^{1}$ Many rates have been revised since the publication of the 1962 Year Book; see headnote to Table 1.

[^65]:    *For international comparisons, see Section 7, pp. 256-257.

[^66]:    * For international comparisons, see Section 7, pp. 256-257.

[^67]:    ${ }^{1}$ Includes one in the Northwest Territories. $\quad{ }^{2}$ Includes two in the Northwest Territories.
    ${ }^{2}$ Includes 24 in Yukon Territory.

    - Includes 14 in Yukon Territory and five in the Northwest Territories.

[^68]:    *Except where otherwise indicated, this Chapter was prepared by the Research and Statistics Division of the Department of National Health and Welfare, Ottawa.

[^69]:    ${ }^{1}$ As set out in the General Health Grant Rules. $\quad{ }^{2}$ Merged with Medical Rehabilitation Grant, Apr. 1,
    1960. ${ }^{3}$ Expenditure exceeds 100 p.c. of amount available through revote of funds unused in previous years.

    - Absorbed into General Public Health Grant, Apr. 1, 1960.
    absorbed into General Public Health Grant, Apr. 1, 1960.
    ${ }^{5}$ Lapsed in 1953.
    $-{ }^{7}$ Ampounts for 1960-62 only; see footnotes ${ }^{2}$ and ${ }^{7}$.
    Children Grant, Apr. 1, 1960. ${ }^{8}$ Introduced in 1953

[^70]:    ${ }^{1}$ Advances only; a final adjustment of $\$ 983,006$ was withheld. $\quad{ }^{2}$ See footnote ${ }^{1}$. $\quad{ }^{3}$ Amount of holdback not available.

[^71]:    ${ }^{1}$ Per 1,000 total population; based on population estimated as at June 1, 1960. tion; based on annual average number of insured persons under provincial plans, 1960.
    ${ }^{2}$ Per 1,000 insured popula-

[^72]:    ${ }^{1}$ Includes other revenue fund expense.
    ${ }^{2}$ Based on patient-days during year for adults and children.
    ${ }^{2}$ Based on population estimated as at June 1, 1960.

[^73]:    * Prepared by Dr. J. Auer, Secretary, Medical Research Council, Ottawa.

[^74]:    * Prepared in the Institutions Section of the Health and Welfare Division, Dominion Bureau of Statistics. Detailed information will be found in the following DBS publications: Hospital Statistics, Vols. I to VI (Catalogue Nos. 83-210 to 83-215); Mental Health Statistics (Catalogue No. 83-204) and Financial Supplement (No. 83-205) Tuberculosis Statistics (No. 83-206) and Financial Supplement (No. 83-207); and List of Canadian Hospitals and Related Institutions and Facilities (No. 83-201).

[^75]:    ${ }^{1}$ Based on estimated population as at June 1， 1962.

[^76]:    ${ }^{1}$ Adults, children and newborn.
    ${ }^{2}$ First admissions and re-admissions.
    ${ }^{3}$ Mental hospitals only; does not include psychiatric or mental units in other hospitals. ${ }_{4}$ Tuberculo tuberculosis units in other hospitals. $\quad 5$ Includes other types not specified.

[^77]:    ${ }^{1}$ Subject to later adjustments by Provincial Plan.

[^78]:    ${ }^{1}$ Subject to later adjustments by Provincial Plan.

[^79]:    ${ }^{1}$ Subject to later adjustments by Provincial Plan.

[^80]:    ${ }^{1}$ Subject to later adjustments by Provincial Plan.

[^81]:    ＊Prepared in the Public Health Section，Health and Welfare Division，Dominion Bureau of Statistics．

[^82]:    ${ }^{1}$ Excludes the Northwest Territories.
    ${ }^{2}$ Includes venereal diseases only for Northwest Territories. ${ }^{3}$ Not reportable. $\quad{ }^{4}$ Includes other cases and cases where type not specified. ${ }_{5}$ Less than 0.05 per 100,000 population.

[^83]:    ${ }^{1}$ Not reportable
    100,000 population.
    ${ }^{2}$ Includes other cases and cases where type not specified.
    ${ }^{3}$ Less than 0.05 per

[^84]:    ${ }^{1}$ Based on gross payment for March.

[^85]:    ${ }^{1}$ Applied to repayment of loan from Consolidated Revenue Fund, leaving a net loan of $\$ 17,282,796 . \quad{ }^{2}$ Of this sum, $\$ 17,282,796$ was applied to repayment of loan from Consolidated Revenue Fund, leaving a balance in the Old Age Security Fund, Mar. 31, 1962, of $\$ 1,563,639$.

    Persons in receipt of old age assistance (see p. 295) who reach age 70 are automatically transferred to old age security. Others make application to the regional offices. Recipients of old age security who are in need may receive supplementary aid under general assistance programs in the provinces. Where the amount of aid is determined through an individual assessment of need, which takes the recipient's requirements and resources into consideration, the Federal Government may share in it under the Unemployment Assistance Act.

[^86]:    ${ }^{1}$ The increase in the maximum assistance rate from $\$ 55$ to $\$ 65$ a month was effective in these provinces from Apr. 1, 1962. ${ }^{2}$ The effective date for the increase from $\$ 55$ to $\$ 65$ a month in the maximum assistance rate was Feb. 1, 1962 in these jurisdictions but not all of them had made the adjustments by Mar. 31, $1962 . \quad{ }^{3}$ The effective date of the increase from $\$ 55$ to $\$ 65$ a month in the maximum assistance rate was July 1,1962 . ${ }^{\text {The }}$ average monthly assistance was $\$ 61.09$ for June 1962 , the first month for which an average based on the maximum of $\$ 65$ a month was computed.

[^87]:    ${ }^{1}$ The increase in the maximum rate of a!lowance from $\$ 55$ to $\$ 65$ a month was effective in these provinces from Apr. 1, 1962. $\quad{ }_{2}$ The effective date for the increase from $\$ 55$ to $\$ 65$ a month in the maximum rate of allowance was Feb. 1, 1962 in these jurisdictions but not all of them had made the adjustments by Mar. 31, $1962 .{ }^{3}$ The effective date of the increase from $\$ 55$ to $\$ 65$ a month in the maximum rate of allowance was July 1, 1962. $\quad$ The a verage monthly allowance was $\$ 64.04$ for June 1962 , the first month for which an average based on the maximum of $\$ 65$ a month was computed. $\quad 5$ Excluding Yukon Territory.

[^88]:    ${ }^{1}$ Includes dependants.
    ${ }^{2}$ Payment figures shown are for the months to which the claims made under the program relate and include amounts paid to the provinces by the Federal Government after the end of the fiscal year. ${ }^{3}$ Includes persons of a class formerly granted aid under a mothers' allowances program.
    ${ }^{4}$ Nine

[^89]:    ${ }^{1}$ Approximate.
    ${ }^{2}$ An additional 1,512 families with 4,466 children were assisted under Part III of the Public Welfare Act; cost of allowances for this group is included in total payments for all groups under Part III. ${ }^{2}$ Caseload transferred to social assistance; no separate figures are available. ${ }_{4}$ Figures for 1958-62 exclude British Columbia; figures for 1958 also exclude Newfoundland.

[^90]:    * Prepared by the Department of Veterans Affairs, Ottawa.

[^91]:    * A detailed study of this Act is given in the 1962 Year Book, pp. 282-283.

[^92]:    * A detailed outline of the Board's functions and responsibilities is given in the 1961 Year Book, p. 302.

[^93]:    * Prepared in the Education Division, Dominion Bureau of Statistics.

[^94]:    *The subject of vocational training is covered in detail in an article entitled "Recent Developments in Public Technical and Vocational Education in Canada" appearing in Chapter XVI on Labour (see Index).

[^95]:    ${ }^{1}$ Includes publicly controlled，private，and Indian schools．
    ${ }^{2}$ From kindergarten to and including Grade 8 in all provinces except Quebec；Grade 8 included with secondary grades in Quebec．

[^96]:    ${ }^{1}$ Fully qualified at the elementary level are teachers with junior matriculation and two or more years, or senior 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. garten and elementary grades only, and those instructing or supervising both elementary and secondary grades in rural schools with five or fewer classes. Teachers and principals in Ontario are classified as elementary according to the provincial Report of the Minister, 1961.
    ${ }_{3}$ Comprises teachers and principals instructing or supervising secondary grades only, and those instructing or supervising both elementary and secondary grades in urban centres and in rural schools with six or more classes. Teachers and principals in Ontario are classified as secondary according to the provincial Report of the Minister, 1961.

[^97]:    Note.-Figures to 1960-61 are for enrolment at Dec. 1 of the academic year indicated and comprise actual graduate enrolment reported and estimated figures for total enrolment based on data available from institutions representing about 98 p.c. of the total enrolment.

[^98]:    ${ }^{1}$ All theology enrolment included as undergraduate prior to 1962-63.

[^99]:    For footnotes, see end of table, p. 346.

[^100]:    ${ }^{4}$ Estimated. $\quad{ }^{2}$ Includes Bachelors of Letters and Social Science. ${ }^{3}$ Some institutions include Science degrees in Arts. ${ }_{4}$ Includes Bachelors of Accounting and Secretarial Science. ${ }^{5}$ Includes diplomas in Architecture from the School of Architecture of Montreal. ${ }^{6}$ Includes all diplomas and degrees except for Bachelors of Divinity. ${ }^{7}$ Includes M. Com., M.Ed., M.Paed., M.S.W., as well as M.A. In some institutions, 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.Sc. ${ }^{9}$ The "Licence" in the French language universities is the next degree in advance of the Bachelor.

[^101]:    - This subject is covered in detail in a special article entitled "Recent Developments in Public Technical and Vocational Education in Canada" appearing in Chapter XVI on Labour (see Index).

[^102]:    ${ }^{1}$ Excludes training of the unemployed.
    ${ }^{2}$ Excludes some 2,000 fee-paying students.
    ${ }^{8}$ Excludes training of the unemployed in Quebec and some 2,000 fee-paying students in British Columbia. ${ }^{2}$ In addition, there were 9,679 part-time students and 390 students taking correspondence courses. ${ }^{5}$ Excludes 10,169 parttime students and 37,679 students taking correspondence courses from private trade schools and business schools. ${ }^{6}$ Excludes some 18,000 part-time students.

[^103]:    ${ }^{1}$ Operated and assisted by federal and provincial departments and agencies.

[^104]:    * Prepared by R. A. Lay, Public Relations Office, National Research Council of Canada, Ottawa.

[^105]:    ${ }^{*}$ Prepared by Dr. W. B. Lewis, Vice-President, Research and Development, Atomic Energy of Canada Limited, Chalk River, Ont.

[^106]:    * Prepared (March 1963) by Dr. D. C. Rose of the National Research Council, Ottawa.

[^107]:    ${ }^{1}$ Includes planning and administering research-development and grants-in-aid of research. ship and fellowship programs.

[^108]:    * Except as otherwise credited, this Chapter has been revised in the Judicial Section, Health and Welfare Division, Dominion Bureau of Statistics.
    $\dagger$ Prepared by the Criminal Law Section, Department of Justice, Ottawa.

[^109]:    * Salmond on Jurisprudence, 7th Edition, p. 496.

[^110]:    ${ }^{1}$ 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.

[^111]:    * Prepared under the direction of A. J. MacLeod, Commissioner of Penitentiaries, Ottawa.
    $\dagger$ Prepared by T. G. Street, Chairman, National Parole Board, Ottawa.

[^112]:    * Prepared by the Census of Agriculture Section, Census Division, Dominion Bureau of Statistics. Summary statistics on which this material is based appear in Section 5 of this Chapter.

[^113]:    * See also p. 476.

[^114]:    * Prepared under the direction of S. C. Barry, Deputy Minister of Agriculture, Ottawa.

[^115]:    ${ }^{1}$ Repealed by the Farm Credit Act, proclaimed Oct. 5, 1959.

[^116]:    * This Act repealed the Agricultural Prices Support Act, 1944.

[^117]:    * Information supplied by the agricultural authorities of the various provinces.

[^118]:    * Except as otherwise credited, this Section was prepared under the direction of S. C, Barry, Deputy Minister, Department of Agriculture, Ottawa.

[^119]:    * Prepared in the Water Resources Branch, Department of Northern Affairs and National Resources, Ottawa.

[^120]:    * Revised by the Deputy Minister, Saskatchewan Department of Agriculture.

[^121]:    * Revised in the Deputy Minister's office, Alberta Department of Agriculture.

[^122]:    * Revised in the Agriculture Division, Dominion Bureau of Statistics.
    $\dagger$ Available from the Dominion Bureau of Statistics or the Queen's Printer, Ottawa.

[^123]:    * Information on the methods and concepts used to determine the contribution of agriculture to national income is available in DBS publication Handbook of Agricultural Statistics, Part II.

[^124]:    ${ }^{1}$ Gross value of farm production: does not represent cash income from sales.
    ${ }^{2}$ Not available at time of

[^125]:    ${ }^{1}$ Values for 1962 not available at time of going to press; see fontnote 2, Table 11.

[^126]:    ${ }^{1}$ Values for 1962 not available at time of going to press; see footnote 2, Table 11. ${ }^{2}$ Fewer than 500 acres.

[^127]:    ${ }^{1}$ Census. $\quad{ }^{2}$ Cows and heifers, two years old or over, kept for milk purposes.

[^128]:    ${ }^{1}$ Includes malted milk, cream powder, formula milks, whole milk powder of less than 26-p.c. fat, evaporated milk of 2 -p.c. fat, concentrated liquid milk and sterilized cream manufactured by fewer than three firms. ${ }^{2}$ Includes sugar of milk (lactose), condensed buttermilk, concentrated liquid skim milk and special formula skim milk products manufactured by fewer than three firms.

[^129]:    ${ }^{1}$ Includes Newfoundland for all manufactured dairy products.
    ${ }^{2}$ Includes, in addition to the items listed, malted milk, cream powder, partly skimmed evaporated milk, whole milk powder of less than 26 -p.c. fat, formula milks, evaporated milk of 2 -p.c. fat, and concentrated liquid milk.
    ${ }^{3}$ Includes milk by-product items not listed, i.e., condensed buttermilk, powdered buttermilk, sugar of milk, casein, powdered whey, special formula skim milk products and concentrated liquid skim milk. Since the quantities used for human consumption and livestock feeding cannot be separated, per capita figures include both.
    ${ }^{4}$ Includes ice cream mix in terms of milk.

[^130]:    ${ }^{1}$ Prior to 1960, acreages of peas in Prince Edward Island and New Brunswick are included with Nova Scotia; in 1960, 1961 and 1962, Prince Edward Island and Nova Scotia acreages of peas are included with New Brunswick. ${ }^{2}$ Acreages of beans, corn and peas in Manitoba are included with Alberta.

[^131]:    .$^{1}$ Includes Agricultural Stabilization Act payments of 28 cents per lb . in 1958, 21 cents per lb . in 1959, 23 cents per lb. in 1960, 22 cents per lb. in 1961 and 18 cents per lb. in 1962 on qualifying graded wool.

[^132]:    For footnotes, see end of table, p. 474.

[^133]:    ${ }^{1}$ 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. paste and purée. $\quad 4$ Exclusive of Newfoundland.
    ${ }^{3}$ Tomatoes canned, tomato juice, tomato pulp,
    ${ }^{5}$ Includes process cheese.
    ${ }^{6}$ Includes cream expressed as milk.

[^134]:    ${ }^{1}$ Includes field, vegetable, fruit and nursery crop land.

[^135]:    ${ }^{1}$ Operators not reporting age are excluded from 1951 figures.

[^136]:    ${ }^{1}$ 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. estimates.

[^137]:    ${ }^{1}$ Estimated totals, which are rounded to millions, include allowances for any missing data for countries shown and for other producing countries not shown
    ${ }_{2}$ Tentative unofficial production estimates.

[^138]:    * Sections of this Chapter that deal with forestry and the federal forestry program were revised in the Department of Forestry, Ottawa. Provincial forestry programs were prepared by the forestry officials of the respective provincial governments. Sections dealing with forest and allied industries, except as otherwise noted, were revised in the Forestry Section, Industry Division, Dominion Bureau of Statistics.
    $\dagger$ A more detailed discussion of forest regions is given in Bulletin 123, Forest Regions of Canada, published by the Department of Forestry. Accounts of variations in Canadian physiography and climate are included in a special article on The Climate of Canada, appearing in the 1959 Year Book, pp. 23-51.

[^139]:    *The sixth edition, 1961, is obtainable from the Queen's Printer, Ottawa, price $\$ 2$.

[^140]:    ${ }^{1}$ Figures do not include such values as damage to soil, stream-flow, wildlife, recreation and tourist facilities.

[^141]:    ${ }^{1}$ Prince Edward Island is not included, but 1960 was a particularly serious year for forest fires in that province; an estimated 25 fires burned 18,000 acres with damage assessed at $\$ 221,000$. Cost of fire fighting is not available. ${ }^{2}$ Included in provincial figures.

[^142]:    * Prepared by B. W. Burgess, Secretary, Pulp and Paper Research Institute of Canada, Montreal, Que.

[^143]:    ${ }^{1}$ Includes transportation costs; see text above.

[^144]:    ${ }^{1}$ Includes value of forest products other than wood.

[^145]:    ${ }^{1}$ Prior to 1958, employment statistics included those individuals employed in the transportation of products from the woods to the manufacturing plant or user. In order to report only employment in woods operations, and to avoid duplication of data collected elsewhere, employment statistics for $1958-60$ were compiled to conform with this principle. In 1961, employees engaged in transportation costs were included.
    ${ }^{2}$ Includes transportation costs; see text on p. 510 .

[^146]:    ${ }^{1}$ Includes screenings and unspecified pulps.

[^147]:    ${ }^{1}$ Includes production in other provinces; Prince Edward Island is now the only province in which there is no production.

[^148]:    ${ }^{1}$ Production figures differ slightly from DBS figures given in Table 16, because of a different basis of calculation.

[^149]:    * See Chapter XIV for further particulars regarding the pulp and paper and paper-converting industries.

[^150]:    * For reasons given in Section 1, Part II of the Foreign Trade Chapter, gold is excluded from Canadian trade statistics.

[^151]:    ${ }^{1}$ Imports included in totals only.

[^152]:    * Asphalt roofing manufacturers, folding box and set-up box manufacturers, corrugated box manufacturers, paper bag manufacturers, and miscellaneous paper converters.

[^153]:    * Prepared under the direction of Dr. W. E. van Steenburgh, Deputy Minister of Mines and Technical Surveys, Ottawa, in the following Divisions: Introduction and Subsections 1 and 3 by the Mineral Resources Division; Subsection 2 by the Mineral Processing Division, Mines Branch; and Subsection 4 by the Fuels and Mining Practice Division, Mines Branch.

[^154]:    * This review covers the year 1961, the latest year for which final figures were available at the time of preparation; preliminary figures for 1962 are given in Tables 22-25, pp. 572-573.

[^155]:    * Revised, under the direction of the Deputy Minister, in the Editorial and Information Division, Department of Mines and Technical Surveys, Ottawa.

[^156]:    * Revised under the direction of C. L. O'Brian, Chairman of the Dominion Coal Board, Ottawa.

[^157]:    * Compiled from material supplied by the respective provincial governments.

[^158]:    * Compiled from material supplied by the provincial governments.

[^159]:    PROPORTION OF TOTAL VALUE OF MINERAL PRODUCTION CONTRIBUTED BY METALLICS, NON-METALLICS, FUELS AND STRUCTURAL MATERIALS, 1930-62
    

[^160]:    ${ }^{1}$ Includes minor items not specified.

[^161]:    * For a description of this index, as well as one for manufacturing and electric power and gas utilities, see DBS Reference Paper Revised Index of Industrial Production, 19.95-1957 (1949=100) (Catalogue No. 61-502). To update these series and others in the Index of Industrial Production, see DBS monthly report Index of Industrial Production $(1949=100)$ (Catalogue No. 61-005).

[^162]:    ${ }^{1}$ Based on commodity data.

[^163]:    ${ }^{1}$ Includes 240 oz.t. valued at $\$ 8,052$ produced in New Brunswick.
    ${ }^{2}$ Includes 52 oz.t. valued at $\$ 1,767$ produced in New Brunswick. ${ }^{8}$ Includes 299 oz.t. valued at $\$ 11,186$ produced in New Brunswick.

[^164]:    I Includes relatively amall quantities produced in New Brunswick and Alberta. There was no silver produced in New Brunswick from 1958 to 1961; output in 1962 was 112,493 oz.t.

[^165]:    ${ }^{1}$ Recovered from sour natural gas and nickel sulphide ores.
    ${ }^{2}$ Does not include sulphur in acid made from roasting zinc sulphide concentrates at Arvida. ${ }_{3}$ Includes sulphur in acid made from roasting zinc sulphide concentrates at Arvida and Port Maitland.
    ${ }^{4}$ Excludes pyrite and pyrrhotite used to produce iron

[^166]:    ${ }^{1}$ The sum of Canadian coal mines' sales, colliery consumption. coal supplied to employees and coa! used in making coke, etc., less the tonnage of coal exported. $\quad 2$ Imports of briquettes are not included in this table but are shown separately in Table 23.
    ${ }^{3}$ Includes small tonnages from countries other than Britain and the United States. Deductions have been made from this column to take account of foreign coal re-exported from Canada and bituminous coal ex-warehoused for ships' stores.

[^167]:    ${ }^{1}$ Shipments plus imports less exports.

[^168]:    ${ }^{1}$ Includes only hydroelectric installations that develop power mainly for sale.
    power installations developed by industries mainly for their own use.
    ${ }^{2}$ Includes only water

[^169]:    * Revised by the various provincial commissions concerned.

[^170]:    *The Commission also purchases $135,000 \mathrm{hp}$. from the Shawinigan Water and Power Company.

[^171]:    ${ }^{1}$ Capacities quoted are dependable at time of system peak except those marked with an asterisk (*), which are installed capacities.

[^172]:    ${ }^{1}$ Dependable peak capacity-the amount of power which resources 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 terms of the purchase contract.

[^173]:    ${ }^{1}$ Sum of the maximum 20 -minute coincident peak loads (primary plus 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.

[^174]:    ${ }^{1}$ November 1962 figure.

[^175]:    * Prepared by the Information and Consumer Service, Department of Fisheries, Ottawa.

[^176]:    * Prepared by the respective provincial departments responsible for fisheries administration.

[^177]:    ${ }^{1}$ Excludes livers. $\quad{ }^{2}$ Includes value of livers and liver products.
    4 Excludes landings by Canadian fishermen in United States ports.
    ${ }^{3}$ Included with "Herring".

[^178]:    * Prepared by A. Stewart, Production and Marketing Branch, Department of Agriculture, Ottawa.

[^179]:    * Prepared by the Agriculture Division, Dominion Bureau of Statistics.

[^180]:    ${ }^{1}$ Totals inolude a few pelts and their values not allocated to a province or territory.

[^181]:    * Prepared by W. L. Posthumus, Economics Branch, Department of Trade and Commerce, Ottawa.
    $\dagger$ Secondary manufacturing, as here used, includes the rubber products industry; the leather products industry, excluding the tanning industry; the textiles industry; the knitting and hosiery industry; the clothing industry; the wood products industry, excluding saw and planing mills; the paper products industry, excluding the pulp and paper industry; the printing, publishing and allied industries; the iron and steel products industry; the transportation equipment industry; the non-ferrous metal products industry, excluding smelting and refining; the electrical apparatus and supplies industry; the non-metallic mineral products industry, excluding the cement, lime and salt industries; the chemicals and allied products industry, excluding the fertilizer and vegetable oils industries; and the miscellaneous products industry.

[^182]:    For footnotes, see end of table, p. 646.

[^183]:    ${ }^{1}$ See footnote 1, Table 1.

[^184]:    ${ }^{1}$ A change in the method of computing the number of production workers in the years 1925 to 1930, inclusive, increased the number somewhat over that which the method otherwise used would have given. There was therefore a proportionate reduction in the averages for $1925-30$ per employee as compared with what these averages would have been under the other method. In 1931, however, the method in force prior to 1925 was re-adopted. The figures for 1931 and later years are therefore comparable with those for 1924 and earlier years. ${ }_{2}$ Net value of products; see footnote 1, Table 1, p. $646 . \quad{ }_{3}$ Based on the revised Standard Industrial Classification; see text on p. $651 . \quad{ }^{4}$ Not strictly comparable with previous years; see third paragraph, p. $645 . \quad{ }^{5}$ In 1952 gross value of products was replaced by value of factory shipments; see text on p. 645 .

[^185]:    * For a description of the methods used in constructing the index and a description of its scope, see DBS publication Revised Index of Industrial Production, 1935-1957 (Catalogue No. 61-502).

[^186]:    * DBS publication Standard Industrial Classification Manual (Catalogue No. 12-501).

[^187]:    For footnotes, see end of table, p. 653.

[^188]:    ${ }^{1}$ See footnote 1, Table 1.
    years; see third paragraph, p. 645.
    ${ }^{2}$ See footnote 6, Table 1.
    ${ }^{3}$ Not strictly comparable with previous 1958 because of a change in p. 645 . ${ }^{4}$ Figures for 1959 and later are not comparable with those of 1957 and basis, figures for 1957 and 1958 would be about $\$ 268,000,000$ lower.

[^189]:    ${ }^{1}$ Reported on a production basis.

[^190]:    ${ }^{1}$ Reported on a production basis.

[^191]:    ${ }^{1}$ Newfoundland included from 1955. ${ }^{2}$ Includes only those head offices not located at a plant.

[^192]:    ${ }^{1}$ Confidential; included in "Miscellaneous manufacturing industries".
    authorized by the firms concerned.
    ${ }^{3}$ Confidential; included under "All other groups".

[^193]:    ${ }^{1}$ Confidential; included in "Miscellaneous manufacturing industries".

[^194]:    ${ }^{1}$ Confidential; included in "Miscellaneous manufacturing industries".

[^195]:    ${ }^{1}$ Confidential; included under "All other groups".

[^196]:    * Except where otherwise noted, prepared in the Planning and Development Section, Business Finance Division, Dominion Bureau of Statistics.
    $\dagger$ Capital expenditure figures for 1961 and earlier years are final and those for 1962 are preliminary and subject to revision at a later date. Capital expenditures for 1961 and 1962, as well as intentions for 1963, appear in greater detail in the publication Private and Public Investment in Canada, Outlook 1963, available from the Queen's Printer (Catalogue No. C51-1/1963).

[^197]:    * An explanation of sources and methods is given in DBS annual report Construction in Canada (Catalogue No. 64-201).

[^198]:    ${ }^{1}$ Work done by the 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.

[^199]:    ${ }^{1}$ Metropolitan Corporation of Greater Winnipeg.

[^200]:    * Subsections 1 and 2 were prepared in the Information Division, Central Mortgage and Housing Corporation, Ottawa.

[^201]:    For footnotes, see end of table.

[^202]:    ${ }^{1}$ Data on 1956 Census Area definitions.
    ${ }^{2}$ Data on 1961 Census Area definitions.
    ${ }^{3}$ Reclassified from Major Urban Area to Metropolitan Area in 1961 Census.
    ${ }^{4}$ Classified as Major Urban Area in 1961 Census. ${ }^{5}$ Excludes Yukon and Northwest Territories.

[^203]:    ${ }^{1}$ Exclusive of the Yukon and Northwest Territories.
    2 Dwellings in which the number of persons exceeded the number of rooms. ${ }^{3}$ Figures relate to owner-occupied, single detached, non-farm dwellings only. $\quad$ Figures relate to non-farm dwellings only.

[^204]:    ${ }^{*}$ More detailed information may be found in Vol. 11 (Part 2) of the 1961 Census (Catalogue Nos. 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 structurally separate set of living quarters with a private entrance either from outside the building or from a common hall or stairway inside. The entrance must not be through anyone else's living quarters.

[^205]:    * Except as otherwise noted, this Chapter has been revised under the direction of the Deputy Minister of the Department of Labour, Ottawa.

[^206]:    * Statistics on numbers and earnings of prevailing rate and other groups of federal employees exempt from the Civil Service Act are given at pp. 134-139.

[^207]:    ${ }^{1}$ In hotels and restaurants the rates apply to a maximum of 54 hours per week.
    ${ }^{2}$ Applies only to canning or processing of fish, vegetables or fruit; 60 cents in the garment industry for 48 hours or less in a week. side set \& minimum rate of 821 a cashiers in Summerside. ${ }_{4}$ Cher warresses, $\$ 16$ for other restaurant workers in Charlottetown, $\$ 23$ for 56 cents. $\quad 5$ Dollars per week

[^208]:    * Prepared in the Special Surveys Division, Dominion Bureau of Statistics.

[^209]:    * Prepared in the Employment Section, Labour Division, Dominion Bureau of Statistics.

[^210]:    ${ }^{1}$ The durable goods group includes wood products, iron and steel products, transportation equipment, nonferrous metal products, electrical apparatus and supplies, and non-metallic mineral products; the non-durable goods group includes all other manufacturing industries.

[^211]:    ${ }^{1}$ Mainly hotels, restaurants, laundries, dry-cleaning establishments and business and recreational services.

[^212]:    ${ }^{1}$ The durable goods group includes wood products, iron and steel products, transportation equipment, nonferrous metal products, electrical apparatus and supplies, and non-metallic mineral products; the non-durable goods group includes all other manufacturing industries.

[^213]:    1 "Other Industries" consists of logging; mining; transportation (all sectors including air transportation), storage and communication (including radio and TV); public utilities; trade; finance; and government and personal service.

[^214]:    ${ }^{1}$ Distinction between vacation policies providing for increasing vacation periods with increasing service and vacation policies providing for vacations of one stated period regardless of length of service was made for the first time in 1960; thus, in comparing 1960, 1961 and 1962 figures with those for previous years, the percentages of employees granted vacations under both policies should be added.

[^215]:    - Prepared by the Unemployment Insurance Section, Labour Division, Dominion Bureau of Statistics; statistics of unemployment insurance are compiled and published by the DBS from material supplied by the Unemployment Insurance Commission.

[^216]:    * Prepared (July 1963) by Phillip Cohen, Chief, Training Research Section of the Economics and Research Branch, Department of Labour, Ottawa.

[^217]:    ${ }^{1}$ Present federal-provincial Agreements entered into under the Technical and Vocational Training Assistance Act came into effect in April 1961.

    2 Estimates.

[^218]:    * More detailed information is given in the Department of Labour publication Workmen's Compensation in Canada, A Comparison of Provincial Laws.

[^219]:    ${ }^{1}$ Accidents requiring medical treatment but not causing 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 earnings, medical aid payments, cost of rehabilitation and hospitalization (not including capital expenditures) and pensions paid (not pensions awarded) for temporary and permanent disabilities
    ${ }^{3}$ Excludes payments by employers who make direct compensation to their employees; such employees come under Schedule II of the Ontario and Quebec Workmen's Compensation Acts.

[^220]:    ${ }^{1}$ Figures for years up to and including 1949 are as at Dec. 31; figures from 1951 are as at Jan. 1. ${ }^{2}$ Newfoundland included from 1949. members.

[^221]:    * The Board's judgments are reported in Canadian Railway Cases and Canadian Railway and Transport Cases, and its judgments, orders, rulings and regulations are published by the Queen's Printer, Ottawa, in what is known as J.O.R. \& R.

[^222]:    *Revised in the Public Finance and Transportation Division, Dominion Bureau of Statistics; more detailed information is given in the annual reports of the Division.

[^223]:    ${ }^{1}$ Newfoundland included from 1950 . . $\quad{ }^{2}$ Excludes 51 miles of joint track.
    ${ }^{3}$ Excludes 52 miles of joint track. $\quad{ }_{4}$ Excludes 53 miles of joint track.

[^224]:    ＊Statistics for individual railways are given in DBS annual report Railway Transport，published in six parts （Catalogue Nos．52－207－52－212）．

[^225]:    ${ }^{1}$ Includes investments totalling $\$ 11,188,835$ of the British Columbia Electric Railway which in 1957 reported for the first time in the railway transport series.

    Revenues and Expenses.-The ratio of operating expenses to revenues of railways operating in Canada was 96.36 p.c. in 1961 compared with 90.19 p.c. in 1952; the high for the period 1952-61 was 97.30 p.c. recorded in 1958. Operating revenues, which reached an all-time high in 1956, declined 1.3 p.c. over the ten years. Operating expenses, on the other hand, increased 5.4 p.c. during the same period. Because outlay increased more rapidly than income, the net operating revenue per mile of line dropped from $\$ 2,675$ in 1952 to $\$ 936$ in 1961, although the lowest figure during the period was recorded in 1958 at $\$ 696$.

[^226]:    *The Hudson Bay Railway, formerly managed and operated for the Federal Government by the 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 subsequent years.

[^227]:    ${ }^{1}$ Includes "loans and bills receivable" and "rents receivable".

[^228]:    ${ }^{1}$ Full-time employees only for 1953 and all employees, including part-time, for 1954-62.

[^229]:    * Except as otherwise indicated, the material in this Part has been revised in the Transportation Section, Public Finance and Transportation Division, Dominion Bureau of Statistics.

[^230]:    ${ }^{1}$ Decrease due to exclusion of unused road allowance included in 1957. ${ }^{2}$ Decrease from 1957 due to elimination of duplications in reporting. $\quad{ }_{3}$ Includes roads in Provincial Parks and forest development and mining roads not included previously.

    Total expenditure on highways and rural roads in the year ended \ar. 31, 1962 was $8753,515,554$, an amount 5.2 p.c. lower than that for the previous fiscal year; construction expenditures decreased by 9.6 p.c. while maintenance costs were 5.7 p.c. higher. Table 2 shows expenditure by province and the federal-provincial-municipal distribution of such expenditure for the years ended Mar. 31, 1961 and 1962.

[^231]:    ${ }^{1}$ Includes federal administrative costs re Trans-Canada Highway amounting to $\$ 188,265$ in $1960-61$ and $\$ 198,500$ in 1961-62.

[^232]:    ${ }^{1}$ Includes registrations in the Yukon and Northwest Territories.

[^233]:    ${ }^{1}$ Includes Armed Forces vehicles.

[^234]:    ${ }^{1}$ Includes other items not shown such as transfer of motor vehicles, garage and service station licences, and fines for infractions of motor vehicle laws.
    ${ }^{3}$ Included with other motor vehicles. ${ }_{2}$ Includes commissions allowed to gasoline agents and refunds.
    ${ }^{5}$ Included with passenger automobiles. ${ }^{4}$ Included with miscellaneous revenues and therefore in total. 6 Not complete.

[^235]:    - Statistics are given in more detail in DBS annual report Motor Carriers-Freight, Part I (Catalogue No. 53-222) and Part II (Catalogue No. 53-223).

[^236]:    * Statistics are given in more detail in DBS annual report Moving and Storage, Household Goods (Catalogue No. 53-221).

[^237]:    * Statistics are given in more detail in DBS annual reports Motor Transport Traffic for Canada and the provinces (Catalogue Nos. 53-207-53-214).

[^238]:    ${ }^{1}$ Initial revenue passenger fares, excluding transfers.
    ${ }_{2}^{2}$ Excludes British Columbia Electric Railway Company (British Columbia Hydro and Power Authority in 1962).

[^239]:    ${ }^{1}$ All reported accidents are those resulting in property damage estimated at $\$ 100$ or over. ${ }^{2}$ Included with passengers in Quebec. ${ }_{5}$ Incomplete; see footnotes 2 and $4 . \quad{ }_{4}$ Included with bicyclists in New
    Brunswick. ${ }^{5}$ Excludes Quebec.

[^240]:    * Information and statistics dealing with this subject have been supplied as follows: aids to navigation, canals, harbours, 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 statistics of shipping by the Public Finance and Transportation Division, Dominion Bureau of Statistics.

[^241]:    ${ }^{1}$ Sea-going and inland international.

[^242]:    ${ }^{1}$ Includes smaller ports not shown separately.

[^243]:    ${ }^{1}$ Minimum depth of Seaway canals is 27 feet and minimum width 200 feet. Wiley-Dondero canal and two locks near Massena, N.Y., are in United States territory; dimensions are approximately the same as those of Canadian facilities. ${ }^{2}$ Notice must be given by vessels of more than six-foot draught.
    ${ }^{3}$ With Lake Ontario at elevation of 243 feet.

[^244]:    ${ }^{1}$ Grouped according to the revised Standard Industrial Classification．

[^245]:    ${ }^{1}$ Includes naval vessels.
    ${ }^{2}$ Upbound passengers in all types of vessel numbered 4,847 and downbound

[^246]:    ${ }^{1}$ Tolls removed June 1, 1962.
    ${ }^{2}$ Commenced operations June 29, 1962.

[^247]:    ${ }^{1}$ Includes other flying services.

[^248]:    * Prepared in the Mineral Resources Division, Department of Mines and Technical Surveys, Ottawa, under the direction of Dr. W. E. van Steenburgh, Deputy Minister.

[^249]:    *Subsections 1 and 4 to 7 were revised in the Telecommunications and Electronics Branch of the Department of Transport, Ottawa. Textual data in Subsection 2 were prepared by The Bell Telephone Company of Canada, Montreal, and in Subsection 3 by Canadian Pacific Telecommunications Department, Montreal. Statistical material of Subsection 2 and Subsection 3 was revised in the Public Finance and Transportation Division, Dominion Bureau of sitatistics.

[^250]:    ${ }^{1}$ Includes underground conduits and buried cable.

[^251]:    ${ }^{1}$ Includes premium on capital stock.
    ${ }^{2}$ Full-time and part-time.
    ${ }^{2}$ Includes data of The Bell

[^252]:    ${ }^{1}$ Twin cable from Clarenville, Nfld. to Oban, Scotland and single cable from Clarenville, Nfld. via Terranceville, Nfld. to Sydney Mines, N.S. $\quad 2$ Licensed for operation by two carriers-COTC and ET\&T. $\quad$ ane
    cable unserviceable.

[^253]:    ${ }^{*}$ Textual information in this Subsection was supplied by the Canadian Broadcasting Corporation, the Board of Broadcast Governors and the Canadian Association of Broadcasters; statistical data were prepared by the Public Finance and Transportation Division of the Dominion Bureau of Statistics.

[^254]:    The establishment and growth of CBC radio and television facilities throughout the years is covered in previous editions of the Year Book; developments taking place during 1962 and early 1963 only are covered here.

[^255]:    *An article in the 1957-58 Year Book traces developments in Canadian journalism from their beginnings in 1752 to (circa) 1900. A second article appearing in the 1959 edition brings that account up to the date of writing (1958). The complete presentation is available in reprint form from the Dominion Bureau of Statistics.

[^256]:    ${ }^{1}$ Includes semi－weeklies，tri－weeklies and bi－weeklies．
    ${ }^{2}$ Circulation not reported for all newspapers．
    Includes bilinguals．
    newspapers．

[^257]:    * Prepared in the Merchandising and Services Division, Dominion Bureau of Statistics.

[^258]:    $\dagger$ Vol. VI (Pt.1) Census of Merchandising: Retail Trade (Series 6.1). Vol. VI (Pt. 2) Census of Merchandising: Wholesale Trade; Services (Series 6.2).

[^259]:    ${ }^{1}$ Newfoundland included from 1949. ${ }^{2}$ Includes the Yukon and Northwest Territories.
    ${ }^{3}$ Totals are not the exact addition of the components because of rounding of the figures.

[^260]:    ${ }^{1}$ 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 terms of rye. $\quad{ }^{2}$ Fewer than 50,000 bu. ${ }^{3}$ Includes bagged seed wheat, wheat 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 terms of rye. handling and animal feed.

[^261]:    ${ }^{1}$ Includes bagged seed wheat and wheat flour in terms of wheat.
    ${ }^{2}$ Fewer than 50.000 bu.

[^262]:    ${ }^{1}$ Western grain in bushels of 50 lb .

[^263]:    * More detailed information is available from DBS annual report Livestock and Animal Products Statistics (Catalogue No. 23-203), and the Department of Agriculture publication Livestock Market Review. Statistics of livestock and poultry are given on pp. 454-458 of this edition of the Year Book.

[^264]:    ${ }^{1}$ Livestock billed through stockyards to country points outside province of origin.

[^265]:    - Information supplied by various Divisions of the Departments of Agriculture, Fisheries, Mines and Technical Surveys, and National Revenue and of the Dominion Bureau of Statistics.

[^266]:    ${ }^{1}$ Includes household goods storage operators, now compiled separately (see p. 000). $\quad{ }^{2}$ Includes 21,601,786 $\mathrm{cu} . \mathrm{ft}$. of storage space for household goods.
    ${ }^{3}$ Includes $1,574,620 \mathrm{cu}$. ft . of storage space for household goods.

[^267]:    ${ }^{1}$ Includes other revenue.

[^268]:    ${ }^{1}$ Includes duplication, as some associations market produce as well as handle supplies, some associations market more than one product and some handle many of the supplies listed.

[^269]:    ${ }^{*}$ Revised in the Transportation Section, Public Finance and Transportation Division, Dominion Bureau of Statistics.

[^270]:    ${ }^{1}$ Class I and II railways operating in Canada.
    ${ }^{2}$ Freight terminated exceeds totals carried due to tonnages originated by non-reporting industrial railways which are delivered to common carrier lines for further haul and unloading.

[^271]:    * Prepared by W. J. MacLeod, Secretary of the Board of Grain Commissioners for Canada, Winnipeg, Man.

[^272]:    * Revised by R. L. Kristjanson, Executive Assistant, The Canadian Wheat Board, Winnipeg, Man.

[^273]:    *Prepared in the Economica Division of the Administration Branch, Department of Agriculture, Ottawa. A more detailed statement on this subject, including the history of developments leading to the present situation, appears in the 1960 Year Book, pp. 961-986.

[^274]:    * Revised by D. H. W. Henry, Director of Investigation and Research, Combines Investigation Act, Department of Justice, Ottawa.

[^275]:    ${ }^{1}$ After provision for depreciation on fixed assets and capital expenditure met out of operating income; includes commission on general sales tax collections. ${ }^{2}$ Before deducting any payments to municipalities out of liquor control authority revenue. ${ }^{3}$ Includes $\$ 1,897,000$ in 1961 and $\$ 2,068,000$ in 1962 commission on beer sold direct from local breweries to the public through licensed outlets under controlled prices.
    ${ }^{4}$ The unemployment tax on sales of alcoholic beverages was repealed on Apr. 13, 1961.

[^276]:    ${ }^{*}$ Prepared from the report of the National Energy Board for the year ended Dec. 31, 1962. The functions of the Board are given in greater detail in the 1961 Year Book, pp. 1022-1023.

[^277]:    * Revised by the Commissioner of Patents, Department of the Secretary of State. Ottawa.

[^278]:    *Revised by the Registrar of Trade Marks, Department of the Secretary of State, Ottawa.
    $\dagger$ Revised by the Administrative Officer, Dominion Coal Board, Ottawa.

[^279]:    ${ }^{1}$ Includes $\$ 500,000$ paid by the Nova Scotia Government as its share of the joint cost of certain Nova Scotia subvention payments.

[^280]:    *Prepared by the Superintendent of Bankruptcy, Ottawa. Early bankruptcy and insolvency legislation is reviewed in the 1952-53 Year Book, pp. 914-915.
    $\dagger$ Prepared by the Business Finance Division, Dominion Bureau of Statistics.

[^281]:    ${ }^{1}$ New series not strictly comparable with previous figures; see text above.

[^282]:    * Prepared in the Prices Division, Dominion Bureau of Statistics.

[^283]:    * Details of weighting and construction and historical series appear in DBS publications Price Index Numbers of Residential Building Materials, 1926-48 (Catalogue No. 62-505) and Price Index Numbers of Non-residential Building Materials, 1935-52 (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.

[^284]:    1 "Pork, fresh loins."

[^285]:    - All security price indexes presented in this Section are on the new base $1956=100$; indexes presented in the 1962 and previous editions of the Year Book were on the $1935-39=100$ base. Historical indexes on the 1956 base are available from the Prices Division, Dominion Bureau of Statistics.

[^286]:    * Prepared by G. S. Watts, Research Department of the Bank of Canada, Ottawa.

[^287]:    Based on statistics taken from reports published by the External Trade Division, Dominion Bureau of Statistics.

[^288]:    ${ }^{1}$ Less than $\$ 500 . \quad 2$ Included with Saudi Arabia prior to 1960. prior to 1960.

[^289]:    ${ }^{1}$ Less than $\$ 500$.
    2 Includes Alaska and Hawaii.

[^290]:    ${ }^{1}$ Included with Kenya prior to 1960 prior to 1961. prior to 1960.
    ${ }^{2}$ Less than $\$ 500$.
    ${ }^{2}$ Included with French Africa, n.e.s.
    4 Included with Portuguese Africa, n.e.s. prior to 1960 . ${ }_{5}$ Included with Viet Nam

[^291]:    ${ }^{1}$ Less than $\$ 500$.
    2 Includes Alaska and Hawaii.

[^292]:    ${ }^{1}$ Not comparable with data for 1960-62.

[^293]:    ${ }^{2}$ Not comparable with data for 1961 and 1962.

[^294]:    ${ }^{1}$ Less than $\$ 500$.

[^295]:    ${ }^{1}$ Less than $\$ 500$.

[^296]:    ${ }^{1}$ In this classification the expression "Canadian Farm Products" refers to commodities actually produced, in their original form, on Canadian farms. "Foreign Farm Products" covers materials or commodities Canada does not produce, e.g., cane sugar, tea, rubber, cotton, silk, etc.

[^297]:    ${ }^{1}$ In this classification the expression "Canadian Farm Products" refers to commodities of which the basic raw materials are such as Canadian farms produce. "Foreign Farm Products" covers materials or commodities Canada does not produce, e.g., cane sugar, tea, rubber, cotton, silk, etc.

[^298]:    * Prepared in the several branches and agencies concerned, and collated in the Trade Publicity Branch, Department of Trade and Commerce, Ottawa.

[^299]:    * Information relating to rate of duty and value for duty is available from the Department of National Revenue, Customs and Excise Division, which administers the Customs Act and the Customs Tariff.

[^300]:    ${ }^{*}$ Prepared in the Travel Statistics Unit, National Accounts and Balance of Payments Division, Dominion Bureau of Statistics.

[^301]:    * Except as otherwise indicated, revised in the Public Finance and Transportation Division, Dominion Bureau of Statistics.

[^302]:    ${ }^{1}$ Incomplete; not separable from real property taxes in some provinces.

[^303]:    I Excludes capital expenditures out of capital fund for the Province of Quebec. ${ }^{2}$ Includes pensions paid from Old Age Security Fund. ${ }^{3}$ Includes interest on debentures issued for school purposes. interest on debentures issued for school purposes.

[^304]:    * Revised (July 1963) in the Taxation Division, Department of Finance, under the direction of F. R. Irwin, Director of the Division, and by the provincial authorities concerned.

[^305]:    * See also pp. 946-947.

[^306]:    *The provincial mark-up over the manufacturer's price is not considered a "tax" in DBS financial statistics, but forms part of the "profits of government business enterprises" (see p. 960).
    $\dagger$ Generally, fuel oil used for agricultural and industrial purposes is exempt from tax.

[^307]:    ${ }^{1}$ Includes pensions paid from the Old Age Security Fund.
    ${ }^{2}$ Unconditional payments; grants for specific purposes are classified by function. See Table 6 for details of all grants to provincial governments and municipal corporations.

[^308]:    ${ }^{1}$ Includes Board of Grain Commissioners and payments in respect of the Canadian Wheat Board, the Prairie Grain Advance Payments Act and the Prairie Grain Provisional Payments Act, previously included in "Trade and Commerce". ${ }^{2}$ Pensions under the Old Age Security Act, 1951 (effective January 1952) are paid out of the Old Age Security Fund account and are not recorded under departmental expenditure.

[^309]:    ${ }^{1}$ These contingent liabilities are expressed in Canadian dollars; where applicable, stocks and bonds payable solely in sterling or United States dollars are converted on the basis of $£ 1=\$ 2.80$ and $\$ 1$ U.S. $=\$ 1$ Canadian, respectively. In addition the government has an indeterminate contingent liability in respect of rental guarantee contracts which in 1961 amounted to approximately $\$ 15,333,000$. Against this amount was a reserve of $\$ 3,726,563$. ${ }_{2}$ As at Dec. 31, 1961.
    ${ }^{3}$ As reported (in accordance with Sect. 45, National Housing Loan Regulations) by approved lenders for their respective fiscal years ended between Oct. 31 and Dec. 31, 1961.

[^310]:    1 Includes old age security tax.

[^311]:    ${ }^{1}$ Does not include government-owned plants but does include physical property held for sale. 2 Of these amounts, $\$ 1,024,710,000, \$ 1,335,510,000, \$ 1,677,209,000$ and $\$ 1,670,653,000$, respectively, are guaranteed by the Federal Government.

[^312]:    ${ }^{1}$ Excludes debt retirement.

[^313]:    ${ }^{1}$ Taxed under the general sales tax．

[^314]:    ${ }^{1}$ Excludes bonds assumed by the provinces.

[^315]:    For footnotes, see end of table.

[^316]:    ${ }^{1}$ Includes physical property held for sale and an undertermined amount of interest capitalized during construction. $\quad 2$ Of these amounts, $\$ 2,432,307,000, \$ 2,795,952,000, \$ 3,028,071,000$ and $\$ 4,013,074,000$, respectively, are guaranteed by provincial governments. ${ }_{3}$ These amounts differ by $-\$ 299,000$ and $\$ 4,526,000$, respectively, from change in asset item "Inventories", by reason of the closing out of one establishment of an enterprise and the acquisition of a private company.

[^317]:    For footnotes, see end of table, p. 1006.

[^318]:    ${ }^{1}$ City of St. John's only. ${ }^{2}$ Includes: N.S.-household tax, Halifax; N.B.-occupancy tax, Fredericton, and rentals tax, Moncton; Sask.-special franchise. $\quad{ }^{3}$ Total of valuations assessed but exempt from taxation; excludes exempt property not assessed. ${ }^{4}$ Incomplete. ${ }^{5}$ Excludes permissive exemptions. ${ }^{6}$ Whitehorse only. $\quad 7$ Yellowknife only. ${ }^{8}$ Excludes partial statutory and permissive exemptions.

[^319]:    ${ }^{1}$ Less than $\$ 500$

[^320]:    * Prepared in the National Accounts and Balance of Payments Division, Dominion Bureau of Statistics.

[^321]:    * Replaces, for this issue only, the Survey of Production analysis.
    $\dagger$ Indexes of Real Domestic Product by Industry of Origin, 1935-61 (Catalogue No. 61-505). This paper provides a detailed explanation of concepts, uses and limitations, data sources , methodology, etc., as well as a much wider range of industries than provided in this Section.

[^322]:    *Indexes of Real Domestic Product by Industry of Origin, 1995-61 (Catalogue No. 61-505). This paper provides a detailed explanation of concepts, uses and limitations, data sources, methodology, etc., as well as a much wider range of industries than provided in this Section.
    $\dagger$ See Revised Index of Industrial Production, 1935-1957 (Catalogue No. 61-502) and the current monthly publication Index of Industrial Production (Catalogue No. 61-005).

[^323]:    * 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).

[^324]:    * Commodity trade statistics have been adjusted to reflect more closely the timing of transactions, particularly for investment goods, and to exclude commodities which are either covered elsewhere in the accounts or are not pertinent for balance of payments purposes.

[^325]:    ${ }^{1}$ Includes all net exports of non-monetary gold.

[^326]:    * A more 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 Balance of International Payments and International Investment Position (Catalogue No. 67-201).

[^327]:    ${ }^{1}$ Excludes short-term commercial indebtedness. $\quad{ }^{2}$ Includes international financial agencies. ${ }^{3}$ Country

[^328]:    ${ }^{1}$ Includes some investments held for residents of other countries.

[^329]:    * Except where otherwise indicated, this material has been revised by the Research Department of the Bank of Canada.

[^330]:    ${ }^{1}$ Includes investments; the change in loans outstanding does not equal the difference between disbursements and repayments because of year-end accounting adjustments.

[^331]:    ${ }^{1}$ Note issues in the process of being retired, the liability for which has been taken over by the Bank of Canada from the original issuers.

[^332]:    *Revised by the Master of the Royal Canadian Mint, Ottawa.

[^333]:    ${ }^{1}$ Less total float, i.e., cheques and other items in transit. $\quad 2^{2}$ The deposit balances of religious, educational and welfare institutions and personal accounts used mainly for business purposes were reclassified from "personal savings deposits" to "other notice deposits" as at Sept. 30, 1957, in the returns of the banks to the Department of Finance; from that date the figures are thus not comparable with those for previous years. The amount of deposits reclassified was approximately $\$ 140,000,000$.

[^334]:    * More detail is included in an article appearing in the 1961 Year Book, pp. 1115-1120, prepared by J. Douglas Gibson, General Manager of The Bank of Nova Scotia. The early history of currency and banking in Canada is given in the 1938 Year Book, pp. 900-905. A list of the banks at Confederation appears in the 1940 Year Book, p. 897 , and bank absorptions since 1867 are given in the 1941 edition, pp. 812-813. A table in the 1937 Year Book, pp. 894-895, shows the insolvencies since Confederation; the last insolvency occurred in 1923.
    $\dagger$ The larger Canadian banks have long maintained offices in London and New York. In addition, some Canadian banks for more than half a century have been providing an important part of the commercial banking lacilities in the Caribbean area (see Table 10, p. 1054). The Bank of Montreal opened an office in Tokyo in January 1962, the first to be established in Japan by a Canadian bank.

[^335]:    * 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 generally been confined within narrower limits, although it is still practised when conditions permit.

[^336]:    ${ }^{1}$ Includes other items not specified.

[^337]:    ${ }^{1}$ Realized profits and losses on disposal of securities are included in operating earnings. for income taxes, losses, and transfers to inner reserves, 3 Includes taves other frofits and losses on sale of fixed assets and adjustments relating to prior years. ${ }^{5}$ After amounts retransferred to rest account.
    ${ }^{6}$ Includes income taxes on taxable portion of additions to and amounts retransferred
    from inner reserves, and foreign income taxes.

[^338]:    ${ }^{1}$ Excludes some debits reported in preceding years.

[^339]:    ${ }^{1}$ Reporting organizations only.

[^340]:    * The gold sovereign remained the standard for the Canadian dollar until 1910 when the currency was defined in terms of fine gold, making it the exact gold equivalent of the United States dollar. Both British and United States gold coins were, however, legal tender in Canada for this whole period.

[^341]:    * 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.

[^342]:    *Revised under the direction of the Superintendent of Insurance for Canada, Ottawa.

[^343]:    ${ }^{1}$ Profits before income taxes.

[^344]:    ${ }^{1}$ Includes companies chartered by the Governments of Nova Scotia, New Brunswick and Manitoba which, by arrangement, are inspected by the federal Department of Insurance. ${ }^{2}$ Excludes provincial companies of Nova Scotia, New Brunswick and Manitoba which are included with federal companies.

[^345]:    * Further details are given in the Department of Insurance report Small Loans Companies and Money-Lenders for the year ended Dec. 31, 1961.

[^346]:    ${ }^{1}$ Excludes treasury bills, deposit certificates and other financing for a term of less than one year and also the Canada Conversion Loan of 1958.

[^347]:    * Provincial Savings Bonds, Series 2.

[^348]:    *Material in this Chapter, except as otherwise indicated, has been prepared under the direction of the Superintendent of Insurance for Canada, Ottawa. More detailed data are available in the annual reports of the Department of Insurance.
    $\dagger$ Prepared by Richard Humphrys, Assistant Superintendent of Insurance, Ottawa.

[^349]:    ${ }^{1}$ Death, disability and maturity under insurance and annuity contracts.

[^350]:    ${ }^{1}$ Death, disability and maturity under insurance and annuity contracts.

[^351]:    ${ }^{1}$ All funds, business in and out of Canada.

[^352]:    ${ }^{1}$ All funds, business in and out of Canada.
    ${ }^{2}$ All funds, business in Canada only.

[^353]:    ${ }^{1}$ Excludes forest fires and Federal Government property losses.
    ${ }^{2}$ Newfoundland included from 1955.

[^354]:    ${ }^{1}$ Excludes forest fires and Federal Government property losses.
    for Newfoundland not complete.

[^355]:    ${ }^{1}$ Includes marine insurance.

[^356]:    ${ }^{1}$ Includes marine insurance.

[^357]:    ${ }^{1}$ Undetermined.

[^358]:    ${ }^{1}$ Less than 8500,000 .

[^359]:    ${ }^{1}$ Because of age restriction or other factors, such as in plans with membership limited to males, females salaried employees, hourly-paid employees, sales force, union members or executives.

[^360]:    ${ }^{1}$ Includes federal Public Service Superannuation Act, Canadian Forces Superannuation Act and Royal Canadian Mounted Police Superannuation Act, plans for the provincial civil service for six provinces and plans for teachers in two provinces.

[^361]:    * Prepared in the Office of the Deputy Minister, Department of National Defence, Ottawa.

[^362]:    * As at July 1963.

[^363]:    * Prepared by the Economics and Statistics Branch, Department of Defence Production, Ottawa.

[^364]:    Nfid., P.E.I., N.B., Que., Ont., Man.:-Depts. of Health Public Health
    B.C.:-Dept. of Health Services and Hospital Insurance

[^365]:    P.E.I., N.S., Que., Ont., Man., Sask., B.C.:-Depts. of Provincial Secretary

[^366]:    * All academic and honorary degrees and military honours omitted.

[^367]:    * By amendment dated Aug. 2, 1963, term to expire Jan. 24, 1965.

[^368]:    ${ }^{1}$ Each voter in the double-member constituency of Queens County, P.E.I., had two votes; in 1963, 26,472 voters on the list cast 42,703 votes. $\quad 2$ Each voter in the double-member constituency of Halifax, N.S., had two votes; in 1963, 122,846 voters on the list cast 183,402 votes.
    ${ }^{3}$ Electoral District of Yukon.
    ${ }^{4}$ Electoral
    District of Northwest Territories.

