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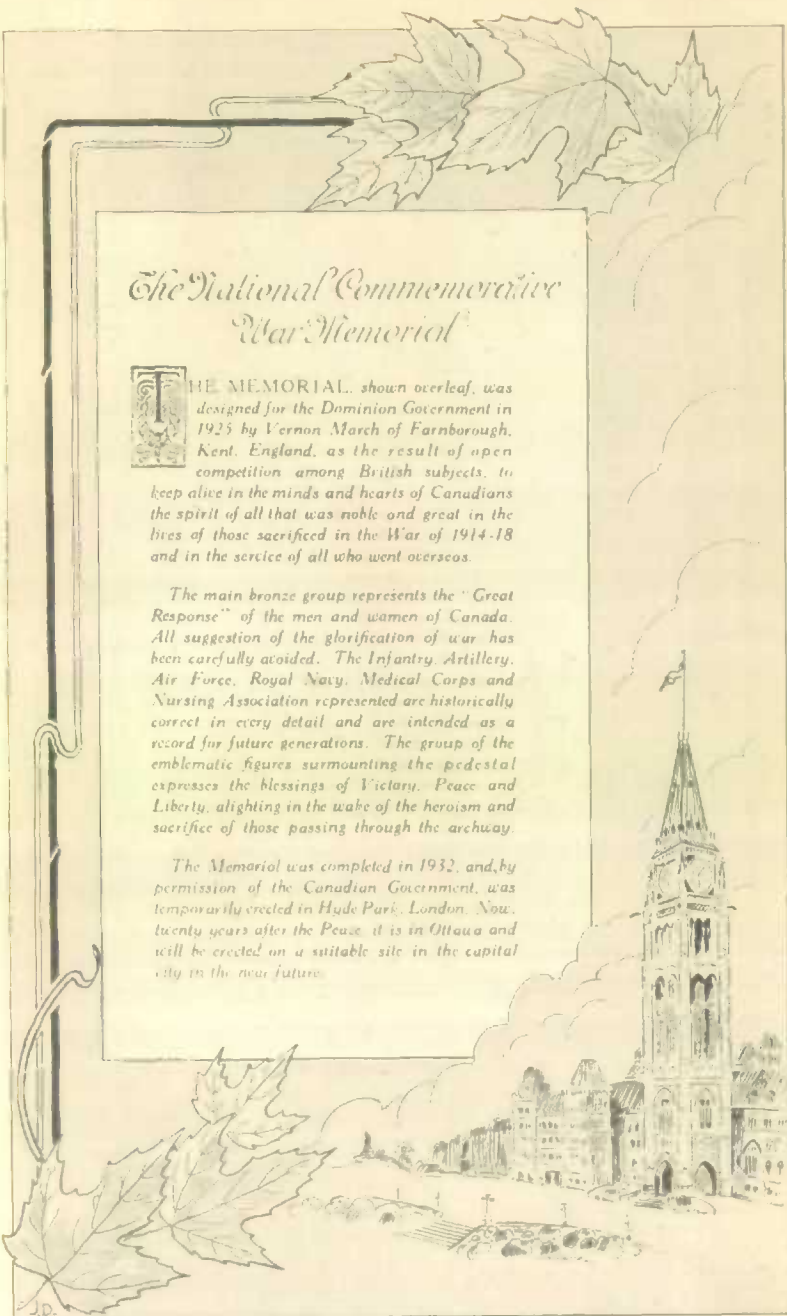
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CANADA 1938

The Official Handbook
of Present Conditions and
Recent Progress



The National Commemorative War Memorial

THE MEMORIAL, shown overleaf, was designed for the Dominion Government in 1925 by Vernon March of Farnborough, Kent, England, as the result of open competition among British subjects, to keep alive in the minds and hearts of Canadians the spirit of all that was noble and great in the lives of those sacrificed in the War of 1914-18 and in the service of all who went overseas.

The main bronze group represents the "Great Response" of the men and women of Canada. All suggestion of the glorification of war has been carefully avoided. The Infantry, Artillery, Air Force, Royal Navy, Medical Corps and Nursing Association represented are historically correct in every detail and are intended as a record for future generations. The group of the emblematic figures surmounting the pedestal expresses the blessings of Victory, Peace and Liberty, alighting in the wake of the heroism and sacrifice of those passing through the archway.

The Memorial was completed in 1932, and, by permission of the Canadian Government, was temporarily erected in Hyde Park, London. Now, twenty years after the Peace, it is in Ottawa and will be erected on a suitable site in the capital city in the near future.





The National War Memorial



Canada 1938



DOMINION BUREAU OF STATISTICS

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The **O**fficial **H**andbook
of Present Conditions and
Recent Progress

M.C.

Published by Authority of the Hon W.D. Euler, M.P.
Minister of Trade and Commerce



DOMINION BUREAU OF STATISTICS
OTTAWA, CANADA

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FOREWORD



THE very substantial increase in the sales of this handbook since the series was placed on an annual basis in 1930, its extensive use by official and semi-official bodies in regular and special editions, its distribution in large numbers at international exhibitions and in different parts of the world where Canada is officially represented, and its use, by special permission, in financial and commercial houses for distribution to their clients, all attest to the need which exists for a publication giving in brief and readable form the statistical record of the recent progress and present economic condition of the Dominion.

The current reports of the Dominion Bureau of Statistics deal in great detail with the subjects of population, production, external and internal trade, transportation, education, etc., but these detailed publications are intended mainly for those who are specially interested in particular phases of our national life. Again, the *Canada Year Book*, which summarizes these and other official publications, is of too detailed and expensive a character for wide distribution. The present publication is the result of an effort to survey the current Canadian situation—comprehensively but at the same time succinctly—in a popular and attractive form, and at a cost which makes possible its use on a general scale.

The handbook is designed to serve two purposes. To those outside of Canada, it will give a well-rounded picture of the Canadian situation from Atlantic to Pacific. In Canada itself, it will help to provide a better basis of information for dealing with current problems.

Minister of Trade and Commerce.

OTTAWA, January 1, 1938.

PREFATORY NOTE

This handbook has been prepared in the Dominion Bureau of Statistics from material which has, in the main, been obtained from the different Branches of the Bureau. In certain special fields information has been kindly contributed by other branches of the Government Service.

The handbook is planned to cover, in nineteen chapters, the current economic situation in Canada, the weight of emphasis being placed from year to year on those aspects which are currently of most importance, since there is not space to deal adequately with all. The Introduction is a short review of data more fully set out in the succeeding chapters, but brought up to the actual time of going to press. Chapter I is reserved for the treatment of topics of current national or general interest and this year deals with the Trans-Canada Airway and Its Relation to the World's Airway System. This material has been revised by J. A. Wilson, Esq., Controller of Civil Aviation, and approved by the Hon. C. D. Howe, Minister of Transport. The special article on Prairie Farm Rehabilitation, which appears in the chapter on Agriculture, has been prepared by Wm. Dickson, Esq., of the Central Experimental Farm, Ottawa, and approved by Dr. E. S. Archibald, Director of the Dominion Experimental Farms.

R. H. COATS,

Dominion Statistician.

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INTRODUCTION

THE ECONOMIC POSITION OF CANADA AT THE CLOSE OF 1937

World Conditions



HON. WILLIAM D. EULER, M.P.,
Minister of Trade and Commerce

Industrial production which had shown expansion in most of the important countries for several years, recorded further betterment during the greater part of 1937 and reached a level considerably above the peak of 1929. The output of primary industrial materials recorded a marked expansion over the preceding year. Agricultural production, especially foodstuffs, remained comparatively stable. The index of world stocks of primary products (base 1925-29 equalling 100) had fallen from the high level of 142 in 1931 to about 108 in 1936 with further reduction during the first half of 1937. Due to the rapid reduction in world stocks and the demand for raw materials in the principal industrial countries, a marked advance was recorded in wholesale prices.

The background for this betterment is well known. The alignment of currencies of which the Tripartite Agreement was the instrument, provided a new stability of economic conditions offsetting, until recently, the uncertainties of the political outlook. The marked expansion in the industrial countries and the increased purchasing power in the raw material areas have been the complements of each other.

Nevertheless, a number of disquieting developments were present at the close of the year. Some recession was doubtless inevitable from the recent rapid pace of increase when there were fears of shortage in primary commodities and speculative increases in prices which were obviously based on a rising demand. The sharp advance in international trade was largely a one-way traffic, which developed into a tendency for the industrial countries to slow down their imports. The contribution to recovery in countries producing primary materials was consequently curtailed. In the latter part of the year, production exceeded consumption in many commodities, notably copper, coffee and cotton. Commodity stocks which had

been reduced, in many cases, to normal levels, reversed the process in the third quarter. The consequent decline in commodity and security prices undoubtedly administered a severe check to the advance previously in progress.

The present deflation in commodity prices may obviate the one-sided development of international trade and restore the possibilities of mutual exchange. A constructive factor is the elastic credit situation in the leading financial countries, which is the result not only of greatly increased reserves but also of the measures taken to give greater flexibility to credit management. In several other respects, the situation is generally regarded as less vulnerable than in the years from 1928 to 1930. Economic and financial maladjustments and excesses are not so formidable, although the continuance of armed conflict on two continents makes for political unsettlement. Commodity prices are now at a lower level and appear on a sounder basis; the former gold-bloc countries are likely to display improvement even in the face of recessions elsewhere; whilst the banking situation is fortified by heavy liquid reserves mainly in the form of record holdings of government bonds.

Conditions in Canada

Productive operations as measured by the index of the physical volume of business were about 10 p.c. greater than in the first ten months of the preceding year. The newsprint, mining and power industries, which contributed so largely to the period of prosperity which culminated in 1929, reached new high records. The gain in the output of manufactured goods was 10 p.c. Construction activity also increased moderately but remained much below pre-depression levels. Unfortunately the volume of field crops, due to the drop in the central portion of the Prairie Provinces, was the lowest in post-war history, the value at \$556,400,000 declining 10 p.c.

The output of industries engaged in the production of producers goods recorded a gain of 14 p.c. over the same period of 1936. The extremely low level of operations in this group was one of the outstanding elements of the depression following 1929. The output in that year of producers goods, such as machinery, building materials, and railway equipment, was relatively in greater volume than the production of consumers goods, a relationship which has not been restored even in the comparatively prosperous period of the past two years. The full restoration of this condition will depend on the growth of that intangible element "confidence".

Agriculture.—Aside from the south-central portion of the Prairies, improvement in the physical condition of Canadian agriculture continued during the year just ended. Crops in the Maritimes and Quebec were smaller than in the preceding year but Manitoba, Alberta, British Columbia, and Ontario were favoured with a larger output.

The cattle quota to the United States was filled at an earlier date than in 1936, and prices were considerably better. Some liquidation took place as a result of drought conditions in Alberta and Saskatchewan. The first half of 1937 was not a profitable period for live-stock producers in Ontario and western Canada, due to scarcity of feed and consequent high

prices. This situation was improved after the middle of the year by declining costs for feed and rising live-stock prices. Dairy production was well maintained, the factory cheese output, being 10 p.c. greater than in the first ten months of 1936; this more than offset the decline in creamery butter. In the first eight months of 1937 the prices of farm products were above parity with non-agricultural prices for the first time since 1929.

Mineral Production.—As the demand for base metals was greatly influenced by speculative considerations, Canada's producers in this line operated under favourable circumstances in the first half of the year. Later it was found that the expansion in production was more than sufficient to provide for actual or current requirements and a reaction occurred in the prices of copper, lead and zinc.

Canada's output of gold was more than double that of eight years ago, amounting to 3,017,300 ounces in the first nine months, an increase of 9.9 p.c. over the preceding year. An index of the volume of mineral production based on nine factors recorded a gain of 16 p.c. over the first ten months of 1936.

Forestry.—Operations in the forestry group of industries were greatly expanded in the year just ended. The production of newsprint reached a new high point in history, having been not far from the practical limit of capacity during the first ten months. Some accumulation of stocks was noted in the third quarter, a natural development in view of the rise in the contract price scheduled for the present year. The placing of operations on a five-day week tended to correct this development. The export of planks and boards at 1.6 billion feet was 13.3 p.c. greater than in the preceding year. The forestry industry is one of the largest employers of labour and it is gratifying to know that working forces in logging operations showed a gain of 37 p.c., while lumber and paper industries recorded advances of 12.5 p.c. and 10.9 p.c., respectively, over the first eleven months of 1936.

Manufacturing.—Manufacturing operations gathered momentum, the output having been 2.3 p.c. greater than that of the same period of 1929. The gain over the preceding year was 10 p.c., indicating the extensive nature of the recovery. Employment in manufacturing plants recorded improvement, the returns from the principal firms registering an average increase of 6.5 p.c. over 1936. The exports* of manufactured and semi-manufactured goods at \$680,800,000 in the fiscal year ended March, 1937, showed a gain of 16.3 p.c. over the preceding year.

Construction.—Building operations were more active than in 1936 but pre-depression levels were far from equalled. Residential and industrial construction showed marked percentage gains while business building was less active. Building permits showed an increase of 35 p.c., while construction contracts awarded were 39 p.c. greater.

Power.—The power made available in Canada for ordinary use, computed by deducting the sum of exports to the United States and the amount supplied for use in electric boilers, was 15.2 billion kilowatt hours, a gain of 9.2 p.c. over 13.9 billion made available in the same period one year ago.



Design for Canadian Pavilion at the Empire Exhibition, Glasgow, 1938.

Courtesy, Publicity Division, Dept. of T. & C.

External Trade.—A substantial advance in external trade was one of the constructive developments of the year. Total exports of merchandise were \$928,000,000 in the first ten months against \$806,000,000 in the preceding year, an increase of \$122,000,000 or 15.2 p.c. A gain of 30.8 p.c. was shown in imports, the total in the ten months ended October having been \$675,000,000. Owing to the high level of exports, the balance of trade was very largely in Canada's favour.

Canadian trade with the United Kingdom showed further acceleration during the year. Despite a falling off in the export of grains due to smaller crops, products valued at \$323,000,000 entered the British market in the first ten months of 1937, the greatest value for any like period since 1928. Imports from the United Kingdom were nearly restored to the levels of 1930. The active balance of trade was about \$200,000,000 in the ten-month period, facilitating payment of interest obligations to British investors.

With the United States, the total Canadian trade was over \$820,000,000 in the same period of 1937, representing an increase of more than \$190,000,000. Due to the larger increase in imports, the balance of trade with the United States in Canada's favour was reduced from the levels of 1936. Exports were nearly \$411,000,000 against \$329,000,000, while imports rose over \$108,000,000 to \$409,000,000.

A heavy balance of visible and invisible exports over imports has been a characteristic of the Canadian economy in recent years, although the decline in outward shipments of grain reduced the active balance during the first ten months of 1937. • These surplus exports, chiefly in commodity trade and expenditures of visiting tourists, which have grown rapidly in the past two years, represent a corresponding outflow of capital. This has been mainly for the redemption of bond issues and for repurchases of Canadian securities and, as a consequence, the outlook is for an important reduction in external service payments.

Canada is by nature a mercantile country. Able to pour into the channels of commerce an increasing flow of raw and manufactured products, the Dominion must look to the outside world for markets in order to foster the profitable development of its natural resources and the growth of industries based thereon. Moreover, in order to maintain the standard of living, Canada must seek in all quarters of the globe a wide range of commodities which are either lacking here or may be produced only at abnormal cost.

CHAPTER I

THE TRANS-CANADA AIRWAY AND ITS RELATIONSHIP TO THE WORLD'S AIRWAY SYSTEM

The past decade has witnessed the creation of a world-wide system of communications by air. European air lines cover that continent with a network connecting all the principal centres and stretching out to the farthest confines of Africa, Asia, and Australasia. In North America, the United States airway system provides a similar network and has been extended to give rapid means of transportation to all points in Central and South America. The Pacific ocean has been spanned and South America connected with Europe. The only major trade route not regularly served by aircraft is the North Atlantic, but trial flights by British and United States aircraft are now proceeding and the establishment of a regular service for mails, passengers, and express will not be long delayed.

Canada's northern position in the Western Hemisphere is of the greatest importance. The shortest airways between North America and both Europe and Asia pass over her territory and her co-operation is necessary for their efficient development. Canada is directly interested in three of the principal airways in the world system—the Trans-Canada airway, the Trans-Atlantic airway and the northern route to Asia. It may be asked why the organization of these three routes has been delayed. The answer in each case is simple. Construction of the Trans-Canada airway has been retarded for financial reasons and because Canadian aviation was pre-occupied with the development of northern Canada—a task of greater national importance than the inauguration of inter-city services in the Dominion. The transatlantic service, because of climatic and physical difficulties, is the stiffest problem of the world's airway system, but aeronautical science is now producing aircraft of the range and speed necessary to master its many obstacles. In the case of the northern route to Asia, unsettled political conditions in the Orient have made impossible any progress in its development.

To view Canada's air problem in proper perspective, it is necessary to consider the world development of civil aviation since the close of the Great War. At the outbreak of war in 1914, aviation was still in the experimental stage. Aircraft could be used for reconnaissance, however, and the air arm was rapidly extended during the War. All nations spent vast sums on their air forces and remarkable progress was made in the construction of aircraft. After the Armistice, the combatants were left with a huge aviation machine idle on their hands, with no outlet for its use in peace. It was as if the first thirty years of development of the motor car had been devoted entirely towards building tanks and armoured cars—as if no passenger cars or commercial vehicles had been designed and no highways or service stations built for their use. Many nations felt the necessity of developing a peacetime aviation, not only for the advantage it would bring in faster communication, but as a reserve for military needs. In most countries, and certainly in all European countries, the

sole available outlet was through inter-city air services for the rapid transportation of mails, passengers, and express. Such services were, in those early days (and to a large extent, still are) far from being self-supporting and their operation has been possible only by generous subsidies.

Conditions in Canada were very different. The Dominion was fortunate in having a fertile field for the development of a self-sustaining civil aviation in the vast hinterland north of the railways, where aircraft could play an important part in exploration, survey, and transportation. Before the advent of the aeroplane, the development of the resources of northern Canada was not possible because of the lack of efficient transport. This vast area contains some of the great river systems of the world and innumerable lakes. These provide ready-made landing grounds for seaplanes in summer and skiplanes in winter, so that no expensive aerodrome system is necessary. It was to this field that the efforts of Canadian aviation turned after the Armistice, and for ten years inter-city services were allowed to await the growth of public opinion and the progress of aeronautical science in the development of aircraft suitable for such traffic.



A New Trans-Canada Plane.—Several planes of this type have been ordered for the Trans-Canada Service.

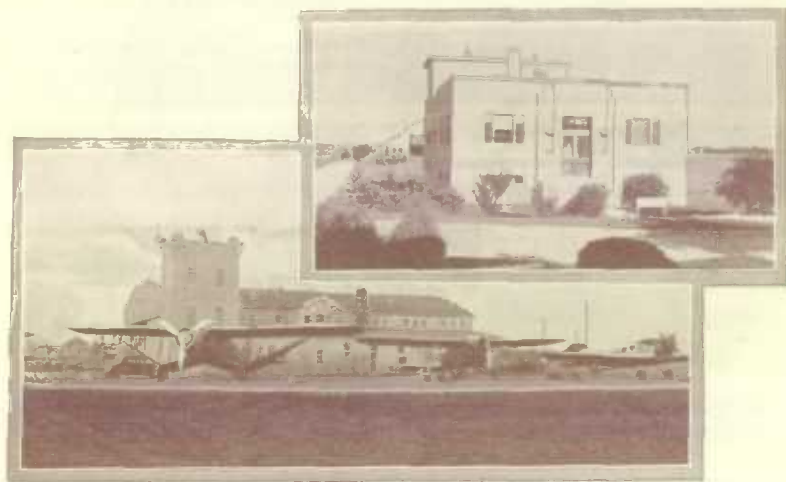
Courtesy, Canadian National Railways.

In 1928, Canada began to feel the effects of the building of the airway system of the United States. Connections with it had been established in the Maritime Provinces, at Montreal, Toronto, Windsor, Winnipeg, and Vancouver. At these points of contact, high speed traffic passing through Canadian channels was diverted south to the airway system of the United States, with consequent loss to Canada. Watching the trend of the times, the Canadian Government decided that surveys for the construction of a transcontinental airway serving the principal centres of industry and commerce could no longer be delayed.

The Trans-Canada Airway

Airway Facilities.—The term "airway" may be defined as the path of flight between two terminal airports on which have been installed permanent aids to air navigation. The nature of these aids to air navigation varies with the type of service required. For instance, the aids to air

navigation required on a transoceanic service differ materially from those required on a transcontinental system. Essential to both, however, are efficient weather and radio services. In North America a standard system of aids to air navigation has gradually been evolved. This is being closely adhered to in the construction and equipment of the Trans-Canada airway. Terminal airports, i.e., those where regular stops are made, should be all-way and all-weather fields, or should have three or more hard-surfaced runways, at least 3,000 feet in length, fully lighted with electric airway beacons, floodlights, boundary lighting systems to define the runways, range and approach lights to indicate the path of flight to the paved landing strips, and obstruction lights to define obstacles that might interfere with the clear approach to the airport. At a distance of about three miles there should be a radio-beam station, by means of which the pilot is guided along the airway and brought directly over the airport at the proper altitude for landing.

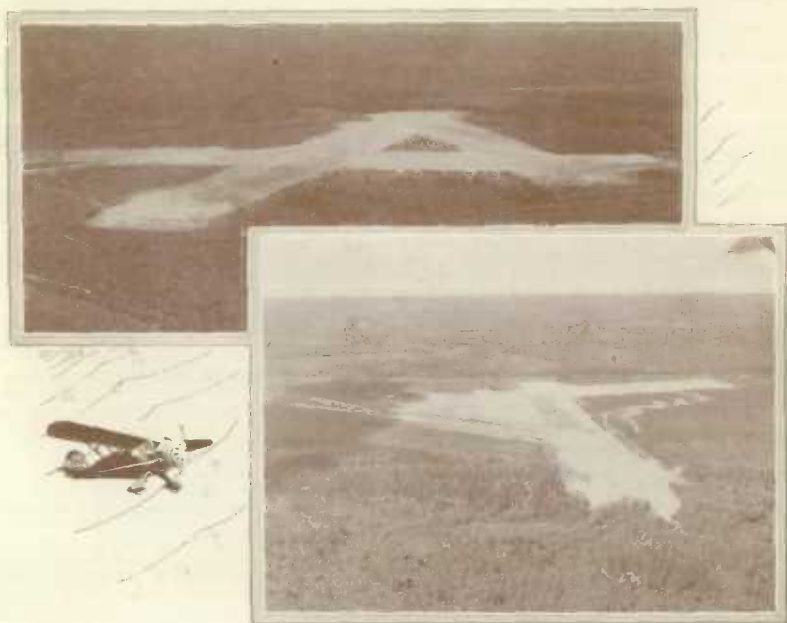


Edmonton Airport showing Commercial Aircraft in front of the Hangar ready to start for the North Country. Inset: Airways' Building at Vancouver Airport, constructed by the Department of Transport. Ottawa, to accommodate radio and meteorological services.

Courtesy, Civil Aviation Branch, Department of Transport.

A meteorological service is essential on every main airport. Such airports are in communication by teletype and radio with all weather-reporting stations in the district and with the Central Meteorological Bureau. From these sources general forecasts on weather which may be expected in the district are received four times daily. By study of the weather reports the local weather observer is in a position to give pilots leaving or approaching the airport information as to the weather which may be expected during flight. By means of two-way radio, aeroplanes in flight are given, every thirty minutes, the latest information on the weather, are controlled during their flight, given full information as to other aeroplanes flying in their vicinity, and advised when to land.

The first airways consisted of a chain of lighted intermediate landing fields spaced at intervals of from fifteen to forty miles apart along the path of flight between two terminal aerodromes. "Contact" flying was the rule and radio aids were non-existent. Of recent years the radio-beam system has become of paramount importance and with the introduction of multi-engined aircraft and high-altitude flight, the intermediate landing field has become relatively less important. Present practice requires radio-beam and two-way communication stations along the airway at intervals of about 100 miles between the terminal airports. Adjacent to these and directly in the path of flight secondary aerodromes are constructed. These are not necessarily stopping points but they afford a safe



Typical Trans-Canada Landing Fields in Unsettled Country between Airports.

Courtesy, Civil Aviation Branch, Department of Transport.

landing in case of need. They usually consist of two or three landing strips to serve the different directions of wind, at least 3,000 feet long and 500 feet wide, with clear approaches. A paved runway 150 feet wide is laid down the centre of the landing strip. These fields are lighted with boundary, approach and obstruction lights, as are the major terminals, and a meteorological observer is stationed at the aerodrome. The number of such additional intermediate aerodromes considered necessary for safety varies with the type of country. In open, settled, farm lands, where there are no mountains and where the weather is normally fine, they may be dispensed with altogether or spaced at intervals of about fifty miles between the major airports. Owing to the nature of the climate

and the difficult physical character of the terrain in the Rocky Mountain region and northern Ontario, where there are absolutely no alternative emergency landing places, the spacing averages about thirty miles.

These aerodromes are built to suit natural conditions. In the mountains a one-way strip may suffice. This is usually 500 or 600 feet wide. In the forested areas of northern Ontario, one, two or three strips approximately 3,000 feet by 500 feet have been cleared and graded to provide a safe emergency landing. These aerodromes are usually lighted for night flying but do not require radio or weather services.

Major Divisions of the Trans-Canada Airway.—Natural conditions divide the Trans-Canada airway into four distinct regions—the Mountain region, from the Pacific coast to the foothills in Alberta; the Prairie region, stretching from the foothills to the Ontario boundary; the Laurentian area, extending through western Ontario as far as the Ottawa valley; and the Atlantic section, which takes in the settled areas in the basin of the Great Lakes, the Eastern Townships of Quebec, and the Maritimes.

The Prairie region obviously presented the simplest construction and operating problems. There, precipitation is light, visibility normally good, contour changes are gradual, and aerodrome sites requiring little development were obtainable everywhere. The prairie cities, too, were active in airport construction and good terminals were coming into being at Winnipeg, Regina, Moose Jaw, Medicine Hat, Lethbridge, Calgary, Edmonton, Saskatoon, and North Battleford. Many of the smaller communities had offered to supply, free of cost to the Government, suitable sites for intermediate aerodromes.

Airway surveys commenced on the prairie section in the summer of 1928, and aerodrome construction and lighting installation followed. By the end of 1929, a chain of lighted aerodromes from Winnipeg to Edmonton via Regina and Calgary had been prepared and a contract for the carriage of mails had been let to Canadian Airways by the Post Office Department. Actual flying operations started on Mar. 1, 1930, with the operation of a nightly service each way. Five radio-beam stations, constructed in 1931, increased the efficiency of the airway materially. This service continued in regular operation with satisfactory results till Mar. 31, 1932, when, for reasons of economy in all services, it was temporarily suspended. Valuable experience in the survey and construction of the airway and its operation had been gained, however. It had proved that a regular service at all seasons of the year in Canada was possible, in spite of climatic difficulties. Traffic had grown steadily and gave promise that, if the airway could be completed from coast to coast, the venture would be self-sustaining. Although the operation of the trans-prairie service was stopped, the airway surveys then in hand in the mountains and in northern Ontario, Quebec and the Maritime Provinces were continued with a view to the eventual completion of the system from coast to coast.

In 1933, the urgent need for providing work for single homeless men led to the adoption of a scheme whereby such men could be cared for and given suitable employment on airway construction and other similar work. The location of intermediate aerodromes in the Mountain region and across northern Ontario had by that time been completed; this

enabled camps to be established and construction work put in hand at many points on the airway that autumn. Effort was intensified in 1934 and 1935; the necessity for employing hand labour and the lack of suitable construction machinery, however, made much of the work uneconomical. On June 30, 1936, the unemployment relief camps were closed and the Civil Aviation Branch continued construction work by day labour and contract. Since then the employment of machinery has made for faster progress and more economical development.

Preliminary development on practically all aerodromes west of Montreal is now completed and while further construction work is required on some of the key airports to bring them up to the high standard of construction required, the route may now be flown safely in daylight hours. The installation of the radio-beam and two-way radio systems is proceeding as quickly as deliveries from the manufacturers can be obtained. The airway lighting program is also well in hand.

Regular operations from Vancouver to Winnipeg—the western half of the airway—are now possible, and, if there is no undue delay in delivery of the airway equipment and aircraft required, the airway should be in shape for regular operation at all seasons of the year, both night and day, from Vancouver to Montreal by midsummer, 1938. The Atlantic section, east of Montreal, is not so far advanced but by the close of another construction season this too should be ready for regular operation.

An Act creating a national operating company—Trans-Canada Air Lines—for the operation of the Trans-Canada system was passed by Parliament in 1937, and this corporation has now been organized and is beginning to function. Time is required to build up such an organization but already it is operating the Seattle-Vancouver air mail service and using this service as a training ground. As aircraft now on order are delivered, Trans-Canada Air Lines will extend its operations until they include the whole system from coast to coast.

The increase in landing speed and the introduction of night and all-weather flying necessitate larger airports, with longer clear approaches and improved surfaces. Airports which were adequate five years ago no longer suffice. The Department of Transport is co-operating with the municipal authorities in all parts of the country to provide air terminals of the required standard and is giving generous assistance for this purpose. Grants have already been made to Vancouver, Lethbridge, Edmonton, Regina, Winnipeg, and Toronto and agreements are now under consideration with several other municipalities for similar co-operation so that first-rate airports may be available at all the principal traffic centres.

When the various construction programs now in hand are completed, Canada will have a transcontinental airway system equal to any in the world. It will serve all the principal industrial centres in the Dominion and its effect on the social, political and commercial life of the Dominion will be very marked. Vancouver and all the prairie cities will be reached overnight from Montreal and Toronto. To the Maritime Provinces will be an afternoon or evening flight from Ottawa. Trade and intercourse between Eastern, Central, and Western Canada will be greatly facilitated and another tie binding closer the scattered provinces of Canada will have been brought into being.

THE TRANS-CANADA AIRWAY AND ITS RELATIONSHIP
TO THE BRITISH EMPIRE AND UNITED
STATES AIRWAY SYSTEMS



The map of the World on the zenithal projection illustrates the relation of Canada to the world's airway system and shows her advantageous position clearly. On a map of this scale it is not possible to show the system in more than skeleton form and even major lines are not all shown.

The connection of Canada's transcontinental airway with the shortest route across the Atlantic is shown on the third map; and Trans-Canada Air Lines, the national operating company, will be a direct participant in the transatlantic operation. Through efficient north and south connections in the Maritime Provinces, at Montreal, Toronto, Windsor, Winnipeg, Lethbridge, and Vancouver, the system will give ready access to southbound traffic over the United States system and the airways to Central and South America. Air commerce for North America from the European, African, Asian, and Australasian systems will pass by the direct route across the Atlantic, through Canadian terminals, and thence to all points in Canada and, in addition, to points in southern, central, and western United States. Through a system of feeder lines, it will serve the few important cities not now on the main line and also connect with the immense traffic now handled by existing services to the northern mining areas, which are to-day the greatest non-subsidized air traffic systems in the world. Through its connections on the Pacific coast, it has access to the existing transpacific service to eastern Asia and New Zealand and already the North American section of the direct airway of the future to the Far East is well established. With these advantages, a bright future seems assured to Trans-Canada Air Lines.

The Trans-Atlantic Airway

The Trans-Canada airway is not only of domestic importance to Canada, but is of international significance as a link between the Trans-Atlantic airway and the direct northern route to Asia of the future.

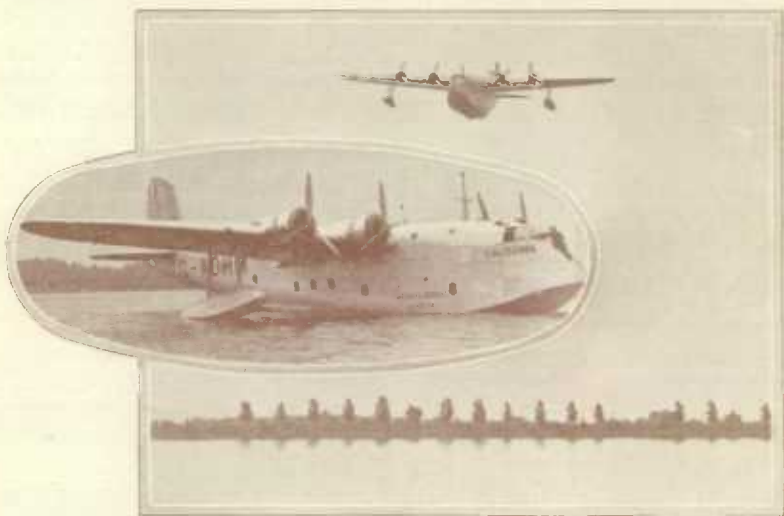
The North Atlantic trade route is perhaps the most important in the world. It joins the greatest centres of population and industry of the Old and New Worlds. This trade route is now served by the most highly efficient transport and communication systems in the world and here, if anywhere, is to be found traffic of sufficient value and quantity to justify the establishment of a commercial air service. The great circle track, or shortest route joining these two great industrial districts, passes down the Rhine Valley, through northern France and Belgium, London, northern Ireland, the Straits of Belle Isle, Montreal, the valley of the St. Lawrence and thence to the Mississippi basin. The eastern and western terminals of the direct Trans-Atlantic airway lie in the British Commonwealth and from the earliest days of aviation the Canadian Government has watched its development with growing interest.

Even before the War, in the summer of 1914, plans for a transatlantic flight were being perfected by Lieutenant John Porte, R.N. Immediately after the War the long series of transatlantic flights began, with the first direct crossing by Alcock and Brown in 1919. The first airship flight over this route was made in September, 1919, by Scott in H.M. Airship "R 33". It was repeated when "R 100" visited this country in the summer of 1930. The length of the ocean crossing and the climatic difficulties have delayed the establishment of any regular service by this route, but, with the advance of aeronautical and radio science and improved meteorological services, these are being conquered.

The difficulties of the direct route have brought into consideration two alternatives, known, respectively, as the Arctic and the Southern routes. The former, also over Canadian territory, has the advantage that it avoids the long ocean crossing by using a series of bases in northern Quebec (or Labrador), Baffinland, Greenland, Iceland, and the Faroe Islands to Scotland or Norway. The maximum flight between such bases does not exceed 500 miles, which is well within the capabilities of aircraft now in use. This obvious advantage has caused expeditions by Canadian, United States, British, German, and Italian interests to explore its possibilities. The drawbacks are the severe climate; the shortness of the summer season; the inaccessibility, during many months of the year, of some of the bases; and the short duration of daylight in the Arctic during the winter months. Moreover, the route does not provide a really short route between the main centres of population and industry, such as Montreal, Toronto, and New York on this continent, and London, Paris, and Berlin in Europe, though admittedly it gives a direct route between San Francisco, Edmonton, or Vancouver, and points in Scandinavia or Russia. The Southern route is not of direct interest to Canada. It passes from the eastern coast of the United States to Bermuda, thence by a long flight of 2,200 miles to the Azores and thence to Lisbon. The climate is preferable to the more northerly routes, but its greater length is a handicap and will necessarily mean higher maintenance and operating costs; the Azores, moreover, do not provide a satisfactory seaplane base.

As a first step towards the development of the direct route, a combined air and steamer mail service has been operated between Rimouski and Montreal since 1927. This was extended to the Straits of Belle Isle, Montreal, and Ottawa during the Imperial Conference in Ottawa in 1932. By means of this service, one-third of the total journey from Montreal to London was made by air and, by using aircraft then in common use and the ordinary steamers on the route, a four-day mail service from London to Ottawa resulted. With the advent of aircraft capable of flying regularly between Ireland and Newfoundland, the usefulness of this ship-to-shore service will cease.

An agreement for co-operation in the establishment of a transatlantic air service by the Governments of Canada, the United Kingdom, the Irish Free State, and Newfoundland was reached by representatives of these Governments in Ottawa in December, 1935. Such an airway is of vital importance to the United States and for many years their aviation staffs have explored its possibilities. Since the friendly co-operation of United States interests, rather than the institution of a rival service, was highly desirable, at the close of the Ottawa Conference in December, 1935, the representatives of the Commonwealth Governments proceeded to Washington and an agreement was reached with representatives of the United States Government for their co-operation in the institution of a regular transatlantic air mail, passenger, and express service. The practical results of these two conferences are the trial flights which have been made by



The *Caledonia*, Imperial Airways' long-range flying-boat, which, with Clipper III of the Pan American Airways, pioneered the experimental phase of the North Atlantic Commercial Airway Route. The picture shows the *Caledonia* as she appeared high in the air near Montreal on July 8, 1937. Inset: A view of the *Caledonia* at rest. The relative size of the officer on the nose of the machine gives an idea of the proportions of the ship which weighs 22½ tons when fully loaded, is powered with four engines each developing 900 h.p., and has a maximum speed of 200 m.p.h.

Courtesy, Canadian Official News Bureau, London, England, and Trans-Canada Air Lines.

aircraft of Imperial Airways and Pan American Airways during the past summer. The uninterrupted success of these trial flights and their regularity inspire confidence that, in a relatively short time, commercial transatlantic services will be in operation.

Canada's share in the trial flights has been confined so far to the provision of seaplane bases, meteorological and radio services in Canada and, as regards the two services last named, in Newfoundland as well. The actual trial flights have been made by Imperial and Pan American Airways. Under the Ottawa Agreement, when the trial flights justify the establishment of a regular service, a joint operating company will be formed by Imperial Airways, Trans-Canada Air Lines and a company nominated by the Irish Free State for the permanent operation of the route. Negotiations are now proceeding between the three companies for the establishment at an early date of such a joint operating company.

The Trans-Pacific Airway

The Pacific crossing is not of the same urgency or importance as the Atlantic crossing and has not received the same attention from Canada. A regular weekly air mail, passenger, and express service has now been operated from San Francisco to Manila via Honolulu by Pan American Airways for over a year. The most direct route to the Orient is, however, by northwestern Canada and Alaska, across the Bering Strait to Siberia. Unsettled political conditions in northeastern Asia have, up to the present, made its development impossible, but the extension of European air lines to the Far East will greatly affect North American lines of communication and will, before long, force this route into prominence for the protection of Canadian and American interests in transpacific commerce.

An alternative coastal route from Seattle and Vancouver northwards along the British Columbian and Alaskan coasts, by the Aleutian and Kurile islands direct to Tokyo has been considered. This route, however, is a very difficult one owing to the adverse climate; the prevalence of rain, fog and storms makes flying on schedule almost impossible and it is felt that the route east of the mountain barrier which parallels the Pacific coast provides a safer and more dependable passage.

In June, 1937, the Canadian Government let a contract for a weekly air mail service between Edmonton and Whitehorse, Y.T. This gives rapid communication to Yukon and Alaska. Edmonton is on the Trans-Canada airway and Whitehorse is already connected with the airway system of Alaska, reaching as far as Nome on the shores of Bering Strait. The whole North American section of the northern route to Asia is, therefore, already under regular operation. It only requires further aids to air navigation to make it capable of high speed operation at all seasons of the year. When settled political conditions prevail once more in eastern Asia, this route will come rapidly into prominence, as it is much shorter than the Honolulu route and has not the disadvantage of the long, uneconomical ocean flights.

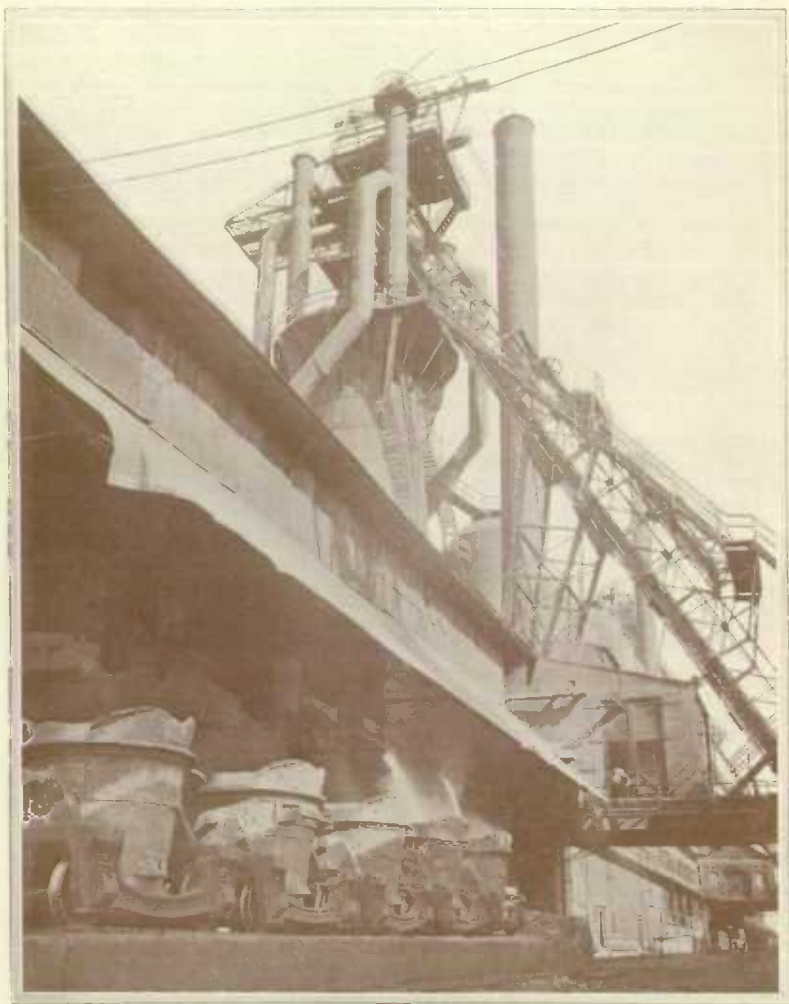
Canada's railways, her steamship services on the Atlantic and Pacific, telegraph and telephone services and radio have a world-wide reputation for high standards of service. They have all been pioneered by Canadians and Canadians can be depended upon to duplicate the same leadership in the air.

CHAPTER II

WEALTH, PRODUCTION AND INCOME— CAPITAL INVESTMENTS

National Wealth

The economic concept of national wealth is concrete since economics is not able to take cognizance of the immense field of intangible wealth created by churches, schools and other institutions, nor of such things as



Molten Iron being Tapped from the Blast Furnaces into Ladles, to be later
Converted into Steel in the Open Hearth Furnaces.

Courtesy, Algoma Steel Corporation, Limited, Sault Ste. Marie.

climate, location, health, etc., which are often referred to as wealth, but in a different sense from that meant here. The definition includes all our farms, factories, equipment, merchandise in stock, real estate, roads, highways, developed resources and the thousand and one material things which we as a nation possess.

Great difficulty arises when we try to reduce all the things which go to make up this wealth to a common denominator for statistical purposes. National wealth must always be expressed in terms of the national currency. Yet the purchasing power of the currency unit is always fluctuating and, since 1929, had at one point increased by more than 50 p.c. (February 1933) in terms of wholesale prices. For 1930, the average index of wholesale prices was down by nearly 10 p.c. from 1929, while in December of 1930 the index was 19 p.c. lower than in December of 1929. The index continued to decline until February, 1933—the lowest point of the depression, though there has been definite improvement since then.



A Flour Mill and Grain Elevator in the Keewatin District of Ontario.

Courtesy, Royal Canadian Air Force.

The effect of such drastic reductions in prices is first felt by the commodities which are being currently produced. Ultimately a persistent decline affects capital values of real estate, buildings, machinery, etc., and its influence is felt in a reduction in the value of national wealth.

The first official estimate issued by the Dominion Bureau of Statistics was for 1921, being based on the census data collected in that year. It placed the national wealth at \$22,195,000,000. Later estimates were \$25,673,000,000 for 1925 and \$27,668,000,000 for 1927. The estimate for 1929 was \$31,276,000,000, and the 1933 estimate \$25,768,000,000. The former presents a picture at the peak of domestic prosperity, whereas that of 1933 reflects the writing down of values resulting from the depression. Until values have become stabilized on a post-depression basis, it is not expected that another estimate will be made.

The following table shows the national wealth of Canada, by items, as in 1933.

Estimate of the National Wealth of Canada as in 1933

Classification of Wealth	Aggregate Amount	Percentage of Total	Average Amount per Head of Population
	\$	p.c.	\$
Agricultural wealth (farm values and agricultural products in possession).....	5,563,790,000	21.59	520.90
Mines (capital employed).....	800,292,000	3.10	74.93
Forests (estimated value of accessible raw materials, pulpwood and capital invested in woods operations) ..	2,090,821,000	8.11	195.75
Fisheries (capital invested in boats, gear, etc., in primary operations).....	25,380,000	0.10	2.38
Central electric stations (capital invested in equipment, materials, etc.).....	1,309,801,000	5.08	122.63
Manufactures (machinery and tools, and estimate for capital in rural lands and buildings) ¹	949,721,000	3.69	89.92
Manufactures (materials on hand and stocks in process) ¹	368,070,000	1.43	34.46
Construction, custom and repair (estimated investment in machinery and tools and materials on hand)	32,385,000	0.13	3.03
Trading establishments (estimated value of furniture, fixtures, delivery equipment and materials on hand)	708,043,000	2.75	66.29
Steam railways (investment in road and equipment) ..	3,365,464,000	13.06	315.09
Electric railways (investment in road and equipment) ..	223,704,000	0.87	20.94
Telephones (cost of property and equipment).....	330,491,000	1.28	30.94
Urban real property (assessed valuations and exempted property and estimate for under-valuation by assessors and for roads, sewers, etc.).....	6,913,530,000	26.83	647.27
Canals (amount expended on construction to Mar. 31, 1934).....	267,671,000	1.04	25.06
Harbours (approximate amount expended to Mar. 31, 1934).....	502,264,000	1.95	47.02
Shipping (including aircraft).....	135,506,000	0.53	12.89
Automobiles (estimate of the value of automobiles registered).....	392,211,000	1.52	36.72
Highways, etc.....	689,333,000	2.68	64.54
Household furnishings, clothing, etc. (value estimated from production and trade statistics).....	913,397,000	3.54	85.52
Specie, coin and other currency held by the Government, chartered banks and the general public.....	186,362,000	0.72	17.45
Totals	25,768,236,000	100.00	2,412.53

¹ Duplication excluded.

Aggregate and Per Capita Wealth by Individual Provinces, 1933.—

As regards the provincial distribution of wealth in 1933, Ontario ranked first with an estimated aggregate wealth of \$8,796,000,000 or 34.14 p.c. of the total; Quebec second with \$6,738,000,000 or 26.15 p.c.; Saskatchewan third with \$2,527,000,000 or 9.81 p.c.; and British Columbia fourth with \$2,431,000,000 or 9.43 p.c. of the whole. While Ontario and Quebec led in absolute wealth, the western provinces came first in per capita wealth. British Columbia held first rank with a per capita wealth of \$3,414, Alberta second with \$2,689, and Saskatchewan third with \$2,657.

Production

Under the term "production" are usually included the activities of agriculture, fishing, mining, forestry, trapping, power development, manufactures and construction. This does not imply that many other activities such as transportation, merchandising, personal and professional services are not also "productive" in a broad economic sense. It is customary, however, to regard the processes involved in the creation of materials or

their making over into new forms as constituting "production" in a special sense. Of this a bird's-eye view is given in the table on p. 24, which shows the gross and net value of production in each of the divisions of industry above mentioned. In a second table on p. 25, a summary of the value of total production in Canada is given by provinces.

A distinction is made between *gross* and *net* production. By net production is meant the value left in the producer's hands after the elimination of the value of the materials, fuel and purchased electricity consumed in the process of production. This net figure is a much better criterion for measuring the value of an industry than the gross.



An Apple-Packing Plant in British Columbia.

Courtesy, Canadian Government Motion Picture Bureau.

After recording successive declines for five years, the net value of production turned upward in 1934 to register a substantial gain over the preceding year. This advance was continued in 1935 when the net value of commodities produced, as estimated by the Dominion Bureau of Statistics on the basis of data compiled by its various branches, was \$2,395,000,000 compared with a revised estimate of \$2,234,000,000 for 1934. The gain of over 7 p.c. represents the marked betterment in productive operations over the preceding year. Each of the nine main branches of production participated in the advances of 1934 and 1935. The greatest absolute gains were recorded in manufacturing and agriculture, but the largest percentage increases were in mining and forestry. Primary production showed a better percentage gain than secondary, indicating a decided revival in the production of raw materials.

Mining continues to be the most progressive of Canadian industries and has extended year by year the upturn commenced in 1933.

While certain changes in method prevent exact comparability with previous years, the net output of agriculture in 1935 was greater than in any other year after 1930. The increase over 1934 was \$30,600,000 or 5.2 p.c., the total reaching \$623,000,000.

The percentage gain in the value of manufacturing was on a par with that in agriculture, the net total advancing 5.7 p.c. or \$69,300,000 over the comparable figure for 1934. Manufacturing continued to be the predominant factor in Canadian production, having assumed a definite precedence over agriculture in net value since 1925. Agricultural production in 1935 represented 26 p.c. of the net output of all branches of industry while the corresponding figure for manufactures, after eliminating duplication, was nearly 40 p.c.

Price and volume indexes indicate that a decided further gain in net production occurred in 1936. The index of wholesale prices averaged 3.3 p.c. higher than in the preceding year, and the gain in the index of industrial production was 10.4 p.c. In the same period, the index of general employment recorded an advance of 4.3 p.c. The increases in these indexes indicate a general betterment of at least 10 p.c. over 1935.

Summary, by Industries, of the Value of Production in Canada, 1934 and 1935

NOTE.—The figures given in this table are subject to minor technical qualifications which, however, do not influence their value for general use. The interested reader is referred for details to the footnotes to p. 214 of the *Canada Year Book, 1937*.

Industry	1934		1935	
	Gross	Net	Gross	Net
	\$	\$	\$	\$
Agriculture.....	1,006,557,616	592,195,000	1,019,866,099	622,772,000
Forestry.....	313,659,309	208,207,484	344,758,018	227,500,346
Fisheries.....	45,661,143	34,022,323	45,386,749	34,427,854
Trapping.....	8,636,885	8,636,885	8,877,331	8,877,331
Mining.....	344,978,399	209,073,789	429,817,259	238,581,268
Electric power.....	124,463,613	122,461,993	127,177,954	125,123,078
Totals, Primary Production.....	1,843,657,025	1,174,597,474	1,975,883,500	1,257,281,877
Construction.....	186,198,890	115,406,755	215,548,873	120,815,289
Custom and repair.....	87,640,270	62,444,353	97,109,740	66,454,802
Manufactures.....	2,533,758,954	1,222,943,899	2,797,400,424	1,292,242,142
Totals, Secondary Production.....	2,807,604,114	1,400,795,007	3,110,059,037	1,479,512,233
Grand Totals¹.....	4,631,421,085	2,233,697,018	4,398,333,710	2,394,720,688

¹ Excluding duplication due to the figures for "Manufactures" containing items already included under primary production.

Relative Production by Provinces.—In 1935, Ontario continued to hold the lead among the nine provinces in the creation of new wealth, producing 43.7 p.c. of the Dominion total compared with 43.4 p.c. in 1934. Quebec followed with an output of 25.4 p.c. on the revised basis against 25.6 p.c. in the preceding year. British Columbia and Alberta were in third and fourth places with 7.8 p.c. and 6.5 p.c., respectively.

APPLE BLOSSOM TIME IN "ACADIE"



The Annapolis Valley, N.S., is known the world over for its apples. The annual Apple-Blossom Festival attracts great interest locally; the centre picture of the layout shows Queen Annapolis Valley V with her Attendants at the 1937 Festival. Above is a view of a fertile section of the famous Annapolis Valley.

Courtesy, Bureau of Information, Halifax, N.S.

HANDICRAFTS IN QUEBEC



Home handicrafts conducted on a commercial basis are more characteristic of Quebec than of other provinces. Reading downwards, the picture illustrates: (1) a French-Canadian family with their quaint spinning wheel and dog cart; (2) the making of hooked rugs and a display of finished work to catch the eyes of tourists; (3) bread-baking in an oven out-of-doors; and (4) basket weaving.

Courtesy, Canadian Government Motion Picture Bureau.

BEAUTY SPOTS IN EASTERN CANADA



Reading from left to right the layout shows: *Upper Row.* Cap des Rosiers, a village on the Gaspé Peninsula, P.Q.; Percé with the well-known Rock and, in the background, Bonaventure Island, P.Q.; and the Kildare Capes, Prince County, P. E. I. *Middle Row.* Beautiful Baddeck on the Bras d'Or Lakes, Cape Breton Island; Evangeline Park, Grand Pré, N.S.; and the lighthouse on Peggy's Point near the picturesque village of Peggy's Cove, N.S. *Lower Row.* The estuary of the Dartmouth River, P.Q.; evening on Pictou Harbour, N.S.; Brackley Beach, near Charlottetown, P.E.I.; and swarms of birds on the rock ledges of Bonaventure Island, Gaspé Peninsula, P.Q.

*Courtesy, Bureau of Information, Halifax, N.S.,
and Canadian Government Motion Picture Bureau*

Saskatchewan increased her contribution from 4.8 p.c. to 5.7 p.c. Manitoba, Nova Scotia, New Brunswick, and Prince Edward Island followed in the order named.

The per capita net commodity production of Ontario was nearly \$286 in 1935 compared with \$268 in 1934. British Columbia produced about \$250 for every citizen, while Alberta ranked third with a per capita figure of \$203. Quebec averaged \$198; Nova Scotia, \$160; Saskatchewan, \$146; Manitoba, \$144; New Brunswick, \$143; and Prince Edward Island, \$124.

Summary, by Provinces, of the Value of Production in Canada, 1934 and 1935

Province	1934		1935	
	Gross	Net ¹	Gross	Net ¹
	\$	\$	\$	\$
Prince Edward Island.....	17,864,849	10,181,232	19,052,646	11,059,670
Nova Scotia.....	131,399,711	76,628,789	144,918,904	84,186,607
New Brunswick.....	98,679,310	55,404,590	106,307,360	61,184,408
Quebec.....	1,058,503,197	572,339,409	1,137,261,900	607,222,088
Ontario.....	1,794,724,551	971,143,305	1,984,461,443	1,050,004,179
Manitoba.....	195,670,759	106,321,772	207,187,039	102,442,524
Saskatchewan.....	191,335,124	106,960,920	223,428,756	136,374,259
Alberta.....	255,549,707	162,784,863	250,995,852	155,098,958
British Columbia ²	287,693,877	171,932,118	324,718,910	187,087,995
Totals.....	4,031,421,885	2,233,697,918	4,398,333,710	2,394,720,688

¹ Gross value minus cost of materials, fuel and purchased electricity consumed in the production process. ² Including Yukon.

National Income

The exact measurement of the national income is, of course, an impossibility. There must always be a margin of error in estimates of this kind apart from the fact that, as in the case of national wealth (see p. 21), values have to be measured in dollars, whereas the fluctuations in the price level change the purchasing power of those same dollars from year to year. Moreover, non-money incomes are more common in Canada than in some older countries of the white man's world and in rural areas constitute a very important part of the total income of most families.

A partial total of national production is given in the general survey of production immediately preceding this section, but according to the Census of 1931, the workers engaged in the actual production of commodities were only five-eighths of the total gainfully occupied population. The other three-eighths of the workers may be considered equally as productive in the broad sense. Such a conclusion is verified by the large volume of statistics regarding distributive workers which is now available through the Census of Merchandising.

The total recorded estimated net production of commodities for 1935, as given on p. 24, is \$2,394,720,688. If five-eighths of the gainfully occupied of the nation may be said to produce a net product valued at \$2,394,720,688, then by taking eight-fifths of this we get the estimated total of \$3,831,553,000 as the value of production of all the gainfully occupied.

In order to arrive at an estimate of national income from these figures of total production, items such as depreciation of equipment engaged in production, the net balance of interest payments payable from outsiders to Canadians and from Canadians to outsiders, etc., must be considered.

Depreciation of capital equipment is offset by the consumption of materials on maintenance, which go into production but do not show as products thereof, and by the fact that no allowance has been made in the estimate of total production for the value of garden produce, poultry, etc., raised by householders,* for casual earnings, and for other means by which national income is increased.

The balance of interest and dividend payments due to outsiders is carefully estimated by the Bureau of Statistics each year. For 1935 the figure was \$219,000,000. Subtracting this from \$3,831,553,000, the 1935 income of the Canadian people may reasonably be placed at \$3,622,954,000, which compares with the revised figure of \$3,362,315,000, worked out on the same basis for 1934.

There are ways of estimating national income on other bases than that of production which has been employed here. The problem was approached from several other angles by the Bureau of Statistics for the year 1933 and it was found that the results checked very closely.

Incomes Assessed for Income War Tax in Canada.—In those countries of the world where an income tax has been established for a considerable time, the figures of the assessed income have been generally accepted as furnishing a guide both to the amount and to the distribution of the total national income by classes. Estimates of the national income, based upon income tax statistics, have been published, for example, in the United Kingdom and in the United States.

In Canada the income tax is a more recent innovation than in either of the above-mentioned countries; also, in a newer country, incomes are to a greater extent received in kind. Nevertheless, the data collected by the Income Tax Branch of the Department of National Revenue, are significant both with regard to the total income assessed and with regard to the distribution of that income among various classes of the population.

In the fiscal year ended 1936, individuals and corporations paid Dominion income tax on 1934 incomes aggregating \$1,133,440,034, so that for that year slightly less than one-third of the national income (estimated as \$3,614,147,000 in 1934) would appear to have been subject to income tax by Dominion authorities.

As regards the amount of income tax paid by various income groups, it is noteworthy that, in 1936, about 33 p.c. of the amount collected from individuals with classified incomes (\$33,057,550) was from those with incomes of \$50,000 or over (such individuals might be considered as in the millionaire class and numbered only 304 out of a total of 199,102 individual taxpayers). The percentage of the gross total receipts contributed by this class in 1935 was nearly 26 p.c. On the other hand, individuals with incomes under \$10,000, who numbered 192,654, or about 97 p.c. of total individual taxpayers in 1936, contributed 26 p.c. of the total for that year

* Such produce to the value of nearly \$19,000,000 was raised elsewhere than on farms in 1930, according to the Census of 1931.

as compared with 31 p.c. of the 1935 total. In the case of corporations, those with incomes of \$50,000 or over contributed by far the major part (over 84 p.c.) of the total gross receipts (\$42,933,281) from all corporations, but the number of such companies was a very much higher proportion of the total than in the case of individuals.

British and Foreign Capital Invested in Canada

In the opening decades of the century, the marked expansion in Canada was largely based on capital imported from the United Kingdom, at least \$1,500,000,000 being imported during 1900-12. During the War the latent capital resources of Canada itself were for the first time exploited on a large scale, nearly \$2,000,000,000 being raised by the Dominion Government. After the War the outstanding development was the growth of United States investments in Canada. This inflow of capital was not confined to capital coming through the sale of Canadian securities in New York. A substantial part of the flow was the capital invested directly in Canada by United States corporations. Some of this was for the establishment of new industrial enterprises and some was for the development of existing direct investments. These investments in Canada owned in the United States were estimated to have increased to \$4,298,000,000 in 1930. Since then there has been a decline in the value of these investments, the result of the redemption of securities owned in the United States, changes in the value of equities, etc. In comparison, the changes in the value of British investments in Canada are less marked since 1919.

Capital Invested in Canada by Other Countries

(In millions of dollars)

Country	1914 ¹	1919 ²	1926 ²	1930 ²	1935 ²	1936 ²
United Kingdom.....	2,712	2,607	2,598	2,766	2,729	2,725
United States.....	904	1,800	3,161	4,298	4,045	3,985
Other Countries.....	178	173	132	132	124	124
Totals.....	3,794	4,580	5,891	7,196	6,898	6,834

¹ Estimated by various authorities.

² Estimated by Dominion Bureau of Statistics.

In spite of this large external indebtedness, Canadian capital controls a very large proportion of the business capital of enterprises operating in Canada.

In considering these statistics of outside capital invested in Canada, it should also be borne in mind that Canada has large investments in other countries. The Bureau estimates that Canadian investments in other countries amounted to \$1,656,000,000 at the end of 1936. Of this, \$987,000,000 was invested in the United States, \$48,000,000 in the United Kingdom, and \$621,000,000 in countries other than these. This does not include the assets of Canadian insurance companies held abroad, as there are also liabilities abroad which must be considered in connection with these assets.

CHAPTER III

POPULATION—BIRTHS, DEATHS AND MARRIAGES

Population

The population of the earth is estimated at approximately 2,000,000,000.* The British Empire, which covers slightly less than one-quarter of the land area of the earth, has slightly less than one-quarter of the world's population. Canada, which occupies over one-quarter of the



Vancouver, Third Largest City in Canada, from the Harbour at Night.—Greater Vancouver has a population of 310,000 and is Canada's gateway to the Pacific.

area of the British Empire, has only about one forty-eighth of the Empire population. While there is no absolute standard for population density, so much depending on extent of resources, the rate of increase in productivity of land as a result of invention, etc., a certain minimum density is desirable and even necessary to effective social and political life. As far as Canada is concerned such a minimum effective density is far from having been attained in the country as a whole.

* The Statistical Year Book of the League of Nations, 1936-37, gives the population of the world as 2,095,000,000 not including estimates of certain populations, chiefly in Asia and Africa, where censuses are incomplete or do not exist.

Areas and Populations of the British Empire and its Principal Component Parts for 1931, or Nearest Year Available

(Source, *Canada Year Book*, 1934-35. The figures are subject to certain qualifications which, however, do not affect their usefulness in a broad way. For such qualifications, the interested reader is referred to the footnotes to p. 107 of the 1934-35 Year Book.)

Country	Area in Sq. Miles	Population, circa 1931
British Empire.....	13,318,000	492,621,046
United Kingdom of Great Britain and Northern Ireland.....	93,991	46,042,000
Irish Free State.....	28,601	2,957,000
Canada.....	3,694,900	10,376,786
Union of South Africa.....	471,917	8,132,600
Australia.....	2,974,581	6,629,839
New Zealand.....	103,415	1,442,746
Newfoundland and Labrador.....	275,134	281,549
India.....	1,805,252	351,399,880

Growth of the Canadian Population, 1871-1931.—The first census after Confederation (1871) saw the Dominion launched with a population of 3,689,257. After 1873, and until the end of the century, economic conditions within the Dominion were anything but buoyant. The Censuses of 1881, 1891 and 1901 reflected this state of affairs. That of 1881 showed a gain of 635,553 or 17·23 p.c., but in neither of the next two decades was this record equalled, the gains in each being under 550,000 or 12 p.c. At the end of the century the population of Canada had reached but 5½ millions, though expectation had set a figure very much higher.



A Settlement on Gaspé Peninsula.—Looking across Gaspé Basin, P.Q.

Courtesy, Canadian Government Motion Picture Bureau.

Statistics of Population in Canada, Census Years 1871 to 1931

Province or Territory	1871	1881	1891	1901	1911	1921	1931
Prince Edward Island	94,021	108,891	109,078	103,259	93,728	88,615	88,038
Nova Scotia	387,800	440,572	450,396	459,574	492,338	523,837	512,846
New Brunswick	285,594	321,233	321,263	331,120	351,889	387,876	408,219
Quebec	1,191,516	1,359,027	1,488,535	1,648,898	2,005,776	2,360,665 ¹	2,874,255
Ontario	1,620,851	1,926,922	2,114,321	2,182,947	2,527,292	2,933,662	3,431,683
Manitoba	25,228	62,260	152,506	255,211	461,394	610,118	700,139
Saskatchewan	—	—	—	91,279	492,432	757,510	921,785
Alberta	—	—	—	73,022	374,295	588,454	731,605
British Columbia	36,247	49,459	98,173	178,657	392,480	524,582	694,263
Yukon	—	—	—	27,219	8,512	4,157	4,230
N.W.T. ²	48,000	56,446	98,967	20,129	6,507	7,988	9,723
Canada	3,689,257	4,324,819	4,833,239	5,371,315	7,296,643	8,787,949³	10,376,796

¹ The decreases shown in the population of the Northwest Territories since 1891 are due to the separation therefrom of vast areas to form Alberta, Saskatchewan, and Yukon and to extend the boundaries of Quebec, Ontario, and Manitoba.

² Revised in accordance with the Labrador Award of the Privy Council, Mar. 1, 1927. ³ Includes 485 members of the Royal Canadian Navy

The general rate of population increase in Canada in the opening decade of the present century was 34 p.c., the greatest for that decade of any country in the world. In the second decade the rate was 22 p.c., again the greatest with the one exception of Australia, where growth was greater by a fraction of 1 p.c. A century earlier the United States grew 35 p.c. decade by decade until 1860, but with this exception there has been no recorded example of more rapid population growth than that of Canada in the twentieth century. In 1871, only 2.97 p.c. of the population dwelt west of the Lake of the Woods. In 1921 the proportion was 28.37 p.c. and in 1931, 29.51 p.c.—3,061,745 people compared with 110,000 at Confederation.

Rural and Urban Population.—As regards rural and urban distribution, though Canada is still largely agricultural, town dwellers now, for the first time, exceed the numbers living upon the land (5,572,058 urban and 4,804,728 rural in 1931). Sixty years ago the towns and cities of Canada accounted for only 19.58 p.c. of the people (722,343 urban and 2,966,914 rural), and at the beginning of the present century the percentage was but 37. In 1871 the Dominion had 14 cities, 49 towns and 134 villages; in 1921 there were 101 cities, 461 towns and 881 incorporated villages; and in 1931, 112 cities, 476 towns and 1,017 incorporated villages. It is the larger cities that have grown the fastest. Preliminary figures of the Quinquennial Census of the Prairie Provinces, 1936, shown on p. 32, indicate that many of the cities and towns in these provinces have lost thousands of people and so also have the drought-stricken areas. On the other hand, rural areas generally and especially the more northerly sections show increases. Out of every 1,000 persons in the country, 463 were resident, on June 1, 1931, in rural and 537 in urban communities, as compared with 505 in rural and 495 in urban communities on June 1, 1921. The table below shows rural and urban population, by provinces, for 1921 and 1931. The populations of cities and towns having 25,000 inhabitants or over are given by censuses in the table on p. 31.

Rural and Urban Populations, by Provinces, 1921 and 1931

Province or Territory	1921		1931		Numerical Increase in Decade 1921-31	
	Rural	Urban	Rural	Urban	Rural	Urban
Prince Edward Island.....	69,522	19,093	67,653	20,385	- 1,869	1,292
Nova Scotia.....	296,799	227,038	281,192	231,654	-15,607	4,616
New Brunswick.....	263,432	124,444	279,279	128,940	15,847	4,496
Quebec.....	1,038,096	1,322,569	1,060,649	1,813,606	22,553	491,037
Ontario.....	1,227,030	1,706,632	1,335,691	2,095,992	108,661	369,360
Manitoba.....	348,502	261,616	384,170	315,969	35,668	54,353
Saskatchewan.....	538,552	218,958	630,880	290,905	92,328	71,947
Alberta.....	365,550	222,904	453,097	278,508	87,547	55,604
British Columbia.....	277,020	247,662	299,524	394,739 ¹	22,504	147,177
Yukon.....	2,851	1,306	2,870	1,360	19	54
Northwest Territories.....	7,988	-	9,723	-	1,735	-
Royal Canadian Navy.....	485	-	2	-	2	-
Canada.....	4,435,827	4,352,122	4,804,728	5,572,058	368,901	1,219,936

¹ This includes South Vancouver and Point Grey, with 1921 populations of 32,267 and 13,736, respectively, which were then classified as "rural".

² Members of the Royal Canadian Navy were counted at their homes in the Census of 1931.

Populations of Cities and Towns having over 25,000 Inhabitants in 1931, Compared with 1891, 1901, 1911 and 1921

NOTE.—In all cases the populations for previous censuses have been re-arranged as far as possible to compare with those of the same areas in 1931.

City or Town	Province	Populations				
		1891	1901	1911	1921	1931
Montreal	Quebec	256,723	328,172	490,504	618,506	818,577
Toronto	Ontario	181,215	209,892	381,833	521,893	631,207
Vancouver	British Columbia	13,709	29,432	120,847	163,220	246,593
Winnipeg	Manitoba	25,639	42,340	136,035	179,087	218,785
Hamilton	Ontario	48,959	52,634	81,969	114,151	155,547
Quebec	Quebec	63,080	68,840	78,710	95,193	130,594
Ottawa	Ontario	44,154	59,928	87,062	107,843	126,872
Calgary	Alberta	3,876	4,392	43,704	63,305	83,761
Edmonton	Alberta	-	4,176	31,064	58,821	79,197
London	Ontario	31,977	37,976	46,300	60,959	71,148
Windsor	Ontario	10,322	12,153	17,829	38,591	63,108
Verdun	Quebec	296	1,898	11,629	25,001	60,745
Halifax	Nova Scotia	38,437	40,832	46,619	58,372	59,275
Regina	Saskatchewan	-	2,249	30,213	54,432	53,209
Saint John	New Brunswick	39,179	40,711	42,511	47,168	47,514
Saskatoon	Saskatchewan	-	113	12,004	25,739	43,291
Victoria	British Columbia	16,841	20,919	31,060	38,727	39,082
Three Rivers	Quebec	8,334	9,981	13,691	22,367	35,450
Kitchener	Ontario	7,425	9,747	15,196	21,763	30,793
Brantford	Ontario	12,753	16,619	23,132	29,440	30,107
Hull	Quebec	11,264	13,993	18,222	24,117	29,433
Sherbrooke	Quebec	10,097	11,765	16,405	23,515	28,933
Outremont	Quebec	-	795	4,820	13,249	28,641
Fort William	Ontario	2,176	3,633	16,499	20,541	26,277

Birthplaces.—The following table gives the birthplaces of the population as shown in the past four decennial censuses:—

Birthplaces of the Population of Canada, 1901, 1911, 1921 and 1931

Year	Canadian Born	British Born ¹	Foreign Born		Total Popula- tion	Percentages of Total Population			
			Born in United States	Born in other Foreign Countries		Canadian Born	British Born	Foreign Born	
								United States Born	Other Foreign Born
	No.	No.	No.	No.	No.	p.c.	p.c.	p.c.	p.c.
1901....	4,671,815	421,051	127,899	150,550	5,371,315	86.98	7.84	2.38	2.80
1911....	5,619,682	834,229	303,080	449,052	7,206,643	77.98	11.58	4.21	6.23
1921....	6,832,224	1,065,448	374,022	516,255	8,787,949	77.75	12.12	4.26	5.87
1931....	8,069,261	1,184,830	344,574	778,121	10,376,786	77.76	11.42	3.32	7.50

¹ Includes some hundreds of persons born at sea.

Sex Distribution.—The population of Canada in 1931 was made up of 5,374,541 males and 5,002,245 females. Thus there were 518 males and 482 females per thousand. The masculinity of the population has increased in the eastern provinces and decreased in the western ones, where it was formerly greatest. A preponderance of males is common in all new countries where immigration has played an important part in building up the population.

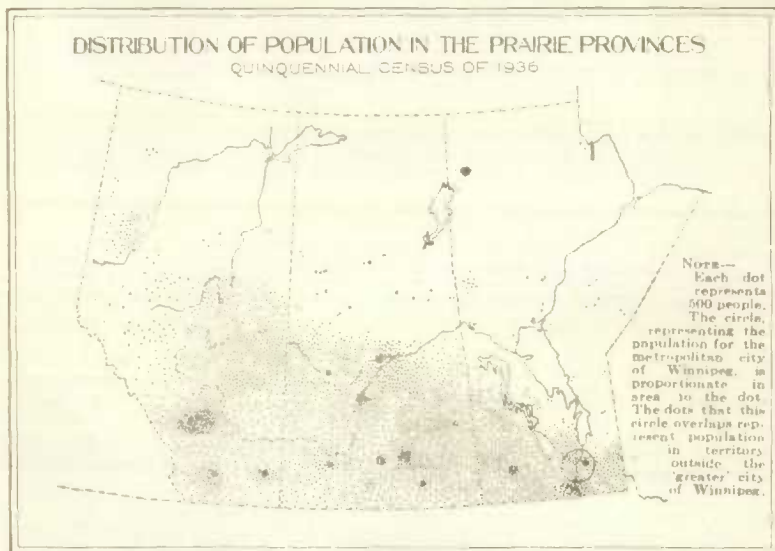
Aboriginal Races.—The 1931 figures of population given above include small numbers of the aboriginal races which amount in all to little more than 1 p.c. of the total population. For information regarding administration of the aboriginal races see Chapter XIX.

Indians.—According to the 1931 Dominion Census, the total number of Indians was 122,911 (62,943 males and 59,968 females) made up by provinces as follows: P.E.I., 233; N.S., 2,191; N.B., 1,685; Que., 12,312; Ont., 30,368; Man., 15,417; Sask., 15,268; Alta., 15,249; B.C., 24,599; Yukon, 1,543; N.W.T., 4,046. The Department of Indian Affairs made a later count of Indians in 1934 and the figure given at that date was 112,510, made up by provinces as follows: P.E.I., 224; N.S., 2,093; N.B., 1,734; Que., 13,281; Ont., 30,631; Man., 12,958; Sask., 11,878; Alta., 10,900; B.C., 23,598; Yukon, 1,359; N.W.T., 3,854.

Eskimos.—According to the Dominion Census of 1931, there were 5,979 Eskimos in Canada, nearly 80 p.c. of these being in the Northwest Territories. The distribution by provinces was: N.W.T., 4,670; Que., 1,159; Yukon, 85; Man., 62; and Alta., 3.

The Quinquennial Census of the Prairie Provinces, 1936.—Detailed results of this census have been compiled and published by the Dominion Bureau of Statistics. In view of the limited space available, these results can be only broadly outlined here.

In considering this census, it should be remembered that during the quinquennial period 1931-36 agriculture, the basic industry of the Prairie Provinces, was in a very depressed condition and large areas of south-western Manitoba, southern Saskatchewan, and southeastern Alberta were very seriously affected by drought. There has been a movement of rural population from southern Saskatchewan to the northern part of the arable belt in that province and a pronounced movement to the northern agricultural areas of Alberta. In all three provinces the proportion of urban population has declined due to the effects of the agricultural depression upon the commerce and industry of urban communities, but rural population has increased in spite of the conditions of hardship and privation.



THE SEVENTY-FIFTH BIRTHDAY OF VICTORIA, B.C.



Courtesy, Victoria and Island Publicity Bureau, Victoria, B.C.

Sherbrooke's Centennial Celebrations

Sherbrooke, Queen City of the Eastern Townships of the province of Quebec, held her centennial celebrations during the summer of 1937. The growth of the city—the hundred years of development from a small community of scattered log cabins to the present thriving metropolis of about 30,000 inhabitants—was portrayed by historical pageantry in an open air theatre to the thousands of visitors who attended the celebrations.

The layout overleaf reading downward, shows the following features of the pageant: (1) the arrival of Gilbert Hyatt, Sherbrooke's first settler, with his son and five brothers; (2) the arrival of the stage coaches (scene in the Craig Road episode); (3) Miss Canada, Miss United States, Miss Quebec and Miss Sherbrooke with their respective groups of attendants—a tableau in the pageant; and (4) a view of Wellington Street, one of the main thoroughfares of Sherbrooke, as illuminated for the celebrations.

The Seventy-Fifth Birthday of Victoria, B.C.

In 1937 Victoria celebrated her Diamond Jubilee, as reckoned from the date of incorporation of the city, Aug. 2, 1862. Actually, the founding of Victoria goes back to 1843 when the Hudson's Bay Company established Fort Victoria, named after Queen Victoria, upon a site which is now the centre of the city.

Anticipating that, under the Oregon Treaty then being drawn up, the 49th Parallel would be chosen as the International Boundary Line, the Hudson's Bay Company, in 1843, sent James Douglas, its Chief Factor, to build a new fort on the southern part of Vancouver Island to replace Fort Vancouver in the State of Washington, as it was considered essential for them to remain on British soil.

Victoria is to-day a city of about 40,000 inhabitants. It is the provincial capital, is beautifully situated near the south-east extremity of Vancouver Island and has splendid harbour facilities.

Reading downward, the layout (opposite) shows: (1) the old Fort of Victoria in 1843—this site is now the centre of the city; (2) the Parliament Buildings and a corner of the harbour; (3), (4) and (5) views of the celebration procession showing, respectively, sailors from H.M.S. *Ezeter*, the float entered by the city of Victoria, and a covered wagon typical of those which went up the old Cariboo trail.

SHERBROOKE'S CENTENNIAL CELEBRATION, 1937



**Summary of the Population of each of the Prairie Provinces, as Shown
by the Quinquennial Census of 1936, with Comparative Figures
for Census Years 1911-31.**

Item	1911	1916	1921	1926	1931	1936
Manitoba.....	461,394	553,860	610,118	639,056	700,139	711,216
Saskatchewan.....	492,432	647,835	757,510	820,738	921,785	930,893
Alberta.....	374,295	496,442	588,454	607,599	731,605	772,782
Totals.....	1,328,121	1,698,137	1,956,082	2,067,393	2,353,529	2,414,891
Totals, Rural.....	858,699	1,092,077	1,252,604	1,312,155	1,468,147	1,537,146
Totals, Urban.....	469,422	606,060	703,478	755,238	885,382	877,745

As already noted on p. 32, the urban populations of the Prairie Provinces have generally decreased during the past five years. In the ten cities tabulated below, increases are shown in but four cases, and only in the cases of Edmonton and Prince Albert are these significant.

**Populations of Ten Cities in the Prairie Provinces, Census of 1936,
compared with 1931**

City	1931	1936	City	1931	1936
Brandon.....	17,082	16,461	Prince Albert.....	9,905	11,049
Calgary.....	83,761	83,407	Regina.....	53,209	53,354
Edmonton.....	79,197	85,774	St. Boniface.....	16,305	16,275
Lethbridge.....	13,489	13,523	Saskatoon.....	43,291	41,734
Moose Jaw.....	21,299	19,805	Winnipeg.....	218,785	215,814

Immigration.—Total immigrants into Canada during the fiscal year 1937 numbered 12,023 as compared with 11,103 in the fiscal year 1936 and 12,136 in 1935.

English, Scottish, Irish, and Welsh from overseas numbered 2,264 as compared with 2,049 and 2,198 in 1936 and 1935, respectively; immigrants from the United States totalled 5,113 in 1937 as compared with 5,121 and 5,960, respectively, for the two previous years; from other countries the number was 4,646 as compared with 3,933 and 3,978, respectively.

A movement not included in the immigration statistics is that of "returned Canadians". Such departmental figures were first tabulated in the fiscal year 1924-25 and concern Canadian citizens who left Canada to reside in the United States and subsequently returned to Canada declaring their intention of resuming permanent residence in the Dominion. These Canadian citizens are divided into three groups: (a) Canadian born; (b) British born (outside of Canada); (c) Persons naturalized in Canada. The total for 1936-37 was 5,064 as compared with 5,814 in 1935-36.

Although tourists entering Canada are not immigrants, their admission calls for an immigration examination on the International Boundary and at ocean ports. The number of entries in this class increased from 20,898,000 for 1933-34 to 28,935,000 for 1936-37—a total much more than twice the population of the whole Dominion.

Vital Statistics

Canada has a national system of vital statistics, organized under the Bureau of Statistics and the Registrars-General of the several provinces, dating from 1920. The figures of births, deaths and marriages for 1936 with rates for 1926 and 1936 are given, by provinces, in the following table.

Births, Deaths and Marriages in Canada, by Provinces, 1936¹, with Rates per Thousand Population, 1926 and 1936²

Province	Births			Deaths			Marriages		
	1936 ²		1926	1936 ²		1926	1936 ²		1926
	No.	Rate per M	Rate per M	No.	Rate per M	Rate per M	No.	Rate per M	Rate per M
Prince Edward Island.....	1,977	21.5	20.1	1,024	11.1	10.3	595	6.5	5.3
Nova Scotia.....	11,640	21.7	21.3	5,789	10.8	12.4	4,103	7.6	5.6
New Brunswick....	10,494	24.1	26.1	4,788	11.0	12.6	3,394	7.8	7.4
Quebec.....	75,285	24.3	31.6	31,853	10.3	14.3	21,654	7.0	6.8
Ontario.....	62,402	16.9	21.4	37,565	10.2	11.3	27,734	7.5	7.5
Manitoba.....	12,855	18.1	22.9	6,219	8.7	8.3	5,756	8.1	7.1
Saskatchewan.....	19,039	20.5	25.2	6,287	6.8	7.4	6,153	6.6	0.7
Alberta.....	15,109	20.3	23.8	6,140	8.0	8.5	6,016	7.8	7.4
British Columbia..	10,493	14.0	16.6	7,216	9.6	9.0	5,448	7.3	7.3
Canada¹.....	219,894	20.0	24.7	106,887	9.7	11.4	80,853	7.3	7.1

¹ Exclusive of Yukon and the Northwest Territories.

² Preliminary figures.

Births.—Vital statistics for the whole of Canada on a uniform basis have been made available only since 1926 when the province of Quebec came into the Registration Area. From 1926 to 1930 the number of births, though not the rate, showed an upward trend, rising from 232,750 in the former year to 243,495 in the latter.

Since 1930, however, the movement has been reversed. The number of births has declined to 219,894 in 1936 and because of the growing population the rate shows a still more decided reduction, having fallen from 23.9 per thousand population in 1930 to 20.0 per thousand in 1936. A disturbing situation, as it has affected the birth rate, has been the extension of rural depopulation. The decline in births during the depression has, however, been partly offset by a fall in the number of deaths.

Deaths.—The number of deaths which occurred in 1936 and the rates for 1926 and 1936 are given in the above table.

Main Causes of Death.—The six chief causes of death accounted in 1936 for well over one-half of the total deaths in Canada. Diseases of the heart considered as a group was the most important cause in this year. Cancer was second—incidentally, the death rate from this cause has advanced for almost every year from 1926 to 1936, but this trend is in a considerable measure accounted for by the ageing of the Canadian population. Third in importance as a cause of death was the group "diseases of the arteries", which has also shown an apparent upward trend since 1926. Pneumonia was in fourth place, although up to and including 1932 this cause took precedence over diseases of the arteries. Tuberculosis was next and diseases of early infancy, nephritis, and accidental deaths sixth, seventh, and eighth, respectively.

Infant Mortality.—A good indication of the efficiency of the health services of a country is provided by its infant mortality. In Canada during recent years this rate has shown a substantial reduction, falling from 102 per thousand live births in 1926 to 66 in 1936. The Canadian rate, however, ranks fairly high as compared with those of other countries, and room for improvement is still great, especially as regards gastro-intestinal diseases and diseases of the respiratory tract.

Infant Deaths (under One Year of Age) and Death Rates per Thousand Live Births in Canada, 1926, 1934, 1935 and 1936²

Province	Deaths under One Year				Rates per 1,000 Live Births			
	1926	1934	1935	1936 ²	1926	1934	1935	1936 ²
Prince Edward Island.....	123	130	145	137	70	67	72	69
Nova Scotia.....	882	807	838	770	80	71	72	66
New Brunswick.....	1,095	878	896	803	106	86	83	77
Quebec.....	11,666	7,388	6,839	6,220	142	97	92	83
Ontario.....	5,302	3,523	3,515	3,416	78	57	56	55
Manitoba.....	1,122	734	637	779	77	55	63	61
Saskatchewan.....	1,681	1,093	1,194	1,024	81	55	61	54
Alberta.....	1,233	891	936	940	85	55	58	60
British Columbia.....	588	426	400	461	58	43	46	44
Canada¹.....	23,692	15,870	15,730	14,550	102	72	71	66

¹ Exclusive of Yukon and the Northwest Territories.

² Preliminary figures.

Natural Increase.—Natural increase results from the difference between births and deaths. The birth rate (as indicated in the table on p. 34) is, in general, declining in Canada. The death rate, however, is also declining (though at a slightly lesser rate) with the result that the rate of natural increase has been downward on the whole since 1930. The rate for 1926 was 13.3 per thousand population; for 1929 it was 12.2; for 1933, 11.3; and for 1936, 10.3.

Marriages.—The recent depression exercised a marked influence on marriages and the marriage rate in Canada. The year 1936, however, showed a very marked recovery. In 1929 marriages in Canada numbered 77,288. They declined to 71,657 in 1930, 66,591 in 1931, and 62,531 in 1932. The corresponding rates were 7.7 per thousand in 1929, 7.0 in 1930, 6.4 in 1931, and 6.0 in 1932. The year 1933 showed a slight upturn in the number of marriages, 63,865 as against 62,531 in the preceding year, though the rate remained unchanged at 6.0 per thousand. In 1934 the number of marriages increased by more than 9,000, reaching the figure of 73,092, with a rate of 6.8. In 1935 the number was 76,893 and the rate 7.0. The year 1936 showed a further increase in number to 80,853, while the rate advanced to 7.3.

Divorces.—Divorces granted in Canada have increased from 19 in 1901 to 51 in 1910, to 429 in 1920, to 785 in 1928, to 816 in 1929, to 875 in 1930, but decreased to 692 in 1931, owing to fewer divorces granted in Ontario as a result of the change in system and delay in dealing with applications during the transfer from Dominion to provincial jurisdiction. For the calendar year 1932 a new high total of 995 was recorded; a decrease to 923 was shown in 1933. In 1934 the number was 1,106; in 1935, 1,376; and in 1936, 1,526.

CHAPTER IV

AGRICULTURE

The soil and climate of Canada are such as to permit a great diversity of farming enterprise within the country. This will be evident from a brief consideration of the prevailing regional types of farming in the Dominion.



A View of the Countryside, Cardigan River, P.E.I.

Courtesy, Canadian Government Motion Picture Bureau.

The Maritime Provinces show considerable regional difference in crop production. In certain areas, especially adapted to their production, potatoes and apples are important cash crops. Hay and clover occupy the greatest proportion of the general field-crop area, while on large acreages of dykelands adjacent to tide water, hay raising is a specialty. Dairy products supply a large proportion of the farm income.

The province of Quebec is adapted essentially to mixed farming, with large regions specializing in dairying. The forage and coarse grain crops comprise over 90 p.c. of the total field-crop area, while among the strictly cash crops, potatoes occupy the greatest area. This province accounts for the bulk of the maple syrup and sugar made in Canada and is an important producer of honey. Vegetable crops provide a substantial revenue, while certain types of tobacco thrive in the province.

While mixed farming predominates in the province of Ontario, considerable attention has been given to the development of specialized farming enterprises such as the growing of fruits, truck crops and tobacco. As in Quebec, the major part of the cultivated area is planted to forage crops and coarse grains but the acreages of cereals are much larger than in Quebec. In some counties the fall wheat crop contributes a fair proportion of the cash income. Sugar beets are an important crop in the southwestern part of the province. Dairy farming is carried on throughout

the whole province with considerable specialization in the areas surrounding the larger centres of population, in Oxford county and eastern Ontario. Fruit and vegetables are grown extensively in the Niagara and Essex peninsulas and in other districts bordering the Great Lakes and Georgian bay, while in the counties of Essex, Kent, Elgin and Norfolk, tobacco is an important crop.

Over two-thirds of the field-crop acreage of Canada is concentrated in the three Prairie Provinces and most of this area is seeded to grain crops with wheat predominant. Generally speaking, the specialized wheat areas cover the southern short-grass plains from the Red River Valley of Manitoba to the foothills of Alberta and attain their greatest width in central Saskatchewan. In the park belt lying mostly north of this region, mixed farming is practised, with large areas of coarse grains and natural hay used for live-stock feeding. In southwestern Saskatchewan and southern Alberta, cattle and sheep ranching is an important industry.

In British Columbia agriculture exhibits possibly a greater degree of diversity than in any other province, ranging from the highly specialized fruit and vegetable farms to the ranches of the interior. Fruit and truck crops are most important in the Okanagan and Kootenay valleys. Dairying and poultry raising are specialties on Vancouver island and in the lower Fraser valley.

Dominion Assistance to Agriculture

The assistance rendered to agriculture by the Dominion Government covers such a broad field that it cannot be adequately treated in any one year in the space available here. Such matters as the organization of the Department of Agriculture, including the duties of the various Branches as they function at the present time and the important fields of research which the Experimental Farms and Stations cover with regard to farm crops and forest protection, have been described in recent editions of this handbook; this year the work which has been undertaken by the Dominion Government with respect to prairie farm rehabilitation is dealt with.

PRAIRIE FARM REHABILITATION

Under the terms of the Prairie Farm Rehabilitation Act of 1935 the Dominion Government inaugurated a program of agricultural improvement for the drought and soil-drifting areas of the Prairie Provinces. The main objective of this program, which is now in its third year, is to enable farmers in the affected areas to repair the ravages of drought and soil drifting, and to provide all possible safeguards against their recurrence. The rehabilitation program is designed to assist farmers to solve their own problems, rather than to provide temporary relief.

The need for the rehabilitation program arose from the severe conditions of drought and soil drifting which have been experienced almost continuously since 1929 in southwestern Manitoba, and the southern parts of Saskatchewan and Alberta. These conditions have resulted in very low yields and repeated crop failures. As the type of farming in this area is limited by climatic conditions to grain production, principally wheat for export, these drastic reductions in crop yields, coupled with the extremely low grain prices which prevailed from 1930 to 1935, have

entailed enormous economic losses and considerable hardship to the agricultural population. In view of the gravity and national importance of the drought problem, the Dominion Government has introduced, through the Prairie Farm Rehabilitation Act, various measures of assistance to farmers in the affected area, including the remedial adjustment of agricultural practices.

The rehabilitation program is under the direction of the Dominion Minister of Agriculture, operating largely through the facilities of the Dominion Experimental Farms. Various phases of the work are conducted in co-operation with the Governments of the Prairie Provinces.

Under the terms of the Act provision is made for the following rehabilitation measures: (1) introduction of improved farm practices; (2) tree planting; (3) surface water development; (4) land utilization and land settlement. Brief descriptions of the work in progress under the foregoing headings follow.



Typical Soil-Drifting Scene in the Drought Areas of the Prairie Provinces.—
The highway bordered by the telegraph poles is completely blocked by the drifts.

Courtesy, Department of Agriculture.

1.—The Introduction of Improved Farm Practices in the Drought Area

Rehabilitation measures affecting farm practices in the drought area include the control and prevention of soil drifting, the reclamation of severely drifted land for crop production, the regrassing of sub-marginal cultivated land, the raising of live stock, and the production of vegetables for home consumption. This program is being effected through the demonstrational and investigational work of the Dominion Experimental Farms and Stations in the drought area, and on district experiment sub-

stations, reclamation stations and regrassing projects, which have been established under the Act. Active co-operation with farmers is being secured through agricultural improvement associations.

Dominion Experimental Farms within the drought area have been in operation at Brandon, Man., and Indian Head, Sask., for over 50 years, and at Scott, Sask., Swift Current, Sask., and Lethbridge, Alta., for shorter periods. In addition, work on ranching problems has been in progress on the Dominion Range Experiment Station, Manyberries, Alta., since 1926. As the experimental work of these farms and stations has been closely related to the development of agriculture in the present drought area, they are in a favourable position to further rehabilitation.

District experiment sub-stations are essentially outposts of the Dominion Experimental Farms, established for the demonstration and further trial of methods of crop production suitable for the drought and soil-drifting areas. Comprising generally one section of land, these sub-stations are private farms operated under the supervision of the Dominion Experimental Farms. Since the inauguration of the program, 47 sub-stations have been established at strategic points. In addition to field work with rotations and soil-drifting control practices, these sub-stations serve as demonstration points for farm gardens, and various other farmstead improvement projects.

Reclamation stations, for investigational work on the reclamation of severely drifted land, have been established at Melita, Man.; Mortlach, Cadillac, and Woodrow, Sask.; and Hutton and Youngstown, Alta.

Regrassing projects, the object of which is to demonstrate methods of re-establishing grass cover on land which has been proven unsuitable for grain production, are located at 41 different points. These projects vary in area from about 900 acres to as low as 10 acres each.

In order to bring farmers into contact with the work conducted under the rehabilitation program, and to secure as much co-operation as possible in solving the problems raised by drought and soil drifting, a number of agricultural improvement associations have been formed among farmers in different districts. Members of these associations receive certain advisory and material services from the Dominion Experimental Farms, while financial assistance is provided for association activities. By the end of August, 1937, about 80 associations had been formed, with 10,171 members. In addition, about 10 associations were in process of formation.

At this point it may be well to consider the nature of the major problem affecting farm practices in the drought area, as well as the measures being advocated for its solution.

Soil-Drifting Control.—Normal precipitation in the drought areas of the Prairie Provinces is inadequate for continuous crop production. This fact makes it necessary to conserve part of one year's precipitation by summerfallowing, in order to augment the supply for crop production in the following year. An essential feature of summerfallow practice is the destruction of moisture-consuming weeds by cultivation. This results in the fallow land being exposed in a bare and pulverized condition to the erosive effects of high winds. As from one-third to one-half of the cultivated land may be in summerfallow each year, the causal relationship between summerfallow and soil drifting, especially under drought con-

ditions, is obvious. The attack on soil drifting under the rehabilitation program involves the introduction of improved methods of summer-fallowing.



Aerial View of Nobleford District, Alta.—This picture illustrates the method of strip farming which has been universally adopted in this section of the province.

Courtesy, Department of Agriculture.

One of the most effective methods of soil-drifting control is strip farming, which consists of dividing large fields into alternate narrow strips of crop and summerfallow. These strips, which may vary in width from 4 to 20 rods, are run at right angles to the direction of the prevailing strong winds. Drifting, which may start on the fallow strips, is prevented from spreading by the crop or stubble on the adjacent strips. In this manner the cumulative effect of drifting on large fields is avoided. Strip farming has been practised successfully for many years in parts of southern Alberta, and its use throughout the drought area is being widely adopted.

In the cultivation of fallow land it is desirable to leave as much stubble and other "trash" on the surface as possible, and to produce a rough cloddy tilth, in order to reduce susceptibility to drifting. Good trash cover may be secured by shallow cultivation; in this respect, the "ploughless fallow" in which the fallow (and subsequent seed bed) is cultivated without ploughing, is coming into wide use. Rough tilth is secured by the same method, and by avoiding the use of implements which produce extreme pulverization.

In some cases cover crops of fall sown spring grain are used to prevent fall and spring drifting. Various emergency methods are also used, such as spreading straw on small areas of incipient drifting and cultivating or ridging land at intervals across a field.

The foregoing methods of soil-drifting control are under demonstration and trial, with due regard to local conditions, on the various district experiment sub-stations and reclamation stations.

Where the control of soil drifting cannot be effected by any of the foregoing methods, as on some areas of sandy land, regrassing may become necessary. Owing to the difficulty of securing a stand of grass on land which is subject to periodical drifting, it is frequently necessary to provide

some vegetative protection for the soil. Cover crops of grain, such as fall rye, are used for this purpose. Grass seed of the desired species, usually crested wheat or brome grass, is seeded when sufficient protection has developed to check drifting. Sometimes several attempts at regrassing are necessary in order to secure the desired result. Work of this nature is in progress on the reclamation stations and regrassing projects.



A Well-Grown Windbreak on Sandy Soil in Saskatchewan.

Courtesy, Department of Agriculture.

2.—Tree Planting

Tree planting, with the object of improving living conditions on prairie farms, and of providing protection for gardens and crops against the erosive and drying effects of high winds, is being undertaken as part of the rehabilitation program.

Afforestation of the naturally treeless prairies is beset with serious difficulties, arising largely from adverse climatic conditions, but also from the large territory to be covered. For this reason tree-planting work in the Prairie Provinces prior to 1935 was largely confined to the establishment of farmstead shelterbelts. Under the rehabilitation program, this work is being extended by providing free trees plus financial assistance for planting in the drought areas, and in addition, the problem of giving adequate shelter to field areas is being experimentally investigated through field-crop shelterbelt associations. These associations consist of groups of farmers who are assisted in undertaking the establishment of field-crop shelterbelts on compact blocks of farms throughout an area of about 30 or 40 square miles. The object of this work is to determine the value of such plantations for the prevention of soil drifting and the conservation of soil moisture. Four such associations have been formed at the following points: Lyleton, Man., Conquest, Sask., Aneroid, Sask., and Ribstone, Alta. A similar tree-planting project is being conducted in co-operation with the rural municipality of Kindersley, Sask. The results of this work, which will not be known for a number of years, should provide new and

valuable information on afforestation in the prairies. Other rehabilitation tree-planting projects include the supply of free trees to members of agricultural improvement associations, and the establishment of demonstration shelterbelts on district experiment sub-stations.

Since 1935, approximately three million tree seedlings have been furnished by Dominion Forest Nursery Stations at Indian Head and Sutherland, Sask., for rehabilitation purposes.



A Finished Dugout.—As explained in the text, these dugouts are constructed to conserve surface moisture.

Courtesy, Department of Agriculture.

3.—Surface Water Development

The development of surface water resources for agricultural use is a major rehabilitation activity which has already resulted in substantial benefits to farmers and ranchers in the drought area. The object of this work is to provide for the storage, by means of dugouts and dams, of spring run-off water for domestic, stockwatering, and irrigation purposes. This work is supervised by a Water Development Committee with headquarters at Regina, Sask. The personnel of this Committee includes officials of the Dominion Experimental Farms, and representatives of each of the Prairie Provinces.

Under the rehabilitation program, two types of projects are being constructed—small projects on private farms, and larger projects for community use. Small projects consist of dugouts, dams, and irrigation works on private farms for which the farmers receive free engineering services, and financial assistance in proportion to the magnitude of the project. The basis of financial assistance is 4½ cents per cubic yard of earth moved, plus additional amounts for rock work and the purchase of materials. Maximum assistance for the different types of projects are: \$75 per dugout; \$150 per stockwatering dam; and \$350 per irrigation

project. Where two or more farmers co-operate in a "neighbour" project, the maximum assistance is increased to \$500. Assistance for large community projects is determined for each project on its merits, sometimes amounting to the full cost of construction.

Applications for assistance with water development are received by the Water Development Committee. Small projects, when examined and approved, are referred to the appropriate provincial authorities for final authorization. Engineering and financial assistance for these projects are provided from rehabilitation funds. Large projects are passed through the Dominion Department of Agriculture to the Minister for final approval.

Progress with Small Water Development Projects.—From the inauguration of the program in 1935 to the end of June, 1937, some 7,625 applications for assistance with small projects were received. During the same period a total of 2,042 small projects were reported as completed, including 1,168 dugouts, 718 stockwatering dams, and 156 small irrigation projects. As most of the work on small projects is done in the autumn after harvesting operations have been completed, the above totals will be considerably increased by the end of the current year.

Progress with Large Water Development Projects.—Large projects include the construction of storage dams or irrigation works for legally incorporated bodies, such as rural municipalities or irrigation districts. In some cases assistance has been provided for repair and extension work on existing projects, where such work was necessary for the protection of settlers. The basic principle governing the selection of large projects is to secure a maximum of benefit with a minimum of cost.

Since the beginning of the program, work on a large number of projects has been completed. This includes the construction of works for the irrigation of 4,400 acres at Val Marie, Sask.; 1,470 acres at Eastend, Sask.; 900 acres at Middle Creek, Sask.; 2,000 acres at Adams lake, Sask.; 3,600 acres in the Mountain View Irrigation District in Alberta; and 3,000 acres at Wildhorse, Alta. Extensive repairs and improvements have been made to the works of the Eastern Irrigation District at Brooks, Alta., and of the Canada Land and Irrigation Company, Vauxhall, Alta. For the community storage of water for stockwatering, one dam has been constructed at Souris, Man.; one at Crystal City, Man.; four in the rural municipality of Edward, Man.; two on Long Creek, near Estevan, Sask.; one at Coderre, Sask.; and a number on land under the control of the Special Municipal Areas Board of Alberta. Near Lajord, Sask., spring flooding on about 13,000 acres of land has been prevented by straightening and clearing the channel of Waskana creek.

Large projects in course of construction or under consideration include the creation of a storage reservoir in Cypress Lake bed, Sask.; of storage dams on the Souris river at Midale, Sask., and near Melita, Man.; and various irrigation and stockwatering projects throughout the drought area.

4.—Land Utilization and Land Settlement

During the period of agricultural settlement in the Prairie Provinces considerable areas of marginal and sub-marginal land, originally covered with grass, were brought under cultivation for crop production. Much of this land was subsequently abandoned, but a considerable acreage is still under cultivation with little prospect of producing profitable crops. To

rectify this condition adjustments in land utilization are being attempted on the basis of information secured through various types of surveys.

Soil Surveys.—With the object of determining the nature, location and extent of various types of soil in the Prairie Provinces, soil surveys have been conducted by the provincial universities for a number of years, in many cases with financial assistance from the Dominion Experimental Farms. Since 1935 the entire cost of this work has been defrayed from rehabilitation funds, with a view to accelerating surveys in the drought area. This work has been well advanced in Manitoba and Saskatchewan and over more than half of the required area in Alberta.

Economic Surveys.—Conducted by the Economics Branch of the Dominion Department of Agriculture, in co-operation with the Universities of Saskatchewan and Alberta, surveys of general economic conditions in various agricultural areas in the drought belt have been in progress since 1935. One major object of this work is to determine the relationship between soil type and farm practices on the one hand and farm revenues on the other. A useful result is the preparation of land classification maps which indicate, on the basis of natural conditions and actual farming experience, the productivity of various soil types.

Land Ownership Investigations.—In order to secure information on land utilization and economic conditions in certain areas of marginal soil, land ownership or farm debt surveys were started in Saskatchewan during 1937. The immediate use of the data secured is to effect necessary changes in land use. Ultimately, the results of these investigations, in conjunction with the soil and economic surveys, will serve as the basis for comprehensive land utilization policies.

Community Pastures.—On the basis of information secured in the foregoing surveys, community pastures are being developed on suitable areas of sub-marginal land. These pastures, located on publicly-owned land, are being fenced and supplied with stockwatering facilities, and steps are being taken to restore or improve their grass cover. Grazing privileges under Government supervision, will be accorded to local farmers or ranchers. By the end of September, 1937, some 208,240 acres on 11 areas in Saskatchewan, and 595,840 acres on 8 areas in Alberta, had been designated as community pastures.

Land Settlement.—In connection with land utilization work, some movement of settlers from poor to better class land has been necessary. In general, however, this phase of the program has not yet been greatly advanced. Further development along this line will depend on the outcome of other rehabilitation measures.

The success of the program described above in bettering western agricultural conditions will not be fully determined for several years, but already some gratifying results have been secured. In addition to demonstrating the solutions for many drought problems, and in securing considerable co-operative action thereon by farmers, the rehabilitation program has helped to maintain a spirit of optimism regarding the future of the dried-out areas. Periodical droughts may be inevitable, but their adverse effects can be minimized by the application of measures based on current experiences and investigations.

Provincial Assistance to Agriculture

Each of the nine provinces, under Section 95 of the B.N.A. Act, has its Department of Agriculture, and everywhere the provinces endeavour to assist their farmers by educational and extension work, and in most cases by the organization of co-operative marketing. Agricultural colleges maintained by the provinces are the Nova Scotia Agricultural College at Truro, the Ontario Agricultural and the Ontario Veterinary Colleges at Guelph, and the Manitoba Agricultural College at Winnipeg. Three agricultural colleges in Quebec are assisted by the Provincial Government, while faculties of agriculture are found in the provincial universities of Saskatchewan, Alberta and British Columbia.

The Canadian Grain Trade

The natural advantage which the Prairie Provinces enjoy in the production of high quality grains is to some extent offset by the long distances which have to be covered to bring these products to seaboard outlets. Toward overcoming this handicap, an elaborate yet economical system of handling, storing, and transporting grain has been developed within the past half century. Included in this system are extensive inspection and grading facilities which ensure a high degree of uniformity in the quality of the various grades, and thus perpetuate the reputation Canadian grains have achieved in world markets.

Unlike the handling systems of most countries, Canadian grain is handled in bulk, rather than in bags, and is sold abroad by export grades, rather than by sample. The bulk handling of grain has been facilitated by the system of country and terminal elevators which has grown with the increase in wheat production. In 1900-01, there were already in operation 518 country elevators with a total capacity of 12,759,352 bushels. By 1936-37 these had increased to 5,709 with a capacity of 189,362,500 bushels, although some of these elevators have not been operating during the recent years of light production.

From these country elevators the grain is moved by rail through any one of a number of inspection centres, such as Winnipeg, Calgary or Edmonton, to the terminal elevators located at Fort William-Port Arthur or on the Pacific coast. The number of licensed elevators at the Head of the Lakes has grown from 5 in 1900-01 with a capacity of 5,570,000 bushels to 29 with a capacity of 91,167,210 bushels in 1936-37. Pacific coast terminal elevators are located at Vancouver, Victoria, New Westminster and Prince Rupert and have a capacity of 20,495,000 bushels. A new route to overseas ports has been developed through Churchill with the erection of a terminal elevator in 1931 having a capacity of 2,500,000 bushels. The movement of grain through the Head of the Lakes has always been the heaviest. Total receipts of wheat, oats, barley, rye, and flaxseed at Fort William-Port Arthur in 1936-37 were 155,591,277 bushels, compared with receipts at Pacific elevators of 30,315,375 bushels, and receipts at Churchill of 2,425,207 bushels.

From the Head of the Lakes, grain is shipped by water to eastern elevators located on the Lower Lakes and along the St. Lawrence river. Lower Lake elevators supply grain for eastern consumption and for trans-

shipment to the St. Lawrence. Grain also moves from the Head of the Lakes to United States lake ports for United States consumption, milling-in-bond, or shipment by canal or rail to Atlantic seaboard ports. In winter months, small amounts of grain are moved by rail from Georgian Bay and Lower Lake elevators to the ports of Saint John, West Saint John, N.B., and Halifax, N.S., which are open to navigation the year round. Within the past two years a few small ocean-going vessels have gone directly to the Head of the Lakes, and have cleared with grain cargoes for overseas ports.

Clearances of Canadian wheat in 1936-37 from Canadian and United States ports amounted to 145,886,736 bushels. United States imports for consumption and milling-in-bond during 1936-37 amounted to 43,521,170 bushels. The total export movement of Canadian wheat in 1936-37 amounted to 195,223,653 bushels, including wheat flour expressed as wheat. Exports of oats and oat products in 1936-37 amounted to 9,499,895 bushels. Barley exports totalled 17,555,833 bushels, while rye exports amounted to 3,633,032 bushels. Flaxseed exports amounted to 178,468 bushels, while on the other hand, flaxseed imports into Canada totalled 991,007 bushels.

Values of Agricultural Capital and Production

The current value of farm capital in Canada in 1936 was estimated at \$4,628,375,000 compared with \$4,712,391,000 in 1935 and \$4,464,147,000 in 1934. The decline in the total value of farm capital in 1936 was due chiefly to a decline in land values. In 1936, Ontario had 29 p.c. of the total value of farm capital, Saskatchewan 22 p.c., and Quebec 18 p.c.

Current Value of Agricultural Capital, by Provinces, 1936, with Totals for 1935 and 1934

Province	Land and Buildings	Implements and Machinery	Live Stock	Total
	\$'000	\$'000	\$'000	\$'000
Prince Edward Island.....	39,162	6,326	7,968	53,456
Nova Scotia.....	99,623	8,229	13,411	121,263
New Brunswick.....	83,008	10,331	15,381	108,720
Quebec.....	649,820	76,167	101,204	827,191
Ontario.....	1,026,126	120,563	195,042	1,341,731
Manitoba.....	224,848 ¹	40,137 ¹	45,885	310,870
Saskatchewan.....	707,795 ¹	131,994 ¹	97,619	1,027,408
Alberta.....	517,003 ¹	88,751 ¹	82,434	688,188
British Columbia.....	117,089	10,699	20,790	148,548
Totals	1936 3,551,474	494,197	579,704	4,628,375
	1935 3,662,234	511,163	538,914	4,712,391
	1934 3,467,898	538,685	457,654	4,464,147

¹Based on preliminary returns from the 1936 quinquennial census.

The gross value of agricultural production includes the value of all crops, live stock and animal products produced on farms in Canada. In 1936 the gross value of agricultural production was estimated at \$1,061,624,000, an increase of \$294,830,000 over the depression low established in 1932. Gains in the gross value of agricultural production in 1936 were registered in all provinces.

Drought in Saskatchewan and eastern Alberta in 1937 resulted in the smallest out-turn of wheat since 1914. This lowered the total volume of

crop production in 1937, although larger crops of coarse grains were obtained. Cash income from the grain crops of 1937 will not likely be as high as in 1936. Lower prices for feed grains will offset the larger 1937 production. Cash income from the sale of meat animals and poultry will be greater in 1937, due to a greater volume and higher prices. Fruit crops in 1937 were substantially larger than in the previous year and, because of superior quality, prices held up well in the face of the heavier supplies.

Ontario and Manitoba both experienced a very favourable year in 1937. Crops in the Maritime Provinces and Quebec did not yield as well as in 1936. Alberta was in a slightly better position in 1937. With the exception of Saskatchewan, Canadian agriculture made considerable progress to a normal condition during 1937.

Gross Value of Agricultural Production in Canada, 1931-36¹

Item	1931	1932	1933	1934	1935	1936 ¹
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Field crops.....	435,966	452,527	453,598	549,080	511,873	599,421
Farm animals.....	96,778	65,185	89,063	99,438	120,078	130,886
Wool.....	1,644	1,063	2,005	1,899	2,232	2,783
Dairy products.....	191,390	159,074	170,829	183,791	192,410	208,238
Fruits and vegetables.....	39,692	32,157	33,208	43,531	48,678	42,821
Poultry and eggs.....	56,298	42,078	38,060	45,515	50,434	53,236
Fur farming.....	3,557	3,284	4,062	4,534	5,516	6,399
Maple products.....	3,456	2,706	2,059	3,040	3,522	3,714
Tobacco.....	7,178	6,088	6,531	7,232	10,763	9,185
Flax fibre.....	179	170	159	250	321	298
Clover and grass seed.....	1,497	962	1,362	2,010	1,686	2,257
Honey.....	2,246	1,470	2,010	2,245	2,027	2,386
Totals	839,881	766,794	862,946	942,565	949,510	1,061,624

¹Figures for 1936 are preliminary.

Field Crops

Acreages.—During the past half century there has been a tremendous increase in the area sown to field crops. The opening up of the Prairie Provinces and the stimulus to production induced by the Great War were the principal factors responsible for the increase of nearly 300 p.c. in field crop area between 1890 and 1937.

Wheat.—Production, imports and exports, 1928-37, are shown below.

Production, Imports and Exports of Wheat for Canada, 1928-37²

NOTE.—Wheat flour has been converted into bushels of wheat at the uniform average rate of 4½ bushels to the barrel of 196 lb. of flour.

Year	Production	Imports of Wheat and Flour	Exports of Wheat and Flour	Year	Production	Imports of Wheat and Flour	Exports of Wheat and Flour
	'000 bu.	bu.	bu.		'000 bu.	bu.	bu.
1928.....	566,726	1,345,881	407,564,156	1933.....	281,892	413,165	194,779,875
1929.....	304,520	1,374,726	186,267,216	1934.....	275,849	896,074	165,751,305
1930.....	420,672	244,220	258,637,886	1935.....	277,379	291,510	254,424,775
1931.....	321,325	216,328	207,029,555	1936.....	229,218 ¹	403,396	195,223,653
1932.....	443,061	173,014	264,304,327	1937.....	182,505 ²	—	—

¹ Subject to revision.

² Provisional estimate.

Prior to 1905 the amount of wheat produced was less than 100 million bushels. For six years it remained steadily over this figure until 231 million bushels was reached in 1911. In only three of the next twenty years was wheat production less than 200 million bushels, viz., 1914, '18 and '19. At that time the abnormally high 1915 crop of 393 million bushels set a record for a number of years until 1922, when nearly 400 million bushels was produced. New high records were attained in 1923 (474 million bushels), in 1927 (480 million bushels), and in 1928 (567 million bushels). Except for the years 1930 and 1932 when production exceeded 400 million bushels, the years from 1929 to 1937 were marked by unfavourable climatic conditions and yields were correspondingly low. Rust in 1935 caused serious damage, whereas in 1937 the worst drought ever experienced on the prairies reduced the crop to 182.5 million bushels, the smallest yield since 1914.



A Disc Seeder with Land Packer Attachment, Powered by a Tractor.—This machine ploughs, cultivates, harrows, seeds, and packs in one operation.

Courtesy, Massey-Harris Company, Limited, Toronto.

Other Grains.—These grains consist of oats, barley, flaxseed, rye, buckwheat, peas, mixed grain, and corn. The first two have assumed real importance among the field crops of Canada. The volume of oat production has attained considerable dimensions, reaching the record total of close upon 564 million bushels in 1923. The area under crop has expanded from 3,961,356 acres in 1890 to 13,048,500 acres in 1937, when the production was estimated at 274,468,000 bushels. Barley, with a production of 11,496,000 bushels in 1870, yielded a record total of 136,391,400 bushels in 1928, while the yield for 1937 is now estimated at 85,969,000 bushels. Rye production amounted to 1,064,358 bushels in 1870, increased to 32,373,400 bushels in 1922 and receded to 5,749,000 bushels in 1937.

The Field Crops of Canada, 1937

(According to estimates of Nov. 12, Nov. 18 and Dec. 9, 1937)

Field Crop	Area	Total Yield	Total Value	Field Crop	Area	Total Yield	Total Value
	acres	bu.	\$		acres	cwt.	\$
Wheat.....	25,570,200	182,505,000	179,810,000	Potatoes.....	531,200	42,633,000	28,143,000
Oats.....	13,048,500	274,468,000	117,534,000	Turnips, man-			
Barley.....	4,331,400	85,969,000	43,800,000	golds, etc....	185,700	36,334,000	11,978,000
Rye.....	803,700	5,749,000	4,252,000				
Peas.....	84,000	1,178,600	1,980,000				
Beans.....	67,600	1,178,500	1,593,000	Hay and clo-		tons	
Buckwheat...	395,500	7,522,000	5,180,000	ver.....	8,650,200	12,985,000	96,449,000
Mixed grains...	1,128,200	36,389,000	18,371,000	Alfalfa.....	848,900	2,096,000	16,843,000
Flaxseed.....	241,300	687,300	1,040,000	Fodder corn...	447,300	4,021,500	12,506,000
Corn for husk-				Grain hay....	1,147,800	1,768,000	11,021,000
ing.....	165,600	6,492,000	3,303,000	Sugar beets...	46,500	419,000	2,579,000



Wheat in Stook at Newmarket, Ontario.

Courtesy, Travel and Publicity Bureau, Toronto.

Prices of field crops were at an unusually high level during the War and until 1919, then slumped steeply, falling to a low level in 1923. Recovery followed in the years up to 1930, when sharp declines commenced, bringing the prices of many crops to the lowest recorded levels. The value of the field crops of Canada, which in 1910 was \$384,514,000, had increased by 1914 to \$638,580,000. As the effects of the War came to be felt, the maximum was reached in 1919 with a total of \$1,537,170,000. This value receded to \$899,266,200 in 1923 but the recovery of prices combined with excellent harvests brought the value up to \$1,173,133,600 in 1927 and \$1,125,003,000 in 1928. Since then it declined to \$948,981,000 in 1929, \$662,040,000 in 1930 and \$432,199,400 in 1931. With the exception of 1935, there has been a gradual gain in value until the 1937 season when

the value of field crops, estimated at Dec. 9, stood at the highest level since 1930. Comparative figures for the intervening years are: 1932, \$452,526,900; 1933, \$453,958,000; 1934, \$549,079,600; 1935, \$508,910,900; and 1936, \$594,139,000. Higher prices per unit are chiefly responsible for the increased value of the 1937 production. Due to the reduced yields of many crops, the 1937 production is valued at \$65,000,000 less than that of 1936 from the same crops.

The Flour-Milling Industry.—This most important manufacture connected with the field crops dates back to the first settlement made by the French in 1605. The milling of flour on a large commercial scale began with the competition between the two processes, stone and roller milling. About 50 years ago, the roller process secured a virtual monopoly of the industry and local country mills gave way to large mills served by elevators at central points. The high quality of Canadian wheat soon became recognized throughout the world and Canada's huge export trade in wheat and its products developed rapidly. Statistics of the milling industry will be found on p. 96.

Live Stock

The live-stock industry occupies an important place in Canadian agriculture and is carried on in all provinces of the Dominion. Cattle raising is the leading branch of the industry and embraces both the breeding of dairy cattle and the raising and finishing of meat animals. In the latter case, ranching is followed mostly in the Prairie Provinces while the finishing of cattle for market is more common to Ontario and Quebec where abundant supplies of all feeds are available. Cattle numbers rose successively from 7,973,000 in 1931 to 8,951,900 in 1934 but declined to 8,840,500 in



A French-Canadian Dairy Herd on Pasture, Cap Rouge, P.Q.—Note the Quebec Bridge, spanning the St. Lawrence in the distance.

1937. Ontario is the leading province in hog raising but the availability of abundant supplies of barley in the park belt of Alberta and Saskatchewan is responsible for the rapid development of hog raising in those areas. Swine numbers have fluctuated sharply in sympathy with market prices. From a total of 4,699,800 in 1931, they dropped to 3,549,200 in 1935, advanced again to 4,138,600 in 1936, and in 1937 declined to 3,963,300. Sheep numbers have remained fairly constant during the past few years and in 1937 were estimated at 3,340,000. Farm poultry numbers have declined from a high point of 65,152,600 in 1931 to 57,510,100 in 1937. The raising of horses still occupies a prominent place in the live-stock industry. The numbers of horses on farms declined rapidly after the War, but in recent years the decrease has been small. In 1937, horses on farms numbered 2,883,000, a slight decrease from the previous year.



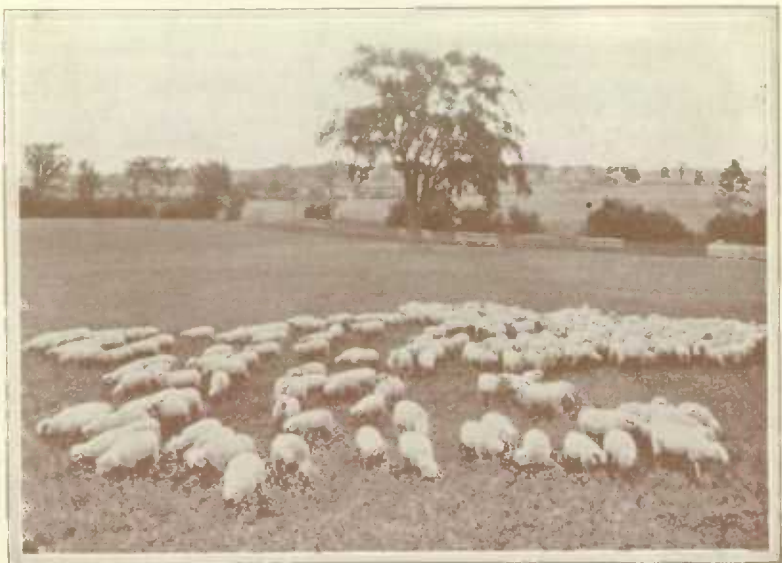
Pig Raising on a Farm near Edmonton, Alta.

Courtesy, Canadian Government Motion Picture Bureau.

Slaughtering and Meat Packing.—This is the most important manufacturing development connected with the live-stock industry. For statistics of slaughtering and meat packing, the reader is referred to p. 95.

Exports.—In the first nine months of 1937, exports of live cattle increased slightly over the same period of 1936. The movement to the United Kingdom declined sharply from 29,313 head valued at \$2,263,237 to 8,119 head worth \$708,312. At the same time the United States increased her imports of Canadian cattle from 215,976 head valued at \$8,494,059 in 1936 to 264,952 head having a value of \$12,752,254 in 1937. The comparative totals for the two nine-month periods were 249,271 head worth \$10,905,854 in 1936 as against 277,034 head worth \$13,647,297 in 1937.

Exports of bacon and hams for the first nine months of 1937 showed almost a 50 p.c. increase over the same period in 1936, the comparative figures for the two periods being 1,509,296 cwt. as against 1,099,602 cwt. The respective values of the shipments were \$25,492,542 and \$18,195,117. The United Kingdom takes by far the greater portion of these exports, the figures for the two periods being 1,480,737 cwt. worth \$24,748,045 in 1937 and 1,075,831 cwt. worth \$17,605,886 in 1936. Exports of beef showed an increase in volume of nearly 100 p.c. over the previous year. The total quantity shipped during the first nine months of 1937 was 107,190 cwt. compared with 56,562 cwt. in the same period of 1936. The respective values of these shipments were \$842,879 and \$503,959.



Lambs Fattened on Alfalfa Pasture at the Central Experimental Farm, Ottawa.

Courtesy, Animal Husbandry Division, Central Experimental Farm, Ottawa.

Total exports of animals and animal products have shown a progressive increase over the past few years. In 1937 the value of these exports was \$110,181,981 for the first nine months while in the same period of 1936 the value of exports was \$89,169,131. Of the 1937 exports, \$59,120,314 worth went to the United Kingdom and \$39,883,601 worth to the United States.

Special Crops

A feature of Canadian agriculture is the number of crops which are grown in localities especially suited for their production. Some of the more important of these are tobacco, sugar beets, maple syrup and sugar, and vegetable crops.

Tobacco production is expanding steadily in Ontario and Quebec where most of the crop is grown. In 1936, production totalled 46,084,000 lb. from 54,965 acres while the preliminary estimate for 1937 is 71,352,000 lb. from 65,350 acres.

Quebec leads in the output of maple products. With production in 1937 at the lowest point for several years, the value of sugar and syrup produced in all Canada was \$2,254,000, as compared with \$3,714,000 in 1936.

Sugar-beet production is centred in south-western Ontario and near Raymond, Alta., although there are other areas sown to this crop in Quebec and Manitoba. In 1936, the latest year for which factory statistics are available, the output of refined beetroot sugar amounted to 156,066,242 lb. This was the greatest production on record and was valued at \$6,103,264.



A Field of Celery at Armstrong, B.C.

Courtesy, Provincial Department of Agriculture, Victoria, B.C.

The growing of fresh vegetables for market is an important occupation in many parts of Canada, particularly in suburban areas. Truck farms located in especially favoured regions provide raw materials for the vegetable-canning industry and cater to the demands of the fresh vegetable market. Other special crops of lesser importance are clover and grass seed, hops, flax and hemp for fibre.

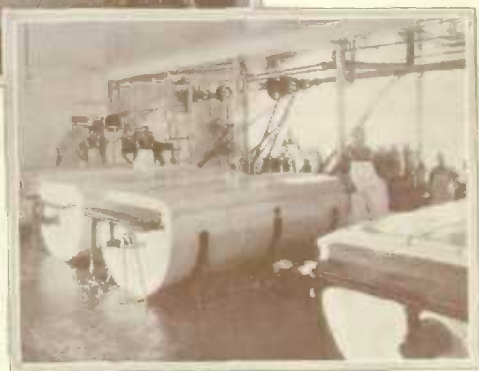
Specialized poultry farming has increased in popularity in the past ten years, particularly in Ontario and British Columbia, and there has also been a large expansion in farm flocks. The effects of selective breeding are noticeable in the improved quality of eggs and dressed poultry. The grading of marketed products is also receiving more attention.

The production of honey is common to all provinces, with Ontario, Manitoba, and Quebec the leaders. In 1936 the estimated Canadian production was 28,241,000 lb. as compared with 24,291,000 lb. in 1935. The 1936 crop was valued at \$2,385,600.

Dairying



Filling and Capping
Room in a
Condensed Milk
Plant in
Ontario.



A Modern Canadian
Creamery in the
Eastern Townships,
Quebec.

Courtesy, Canadian Government Motion Picture Bureau.

Dairying has long been regarded as an important Canadian industry and within recent years its rapid expansion has given it a position of leadership among revenue-producing farm enterprises. In early pioneer days both butter and cheese were made on the farms by the settlers and what they did not require for their own use was bartered for clothing and groceries in the nearby towns and villages. As the country developed, the production of these products became specialized undertakings and gave rise to the establishment of creameries and cheese factories. At the present time 1,316 creameries, 1,000 cheese factories, and 216 factories manufacturing both butter and cheese are being operated in Canada. The output of these factories in 1936 reached a total of 248,740,500 lb. of butter and 117,079,400 lb. of cheese, valued at \$57,331,500 and \$14,234,100, respectively. Due to higher prices, the production of cheese in the first ten months of 1937 increased 10.4 p.c. over the same period of 1936 while the butter output declined 1.5 p.c. In 1900 the production of cheese amounted to approximately 221,000,000 lb. as compared with 36,000,000 lb. of creamery butter. Although cheese production exceeded the creamery butter output for another two decades, a gradual but continuous change from cheese making to butter making was taking place and by 1922 the creamery butter output

overtook cheese production for the first time. It held the lead until 1925 when the cheese industry again recovered first place. But recovery was temporary, for in 1926 the tide turned and, whereas from 1925 to 1934 the production of factory cheese fell from 177,000,000 lb. in the former year to 99,000,000 lb. in the latter, that of butter increased from 169,000,000 lb. to 235,000,000 lb. The cheese industry regained some lost ground in 1928 and again in 1932, but otherwise the decline was continuous for fourteen years, leaving its competitor in an unchallenged field. The production of dairy butter has declined, yet the 1936 production represents 30 p.c. of the total butter output. Farm-made cheese, on the other hand, represents only 1 p.c. of the total cheese production.

Concentrated milk (included under "Miscellaneous Factory Products" in tables on p. 56) is produced by another branch of dairy manufacturing that has developed in recent years. During the course of the past five years whole milk products increased 28.5 p.c. while milk by-products advanced 45.8 p.c. Another important product in the miscellaneous group is ice-cream. During the past five years the total output for the Dominion has increased over one million gallons.

With the growth of urban centres, more and more milk is being used in the fluid form, a fact which has a significant connection with the decline in the cheese industry. Although dairying suffered from low market prices between 1930 and 1932, the value reductions were not as great as those of other farm products. In 1930 dairy products represented 19 p.c. of the total farm revenue, while wheat represented 14 p.c. Even with higher wheat prices during the past few years, the value of dairy products in 1936 was still nearly \$3,500,000 above that of its nearest rival.

The consumption of cheese in Canada is less than 3½ lb. per capita, while butter consumption is nearly 31½ lb. This helps to explain why the bulk of our Canadian Cheddar cheese is marketed overseas while butter is chiefly consumed in this country. When large quantities of cheese were being manufactured exports were correspondingly high, but as production declined exports also fell to low levels. In 1936 nearly 82,000,000 lb. were exported, the highest since 1932, and in the first ten months of 1937 they reached a total of 71,415,800 lb. The 1936 exports of Canadian Cheddar cheese represented 22.5 p.c. of the total cheese entering the British market from all countries, whereas in the two preceding years it was only 17 p.c.

For a few years butter exports were relatively high reaching the peak in 1925 with over 24,000,000 lb., but with the development of the home market export shipments of butter declined, and at times they have been reduced to quite insignificant quantities. Aided by a government equalization fund which guaranteed shippers against financial loss, the exports in 1935 amounted to 7,700,000 lb., most of which went forward in October of that year. In 1936 exports were only 5,000,000 lb., shipped principally during the period from July to November. During the first ten months of 1937, 2,096,300 lb. were shipped from Canadian ports, the principal movement beginning at the end of September. The exports of concentrated milk products have fallen somewhat in the past few years, declining from 28,000,000 lb. in 1933 to 25,000,000 lb. in 1935 and 21,000,000 lb. in 1936. During the first ten months of 1937, 25,474,100 lb. were shipped out of the Dominion.

Production of Dairy Products in Canada, by Provinces, 1936

Province	Butter		Cheese		Miscellaneous Factory Products	Milk Other- wise Used	All Products Expressed as Milk
	Creamery	Dairy	Factory	Farm- Made			
	lb.	lb.	lb.	lb.	'000 lb.	'000 lb.	'000 lb.
P.E.I.	2,072,800	1,862,000	283,000	300	477	54,921	150,686
N.S.	5,780,000	6,500,000	-	30,000	12,740	175,228	475,783
N.B.	3,480,500	6,674,000	412,100	5,000	3,109	172,786	418,294
Que.	73,366,000	14,099,000	24,969,000	255,000	19,203	2,061,814	4,411,073
Ont.	86,011,800	31,240,000	87,245,600	132,000	209,031	2,821,242	6,753,775
Man.	22,736,500	9,255,000	1,749,300	167,000	7,819	319,334	1,097,541
Sask.	24,126,500	21,000,000	512,200	150,000	5,183	433,000	1,502,012
Alta.	25,375,000	13,000,000	1,445,000	225,000	7,839	486,700	1,411,662
B.C.	5,791,400	2,751,000	463,200	68,000	49,930	265,000	520,847
Totals, 1936	248,740,500	106,381,000	117,079,400	1,632,300	315,331	6,790,625	16,741,613
1935	240,918,799	106,949,000	106,427,390	1,018,300	290,197	6,786,685	16,356,661

Value of Dairy Products in Canada, by Provinces, 1936

Province	Butter		Cheese		Miscellaneous Factory Products	Milk Other wise Used	All Products ¹
	Creamery	Dairy	Factory	Farm- Made			
	\$	\$	\$	\$	\$	\$	\$
P.E.I.	458,100	369,000	35,400	28	38,900	552,000	1,594,428
N.S.	1,482,300	1,625,000	-	4,000	624,000	2,368,000	6,495,300
N.B.	807,500	1,602,000	57,800	1,000	237,500	1,964,000	5,024,800
Que.	16,874,200	2,961,000	3,121,100	35,000	1,875,700	25,255,000	52,284,000
Ont.	20,642,800	5,748,000	10,469,500	16,000	11,116,700	40,390,000	91,282,000
Man.	4,945,200	1,596,000	223,900	21,000	737,700	3,019,000	11,630,800
Sask.	5,187,200	3,255,000	69,100	19,000	408,900	5,871,000	15,920,200
Alta.	5,506,400	2,080,000	187,500	25,000	602,600	6,319,000	15,755,500
B.C.	1,447,800	468,000	69,500	17,000	2,153,500	3,705,000	8,244,800
Totals, 1936	57,331,500	19,764,000	14,234,100	138,628	17,795,500	89,431,600	298,238,428
1935	52,229,133	18,182,000	10,570,309	111,623	16,765,958	86,151,000	192,410,423

¹Includes the value of skim milk and buttermilk.

Fruit Growing

Certain sections of Canada, by reason of favourable soil and climatic conditions, are particularly well suited to fruit growing. The Annapolis valley of Nova Scotia, the Niagara peninsula in Ontario and the Okanagan valley of British Columbia are world-famous centres of production. Experimental shipments of Nova Scotia apples were first made in 1861 but not until 20 years later did the trade develop into a successful commercial venture. Up to 1890, the annual production of apples in Nova Scotia rarely exceeded 100,000 barrels; but after that date there was a pronounced increase in acreage and in production which later reached 1,000,000 barrels in 1909 and 1,900,000 barrels in 1911. The all-time high record for production was established by the crop of 1933 which reached the total of 2,438,000 barrels. The great bulk of the Nova Scotia crop is exported to Britain.

In Ontario, where the commercial production of all varieties of fruits has reached its highest development, apples have been grown from the middle of the 18th century but commercial orcharding has developed only

during the past 60 or 70 years, following the improvement in transportation facilities. In addition to apples, practically all other temperate-zone fruits are grown in Ontario but the strawberry, peach, and grape are the most important from the revenue-producing standpoint. Some Ontario fruit is exported to British and continental European ports but most of it is marketed in the province and in other parts of Canada.



Harvesting Peaches at Queenston Heights, Ontario.

Courtesy, Canadian Government Motion Picture Bureau.

In British Columbia, commercial fruit growing is of comparatively recent origin, growth in production having been particularly rapid since 1910. The high point was reached in 1934 with a crop of 5,404,000 boxes of apples. Other tree fruits such as pears, plums and prunes, cherries, peaches and apricots are all grown in commercial quantities while all the berry crops are grown extensively in the province. The Prairie Provinces and Eastern Canada absorb a large part of the production while considerable quantities of apples are exported to British and foreign markets.

In New Brunswick and Quebec, fruit growing is also fairly important with production gradually increasing. Apples and strawberries are the principal crops.

In 1936, the total value of commercial fruit production in Canada was \$14,968,700, including: apples, \$9,789,000; pears, \$602,500; plums and prunes, \$241,700; peaches, \$658,000; cherries, \$480,300; strawberries, \$1,929,100; raspberries, \$703,900; loganberries, \$68,300; and grapes, \$495,200. Conditions during 1937 were favourable for the development of fruit crops and practically all fruits showed substantially larger production than during 1936.

CHAPTER V

MINES AND MINERALS

The Growth of Mineral Production in Canada.—Records of Canada's mineral production are available back to 1886. In that year the total value of the mineral output amounted to little more than \$10,000,000; at the turn of the century this had increased to \$66,000,000, or nearly seven-fold, mainly as a result of the gold discoveries of the Yukon. Notwithstanding occasional reverses in trend, the widespread exploration and scientific development of mineral deposits combined with technological advances in milling and metallurgy resulted in an almost continuous increase in output of metals up to 1929, in which year the Canadian mineral production was appraised at over \$310,000,000. Since the depression low of 1932, the growth in the mining industry in Canada has been unparalleled and in the past three years has exceeded 1929, establishing new annual records for the quantities of most metals produced in the Dominion. Production in 1936 reached \$361,919,372; the estimated production for the first six months of 1937 is given on p. 62.



Asbestos Mines at Thetford Station, P.Q.

Courtesy, Canadian Government Motion Picture Bureau.

Canada, according to the latest statistics available, has \$800,000,000 of capital employed in her mining industry which includes the production of metals, coal, oil, gas, asbestos, gypsum, salt, and various other non-

metallic minerals and structural materials such as brick, cement, lime, sand and gravel, and stone. About 80,000 employees receive in salaries and wages \$100,000,000 annually, and the welfare of many more thousands employed in the manufacture of explosives, chemicals, machinery, and textiles, in agriculture, and in transportation services depends to a very large extent upon the growth of this great basic industry.

Metallies.—The greater part of Canadian metal production comes from the Precambrian Shield and the Cordilleran region of British Columbia. A considerable proportion of the rocks comprising these areas are drift-covered and still unprospected, yet the profitable exploitation of known Canadian mineral deposits, largely within the past decade, has firmly established Canada in a high position among the leading mineral-producing countries of the world; especially with regard to gold, silver, and the industrial non-ferrous metals, all of which she produces in relatively large quantities. Out of every one hundred dollars worth of gold brought to the surface in 1936, Canada supplied eleven dollars worth. Canada has a virtual monopoly of nickel, her mines yielding 90 p.c. of the world production; she supplies more than half of the world production of platinum metals; 12 p.c. of the copper and lead; and 10 p.c. of the zinc. Among all countries, Canada stands first in the production of nickel and of platinum; second in radium; third in the production of gold and zinc; and fourth in lead and in copper.

The history of the production of gold in Canada, as in every country, is most colourful. Early production was generally from placer deposits and the discovery of gold about 1860 in the rivers of British Columbia attracted world-wide attention to the mineral possibilities of that province and influenced, to a considerable degree, the decision to build a trans-continental railway uniting British Columbia with its sister provinces to the east. The lode gold mines of this same province brought about the opening of the country along the southern boundary and the smelting of these ores was followed by the building of the Crow's Nest Pass railway in 1898, a transportation link designed for the haulage of smelter fuel.

Next in the sequence of more important gold-mining developments was the discovery and development of the Klondike placers in 1896. There was considerable activity in the eastern Precambrian areas at the same time. Cobalt, found when the Temiskaming and Northern Ontario railway was built in 1903, provided the incentive and money for the development of the Porcupine gold area which was discovered in 1909. The development of the Kirkland Lake gold camp followed soon after (1911), then the mines of northwest Quebec and central Manitoba, and, more recently, the auriferous lodes of the Great Slave Lake and Lake Athabasca areas of the Northwest Territories and Saskatchewan, respectively.

Excepting the war years of 1917 and 1918, and for several years thereafter (years of high costs), production of gold grew steadily until 1932, when the value of output was nearly double that of 1926. Between 1931 and 1934 gold advanced in price from \$20.67 per fine ounce to \$35; this permitted the mining of lower-grade ores and consequently proved an incentive to prospecting (in Canada the grade has fallen from 0.42

fine ounce per ton in 1932 to 0.29 fine ounce per ton in 1936). For a year or two, the actual output in fine ounces was less; however, concurrently with this, new mines were found and equipment at the older properties was enlarged. These factors resulted in a record output in 1935 which was again topped in 1936. Last year the value of the gold output of Canada was more than 50 p.c. of the total value of all metals produced and 36 p.c. of the total value of all metals and minerals produced.

The period from 1925 to 1935 will probably be considered by the historian of the future as being one of the most interesting and significant decades in the history of gold. During this period Great Britain, the United States and several Continental European countries went off the gold standard; as stated above, there were increases in the price of the metal from the old standard value of \$20.67 to \$35; and an expansion in world gold production of approximately 61 p.c. The value of the world's monetary stocks of gold, expressed in United States currency, increased from \$9,277,662,000 to \$21,682,313,000, or from about \$4 to \$10 per (world) capita in the same decade. Paradoxical as it may appear, it is a fact that the index of world wholesale prices declined almost steadily from about 250 in 1925 to less than 150 in 1933—this in conjunction with a very rapidly increasing gold production. Since 1933, however, the index has risen to over 160.

Silver production reached its peak during the Cobalt boom—the peak year being 1910, seven years after the discovery of the camp. Canada, however, still produces substantial amounts, the famous Sullivan lead-zinc mine in British Columbia accounting for more than six million ounces annually and the nickel-copper ores of Sudbury, two million ounces. Production last year reached eighteen million ounces and came from various sources, for silver is associated with almost every economic metalliferous ore mined in Canada—from the gold ores of Nova Scotia on the one hand to the radium-uranium ores of the Northwest Territories on the other.

Copper has had an interesting history in Canada. In 1848 the Montreal Mining Company commenced operations at Bruce Mines in Ontario, while early production in the '60's came from a mine in Quebec, a property which is still producing. Later, interest shifted to the boundary country of British Columbia and Rossland (closed down for some years), then to the nickel-copper deposits of the Sudbury district, Ontario, the ores of which were extremely difficult to treat at that time but which, to-day, supply nearly 70 p.c. of Canada's total copper production. The Anyox camp in the Portland Canal area of British Columbia produced the metal from 1912 to 1935; cessation of operations at Anyox, however, has been largely compensated for by the re-opening of the Copper Mountain mine at Allenby. The discovery of the Horne (Noranda) ore body gave birth to a high-grade copper mine which has developed also into the third largest individual gold producer in Canada and the greatest economic factor in the successful development of mining in northwest Quebec. The opening up of the Flin Flon deposit in Manitoba gave to that province a definite and important status as a producer of copper. Lending stability to the

industry on the Pacific coast is the Britannia mine, a property representing almost the extreme western rim of Canada's far flung mineral domain. All these mines give direct support to urban centres and the increased purchasing power they provide is widely spread and of ever increasing value in the economic life of the nation. A few years ago practically all of Canada's copper was refined outside Canada; to-day, however, not only is a large percentage of Canadian production refined within the Dominion, but a considerable quantity is fabricated before leaving our shores.

In the case of lead and zinc, the Sullivan mine in British Columbia has placed Canada in an enviable position among the world producers of these allied metals. At first the ore was difficult to treat but tenacity of purpose and technical research finally resulted in the creation and development of the now great metallurgical and chemical industries of the Consolidated Mining and Smelting Company of Canada.

Production of nickel is reaching new peaks each year and new uses are continually being found for this metal. Incidentally, it should be mentioned that platinum metals occur with nickel ores, and it is the increase in the production of nickel that has resulted in placing Canada in first place among the world producers of platinum.

Radium is another Canadian-produced element that should be mentioned. Pitchblende was found by Gilbert Labine close to the Arctic Circle in 1930. The refining of this ore and the extraction of radium is now an established industry in Canada and Canadian production is making this rare element available to hospitals at prices substantially lower than those formerly prevailing.



The Carlson Compass.—This instrument, invented and recently patented by a Canadian employed at one of the large Ontario gold mines, is an instrument for measuring the direction and inclination of bore-holes at intervals along their courses. In surveying the bore-hole, the compass is placed in the tube containing a hot gelatine solution of specified strength. The tube is then lowered to the desired position in the hole where it is left for a sufficient length of time for the gelatine to harden or set. The compass is then withdrawn and the reading taken by the

operator. The azimuth, or bearing, is read directly by means of a compass needle on a horizontal scale and the inclination is shown directly by a set of pointers on a vertical scale. After the reading has been taken the glass tube containing the gelatine and compass is immersed in hot water to liquefy the gelatine and then the instrument can again be lowered into the bore-hole for another survey. The compass has been used for several years with satisfactory results.

Courtesy, Canadian Government Motion Picture Bureau and Dome Mines Limited.

**Mineral Production, calendar year 1936, and Official Estimate
January to June, 1937**

Item	1936		Six months January to June, 1937	
	Quantity	Value	Quantity	Value
METALLICS				
Gold..... fine oz.	3,748,028	\$ 77,478,612	1,966,858	\$ 40,658,562
Estimated exchange on gold produced	-	53,814,809	-	28,161,799
Silver..... fine oz.	18,334,487	8,273,804	9,605,095	4,322,262
Nickel..... lb.	169,739,393	43,876,525	111,610,392	29,218,283
Copper..... lb.	421,027,732	39,514,101	243,919,406	34,377,884
Lead..... lb.	383,180,909	14,993,899	199,204,302	11,667,399
Zinc..... lb.	333,182,736	11,045,007	170,535,713	9,348,768
Platinum metals..... fine oz.	131,571	5,320,731	68,244	3,685,858
Other metals.....	-	5,107,736	-	2,770,211
Totals.....	-	259,425,194	-	164,211,056
NON-METALLICS				
<i>Fuels</i>				
Coal..... ton	15,229,182	45,791,934	6,996,343	21,326,043
Natural gas..... M cu. ft.	28,113,348	10,762,243	15,536,287	5,983,142
Petroleum, crude..... bbl.	1,500,374	3,421,767	1,062,046	2,384,760
Peat..... ton	1,341	7,376	-	-
Totals.....	-	59,983,320	-	29,693,945
<i>Other Non-Metallics</i>				
Asbestos..... ton	301,287	9,958,163	197,800	6,678,083
Feldspar..... ton	17,846	154,475	8,425	77,216
Gypsum..... ton	833,822	1,278,971	377,198	648,250
Magnesian dolomite.....	-	768,742	-	340,907
Quartz..... ton	1,046,649	597,781	628,807	495,411
Salt..... ton	391,316	1,773,144	208,814	842,865
Sodium sulphate..... ton	75,598	552,681	37,817	264,784
Sulphur ¹ ton	122,132	1,033,055	62,055	544,425
Talc and soapstone.....	-	177,270	-	72,001
Other non-metallics.....	-	445,815	-	299,323
Totals.....	-	16,740,117	-	10,263,265
CLAY PRODUCTS AND OTHER STRUCTURAL MATERIALS				
Clay products (brick, tile, sewer pipe, pottery, etc.).....	-	3,471,027	-	1,596,548
Cement..... bbl.	4,508,718	6,908,192	2,090,006	3,200,000
Lime..... ton	468,401	3,335,970	269,314	1,918,000
Stone, sand, gravel, and slate.....	-	12,055,552	-	4,500,000
Totals.....	-	25,770,741	-	11,214,548
Grand Totals.....	-	361,919,372	-	215,382,814

¹ In sulphuric acid made and in pyrites shipped. ² Includes silica sand used for smelter flux.

Mineral Production of Canada, by Provinces, 1934, 1935 and 1936

Province or Territory	1934		1935		1936	
	\$	p.c. of total	\$	p.c. of total	\$	p.c. of total
Nova Scotia.....	23,310,729	8.4	23,183,128	7.4	26,672,278	7.4
New Brunswick.....	2,156,151	0.8	2,821,027	0.9	2,587,891	0.7
Quebec.....	31,269,945	11.2	39,124,696	12.5	49,736,919	13.8
Ontario.....	145,565,871	52.3	158,934,269	50.9	184,532,892	51.0
Manitoba.....	9,776,934	3.6	12,052,417	3.9	11,315,527	3.1
Saskatchewan.....	2,977,061	1.1	3,816,943	1.2	6,970,397	1.9
Alberta.....	20,228,851	7.3	22,289,681	7.1	23,305,726	6.4
British Columbia.....	41,206,985	14.8	48,692,050	15.0	54,407,036	15.0
Yukon.....	1,628,879	0.6	1,302,308	-	2,220,372	-
Northwest Terri- tories.....	40,204	-	127,938	0.5	170,334	0.7
Totals.....	278,161,599	100.0	312,344,457	100.0	361,919,372	100.0

Non-Metallics.—Coal.—Probably no subject presents a problem of greater general public interest in Canada than that of fuel supply. Two main causes have brought about this effect—disruption or sudden limitation of supplies from other countries and an ever-growing national appreciation of the value and extent of Canada's own coal resources.

The fuel situation in Canada is somewhat anomalous as, in spite of the enormous resources of coal in the country, about 50 p.c. of the consumption is imported. The Canadian coal areas are situated in the eastern and western provinces, while Ontario and Quebec are more easily and economically supplied with coal from the nearer coal-fields of Pennsylvania and Ohio. The movement of soft coal from the Maritime Provinces, however, has been accelerated through the generous assistance provided by the Dominion Government in the form of subventions; during 1936 about 1,681,000 tons were shipped to Quebec and eastern Ontario under Government assisted rates.

New Brunswick's bituminous coal demands are satisfied principally by her own and by Nova Scotia coal mines. Great Britain and the United States supply the larger part of the anthracite requirements of Eastern Canada although supplies are also received from Germany, French Indo-China, and Belgium.

Only Alberta among the Prairie Provinces is self-sufficient in coal requirements. The mines of Alberta also ship approximately 2,000,000 tons per year to Saskatchewan and Manitoba.

British Columbia's coal industry has suffered to a considerable extent from fuel-oil competition. Mines within the province supply the bulk of the coal consumed. Only minor tonnages are imported from other countries, but an increasing quantity is received annually from the neighbouring province of Alberta. The provincial output in 1936, while higher than in the preceding year, was only 44 p.c. of the 1910 total.

Petroleum and Natural Gas.—Canada's petroleum industry dates back to 1858 when the original discovery was made at Oil Springs, Ontario. Canadian production is now derived from the Stoney Creek field in New Brunswick, fields in southwestern Ontario, the Turner Valley, Red Coulee and Wainwright fields in Alberta, and the Fort Norman field in the Northwest Territories. The Turner Valley field is the principal source of the Canadian output. This field produces, in addition to light crude oil, large quantities of casing-head gasoline. Separators and absorption plants are employed to recover this fuel from its natural-gas carrier. Recently, acidation (the treatment of wells with acid) has resulted in important increases in production in several wells in the Turner Valley field. Despite the increased activity in the Canadian primary oil industry, this country still depends largely on outside sources—chiefly the United States, Colombia, Peru, and Venezuela—for its crude supplies.

Nature has endowed certain sections of Canada with abundant supplies of natural gas. The Stoney Creek field in New Brunswick, the Essex Peninsula field in Ontario, the Lloydminster field in Saskatchewan, and the Turner Valley, Viking, Medicine Hat, Wainwright, and Border fields in Alberta are the principal productive areas at the present time. The New Brunswick gas supplies Moncton and Hillsborough. Ontario's gas serves over 119,000 industrial and domestic users. The Saskatchewan gas

is consumed in the town of Lloydminster. The Turner Valley wet gas, after treatment, is piped into Calgary and surrounding points. Some of this gas is used in the field for drilling purposes, some is conveyed to the Bow Island field to repressure old wells, and large quantities, for which there is no use, are burned in the field. The Medicine Hat field supplies gas to the city of that name. The Viking field is the source of gas supply for Edmonton and points outside. Gas from the other fields supplies chiefly local demands.

Other Non-Metallics.—Asbestos.—Canada produces more asbestos than any other country and practically all of Canada's output comes from the Eastern Townships of Quebec. The fibre is of good quality and well adapted for spinning. Both open-cut and underground methods of mining are employed. The production in 1936 amounted to 301,287 tons and had a value of \$9,958,183.

Salt.—This mineral ranked second among the "other non-metallics" or industrial minerals in 1936, with a production valued at \$1,773,144. The greater part of the Canadian salt production comes from wells located in southwestern Ontario, but the Malagash deposits in Nova Scotia show an increasing production in recent years. The first production of commercial importance in Manitoba was recorded in 1932 and for Saskatchewan in 1933. Some shipments have been made from deposits near McMurray in Alberta. An important part of Canadian salt production (42 p.c. in 1936) is used in the form of brine in chemical industries for the manufacture of caustic soda, liquid chlorine and other chemicals.

Gypsum.—This is third in importance in this group, the output in 1936 being valued at \$1,278,971. Many large deposits of gypsum occur throughout Canada, but the production is chiefly from Hants, Inverness, and Victoria Counties, Nova Scotia; Hillsborough, New Brunswick; Paris, Ontario; Gypsumville and Amaranth, Manitoba; and Falkland, British Columbia. The Hillsborough deposit of gypsum in New Brunswick is of very high grade. Nearly 50 p.c. of Canada's production is exported in crude forms from the Nova Scotia deposits, which are conveniently situated for ocean shipping and account for about 75 p.c. of the total Canadian production.

In addition to these outstanding minerals there is a substantial annual production of other non-metallics, as will be seen from the table on p. 62.

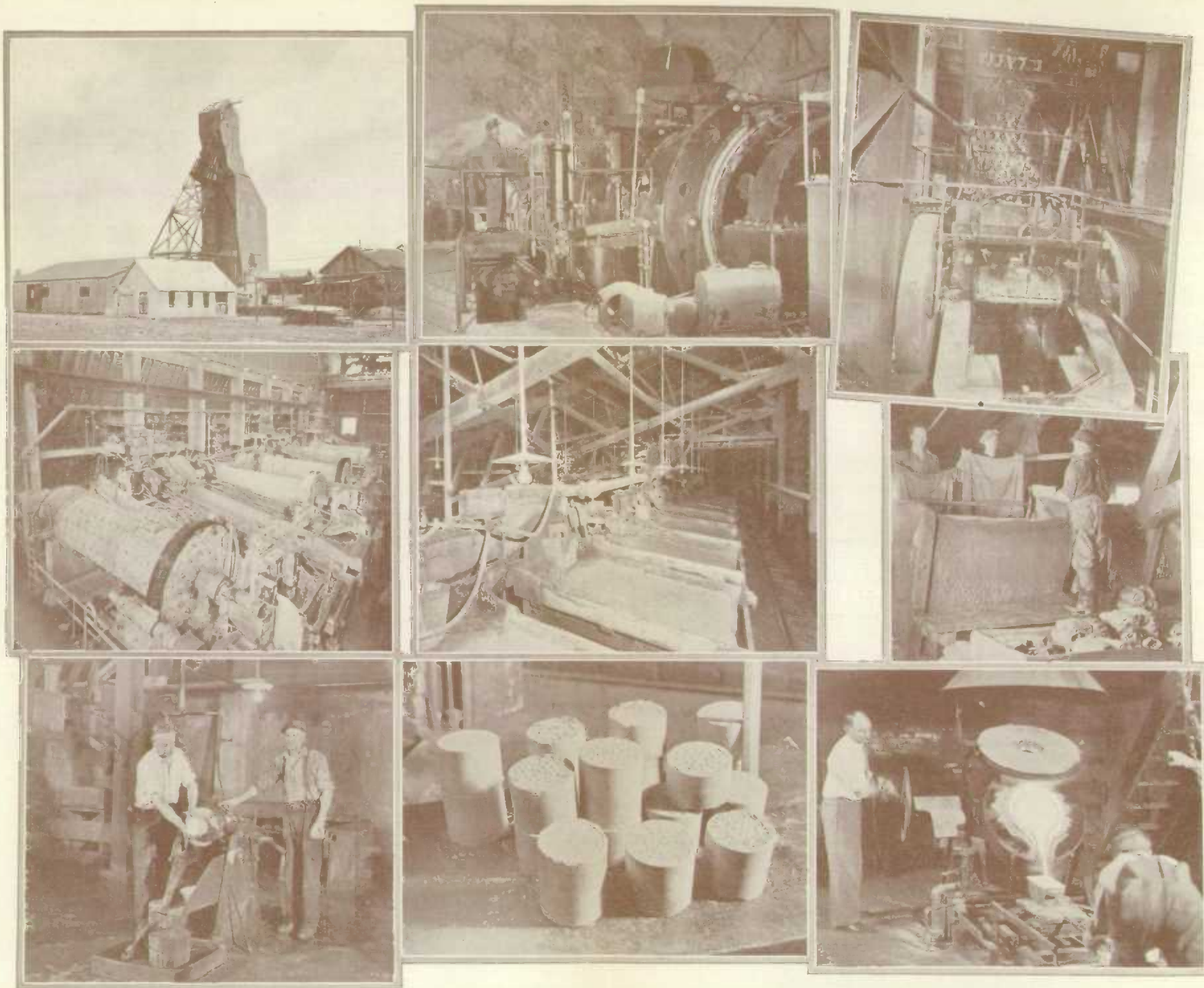
Clay Products and Other Structural Materials.—This group of products, while of much less importance, economically, than either the metallics or the non-metallics, nevertheless comprises many products which are of fundamental importance in internal trade and in the construction industries. Total production in 1936 was valued at \$25,770,741, of which stone, sand and gravel, and slate made up about 50 p.c. (\$12,055,552) and cement about \$7,000,000.

Production in the First Six Months of 1937.—Greater volume and improvement in prices during the first six months of 1937 combined to make the value of the mineral production of Canada the greatest for any corresponding period in the history of mining in the Dominion. The figures appearing in the table on p. 62 forecast the possibility of many new records being established when totals for the present year are compiled.

Gold Extraction Operations in the Porcupine Mining Area, Ontario

The Porcupine gold-mining area of Ontario, while not the richest in gold content of the ore, contains some of Canada's largest and oldest gold mines such as Hollinger and Dome. The layout (overleaf) reading from left to right and from top to bottom shows: (1) main head frame and surface buildings; (2) an underground hoist on the 16th level; (3) chain gate and jaw crusher into which the ore is first fed; (4) tube mills with classifiers in closed circuit where the crushed ore is finely pulverized; (5) and (6) general views of blanket tables. The gold is caught in the ribs of the cloth. The blankets are then removed, placed on wheel cars and conveyed to tanks where they are washed out. The gold is then amalgamated with mercury and fed to presses shown in (7). (7) The press squeezes the gold amalgam into a cake which is then removed and weighed; (8) eighteen gold amalgam cakes ready for retorting. Each cake contains an average of 200 ounces of gold and 200 ounces of mercury. (9) After retorting, the amalgam is reduced to a gold sponge which is melted in an oil furnace and poured into moulds.

GOLD EXTRACTION OPERATIONS IN THE PORCUPINE MINING AREA, ONTARIO



Courtesy, Canadian Government Motion Picture Bureau, Dome Mines, Limited, and McIntyre Mines, Limited.

Following the attainment of a record year in 1936, the rise during the first half of 1937 to \$215,382,814 was nearly fifty million dollars greater than in the same period of 1936. The value of metal production increased 35 p.c.; fuels, 6 p.c.; non-metallic minerals (other than fuels), 51 p.c.; and structural materials, 29 p.c.

Metallics.—All the chief metals mined in Canada showed substantial increases in production for the six-month period. Gold increased 11 p.c. in both quantity and value; nickel, 34 p.c. in quantity and 36 p.c. in value; lead, 10 p.c. in quantity and 83 p.c. in value; zinc, 8 p.c. in quantity and 79 p.c. in value; and silver, about 10 p.c. in both quantity and value.

Non-Metals.—The tonnage of coal mined from January to June, 1937, advanced 1.6 p.c. over that produced in the same period of 1936. Increased movement of Nova Scotia coal to Quebec and Ontario took place under Government subvention and there was an accelerated movement from British Columbia for bunkering purposes.

An advance of 57.3 p.c. was recorded in the output of crude petroleum and natural gasoline in Canada during the first six months of 1937 as compared with the corresponding months of 1936; the totals were 1,062,046 barrels and 674,992 barrels, respectively. This increase was entirely accounted for by the Turner Valley field in Alberta.

Non-metals other than fuels showed substantial increases. Asbestos output increased 64 p.c. in quantity and 66 p.c. in value. Salt, gypsum, sulphur, feldspar, graphite, and mica were among the other more important minerals of this group with notable gains. Structural materials—the chief items of which are: clay products; cement; lime; and stone, sand and gravel—increased by 29 p.c. in value.

A number of interesting developments in Canadian mining during 1937 may be mentioned. Several new gold mines began production in Quebec and Ontario. The copper industry showed improvement with the coming into production of two mines in Quebec, one in Manitoba, and one in British Columbia. Greater shipments from the Yukon were the chief factor in the increased output of silver. Work began on the rebuilding of the surface plant at the new Helen iron mine in Michipicoten, with a view to production in the near future as a direct result of the Ontario bounty on iron ore.

The spectacular growth of petroleum production has been indicated above. The rate of increase has been accelerated in the later months of the year, and is due to the bringing in of new crude oil wells in the Turner Valley field, Alberta, and to the effective use of acid in increasing the flow of the wells. This use of acid to increase petroleum production is not new, but has been employed only within the past year in the Turner valley. Potential production has already outgrown present demand with the result that output has been curtailed during the later months of the year.

CHAPTER VI

THE FOREST WEALTH OF CANADA— LUMBERING—PULP AND PAPER

According to the latest figures of the value of production, the forests of Canada rank third, after agriculture and mining, among the primary industries. It is estimated that forest products make up about 17 p.c. of all the freight hauled on Canadian railways. The large excess of exports

over imports which the group "wood, wood products and paper" provides, amounting to \$195,271,604 for the fiscal year ended March, 1937, constitutes an influential factor in Canada's international trade.

Of the total forested area of 1,254,082 square miles, about 31.5 p.c. carries merchantable timber and 32.3 p.c. carries young growth. The remaining 36.1 p.c. is non-productive under present conditions.



Loading a Truck with Heavy Timbers in British Columbia.

Courtesy, Hayes Manufacturing Co. Ltd., Vancouver.

has been estimated at 170,142,000,000 cubic feet of which 68 p.c. is located in the eastern provinces, 15 p.c. in the Prairie Provinces, and 18 p.c. in British Columbia. In addition to this there is estimated to be 103,514,000,000 cubic feet of standing timber which is inaccessible under existing conditions. Our total forest resources of 273,656,000,000 cubic feet are capable of being converted into 425,250,000,000 board feet of sawn lumber, and 1,746,639,000 cords of pulpwood, ties, poles, and similar forest products.

While the average annual drain on this resource (including loss by fire, insects and other agencies) may be in excess of the average annual

increment, the rate of consumption will, no doubt, be reduced as the supply diminishes and losses due to fires, wasteful utilization, and other preventable causes are curtailed. An annual increment of 10 cubic feet per acre, which is quite possible under forest management, would provide in perpetuity for the needs of a population of over twenty-six millions at the average annual rate of use, which amounts to about 271 cubic feet per capita.

Represented in the three great forest divisions of Canada are approximately 160 different species of plants reaching tree size. Only 31 of these species are coniferous, but the wood of these forms 80 p.c. of our standing timber, and 95 p.c. of our sawn lumber.

Operations in the Woods

The value of forest production resulting from operations in the woods of Canada is, according to latest figures (1935), over \$115,000,000 annually,



Breaking up a Log Jam in Eastern Canada.

Courtesy, Canadian Ingersoll-Rand Company Limited, Montreal.

being made up of logs and bolts for sawmills valued at \$34,000,000; pulpwood for domestic use and export valued at \$41,000,000; firewood valued at \$32,000,000; hewn railway ties valued at \$3,000,000; poles valued at \$1,000,000; and other primary forest products, such as square timber, fence posts and rails, and wood for distillation. The total value of forest products for 1935 shows an increase over 1934 with increases in all the principal products. (See table on next page.) It has been estimated that this rate of total primary forest production involves the cutting of about 2,300,000,000 cubic feet of standing timber annually. The felling and harvesting of a hundred cubic feet of standing timber (roughly equivalent

to half a thousand board feet of sawlogs or a cord of pulpwood) is a liberal allowance for an average day's work for men employed in the woods and in the transportation of forest products to the mills or the market. Logging, however, is a seasonal operation at which the average labourer works less than a hundred days a year. It is therefore evident that the annual harvesting of our 2 billion cubic feet of standing timber provides regular employment for at least 200,000 men. Probably twice that number are given at least part-time employment in the woods. This work is provided chiefly during the winter months when employment in other fields is at its lowest ebb. The steadying effect of operations in the woods on the employment situation and the fact that it provides a source of cash income for farmers and settlers during the winter should be more fully appreciated. In connection with operations in the woods, the forests not only provide the raw material for the sawmills, pulp-mills, wood distillation, charcoal, excelsior and other plants, but also 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 which are finished in the woods ready for use or exportation. There are also a number of minor forest products, such as maple sugar and syrup, balsam gum, resin, cascara, moss and tanbark, which all go to swell the total.

The following table gives the total value of the products of woods operations in Canada for the years 1931 to 1935, inclusive.

Value of the Products of Woods Operations, by Products, 1931-35

Product	1931	1932	1933	1934	1935
	\$	\$	\$	\$	\$
Logs and bolts.....	32,889,204	18,029,759	23,158,381	29,115,515	34,077,938
Pulpwood.....	51,913,243	36,750,910	31,141,104	38,302,807	41,195,871
Firewood.....	44,237,948	30,627,632	33,213,973	31,489,524	31,861,500
Sawn railway ties.....	4,144,109	1,353,664	1,370,750	1,541,901	3,188,651
Square timber.....	151,114	99,403			
Poles.....	3,057,546	1,411,209	903,951	1,091,046	1,359,736
Round mining timber.....	958,681	809,700	841,982	954,059	997,357
Fence posts.....	1,388,074	990,568	969,291	988,884	976,402
Wood for distillation.....	266,080	251,281	342,107	268,847	274,797
Fence rails.....	454,205	253,077	215,521	262,519	266,253
Miscellaneous products.....	1,603,666	1,529,049	1,556,082	1,506,630	1,260,274
Totals	141,123,930	92,106,252	93,773,142	105,539,732	115,461,779

¹ Included with "Miscellaneous products" in 1933, 1934 and 1935.

The Lumber Industry

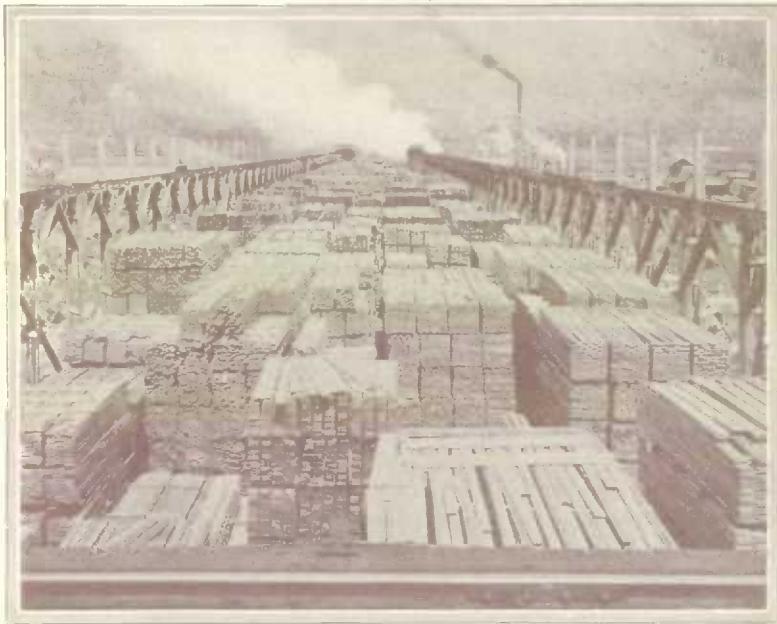
Except in Nova Scotia, 90 p.c. of the forest land is still the property of the Crown—the lumbermen having been granted cutting rights only—and is administered by the various provincial departments.

Canada's sawmills produced, in 1935, 2,973,169 M feet board measure of sawn lumber, valued at \$47,911,256. The greater part of this lumber is coniferous softwood, as the supply of the more valuable hardwoods such as hickory, oak, and walnut (once plentiful in southern Ontario and Quebec) has been almost exhausted. The mills also produced 3,258,253 thousand shingles, valued at \$7,593,765; 226,854 thousand lath, valued at \$536,087; as

well as numerous other products, bringing the total value of the products of the industry up to \$65,905,132, an increase of 20.3 p.c. over the value of production for the previous year.

Production of Sawn Lumber and All Sawmill Products, 1935

Province	Sawn Lumber Production		Total Sawmill Products
	M. ft. b.m.	\$	\$
Prince Edward Island.....	6,226	105,184	129,800
Nova Scotia.....	140,236	1,865,612	2,276,841
New Brunswick.....	230,751	3,794,122	4,453,221
Quebec.....	453,956	7,423,881	9,862,342
Ontario.....	351,085	8,283,292	10,696,071
Manitoba.....	67,877	913,667	951,851
Saskatchewan.....	34,621	555,386	625,177
Alberta.....	78,070	975,055	1,198,640
British Columbia.....	1,610,347	23,995,057	35,713,189
Totals.....	2,973,169	47,911,256	65,905,132



Eight Million Feet of Douglas Fir Lumber Ready for the Export Trade.

Courtesy, Publicity Division, Department of Trade and Commerce.

The above table gives the production of sawn lumber, and of total sawmill products, by provinces, in 1935. British Columbia produced over 54 p.c. of the total value, Ontario 16 p.c., Quebec 15 p.c., followed by New Brunswick, Nova Scotia, Alberta, Manitoba, Saskatchewan, and Prince Edward Island in the order named.

Markets for Canadian lumber now include practically all the more important countries of the world. Canadian wood enjoys a preference in the British market and the value of Canada's exports of unmanufactured or partially manufactured wood to Great Britain has increased from \$4,848,157 in 1932 to \$21,829,448 in 1936. The housing schemes which have been undertaken recently and the changed trend in type of construction have greatly increased the quantity of timber going into construction work. Canadian timbers are well regarded in that market.

The Pulp and Paper Industry

The pulp and paper industry ranks first among Canadian manufacturing industries in employment and wage and salary distribution. It is second to the non-ferrous smelting and refining group with respect to gross production and second to the central electric stations with respect to capital invested and net value of production. Its development has taken place for the most part during the present century, and is due chiefly to the existence in Canada of abundant water powers adjacent to extensive resources of the various pulpwood species.

This industry has headed the lists in wage and salary distribution since 1922 when it replaced the sawmills in this respect. It was first in gross value of production from 1925, when it replaced the flour mills, until 1935 when it was overtaken by the non-ferrous metal group. In these comparisons only the manufacturing stages of the pulp and paper industry are considered, no allowance being made for the capital invested, employment furnished, payroll, or production of those operations in the woods which form such an essential part of the industry as a whole.

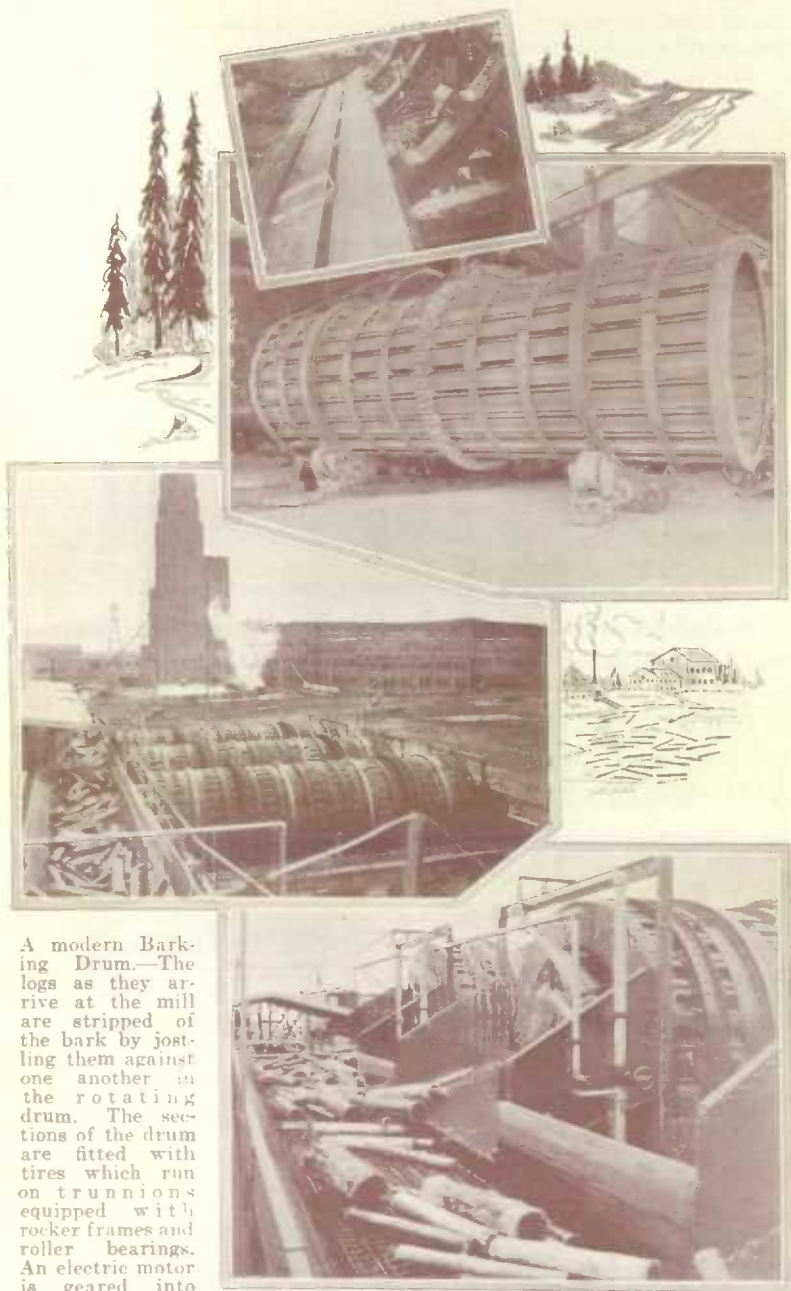
The value of gross output of the industry increased rapidly and steadily until the boom years following the Great War when it jumped to a peak of over \$232,000,000 in 1920. This was followed, in 1921, by a drop which was general throughout the industrial field. From that year on there was a steady recovery resulting in a total for 1929 of \$243,970,761 followed by successive decreases to \$123,415,492 in 1933. The large decreases of these four years were due to both lower price levels and diminished production: however, for 1933, production was substantially greater than for the previous year although the total value was nearly 10 p.c. less. In 1934, 1935, and 1936 quantity and value production both increased. The gross value of production increased by 23.7 p.c. in 1934, by 6.6 p.c. in 1935, and 13.8 p.c. in 1936, when it reached a total of \$185,144,603.

The following statement gives the gross and net values of production for the industry as a whole for the six years 1931 to 1936.

	Gross Production	Net Production
1931	\$ 174,733,954	\$ 87,858,357
1932	135,648,729	68,855,923
1933	123,415,492	56,880,641
1934	152,647,756	77,253,752
1935	162,651,282	81,944,813
1936	185,144,603	87,150,666

There are three classes of mills in the industry. These, in 1936, comprised 25 mills making pulp only, 44 combined pulp and paper mills, and 24 mills making paper only.

BARKING DRUMS OF THE PULP AND PAPER INDUSTRY



A modern Barking Drum.—The logs as they arrive at the mill are stripped of the bark by jostling them against one another in the rotating drum. The sections of the drum are fitted with tires which run on trunnions equipped with rocker frames and roller bearings. An electric motor is geared into the drive shown in the centre of the section. The close-up view shows how the "channels" of the drum are kept in place. The lower pictures show the feed end of a battery of drums, and barked logs passing from the drums to the conveyor belt.

Courtesy, Watrous Limited, Brantford, and Canadian Ingersoll-Rand Co., Ltd., Montreal.

In 1936 the 69 mills making pulp produced 4,485,445 tons valued at \$92,336,953, representing an increase of 16.0 p.c. in quantity and an increase of 15.8 p.c. in value over 1935; over 79 p.c. by quantity was made in combined mills and used by them in papermaking. About 4 p.c. was made for sale in Canada and 17 p.c. was made for export.

Of the total pulp production in Canada in 1936, 65 p.c. was ground wood, 16 p.c. unbleached sulphite, 10 p.c. bleached sulphite, 6 p.c. sulphate, and the remaining 3 p.c. screenings, etc.

The total production of paper in 1936 was 3,807,329 tons, which, with certain converted paper products, was valued at \$147,854,652. Newsprint and similar paper made up 3,225,386 tons, or 85 p.c. of the total, valued at \$105,214,533; paper boards made up 9 p.c.; wrapping paper 3 p.c.; book and writing paper 2 p.c.; and tissue and miscellaneous papers the remainder.

In the past few years there has been a tendency in Canadian paper mills toward the further conversion of many of these basic papers and boards into more highly manufactured products such as napkins, towels, packaged toilet papers, coated and treated papers, envelopes, stationery, and other cut paper and boards.

These converted paper products in 1936 were valued at \$4,075,067 and the value added to the basic stock by the conversion was \$1,422,718. The bulk of this paper converting is still carried on by separate converting mills classified in other industrial groups.

Production of Newsprint and Other Paper in Canada, 1928-36

Year	Newsprint Paper		Other Paper ¹		Total Paper	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	\$	tons	\$	tons	\$
1928	2,414,393	144,146,632	434,806	40,158,773	2,849,199	184,305,405
1929	2,725,331	150,800,167	471,818	42,189,095	3,197,149	192,989,252
1930	2,497,952	136,181,863	428,835	37,123,991	2,926,787	173,305,874
1931	2,227,052	114,419,637	384,173	32,210,252	2,611,225	146,629,889
1932	1,919,205	85,539,852	371,562	28,333,271	2,290,767	113,873,123
1933	2,021,905	66,959,501	397,455	29,730,374	2,419,420	96,689,875
1934	2,604,973	86,811,460	464,543	34,080,765	3,069,516	120,892,225
1935	2,765,444	91,762,201	515,452	37,316,185	3,280,896	129,078,386
1936	3,225,386	105,214,533	581,943	41,217,401	3,807,329	146,431,934

¹ These figures include book and writing paper, wrapping paper, paper boards and other paper products.

The Canadian production of paper has increased almost four times in the period from 1917 to 1936, in spite of the decreases in 1921, 1930, 1931, and 1932. Practically all the different kinds of paper used in Canada at the present time can be produced in Canadian mills.

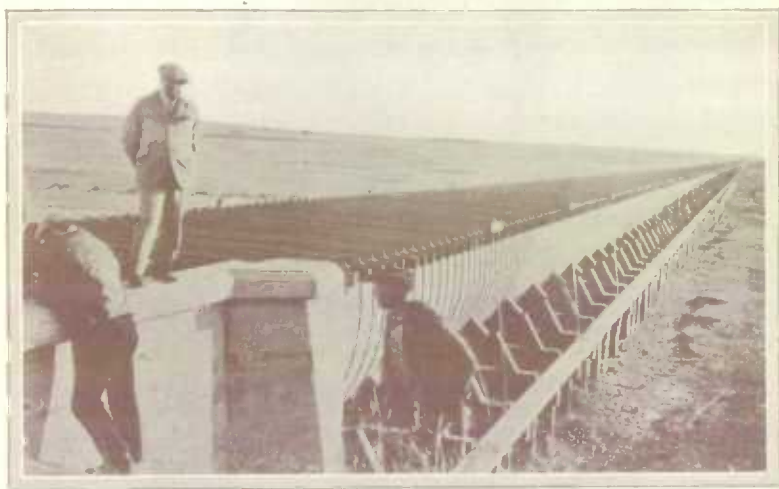
Canada's newsprint production in 1936 was three and a half times that of the United States, a few years ago the world's chief producer. In 1913 the production across the border was over three times as much as in Canada, but during the following 13 years, while production still increased in both countries, the gain in Canada was over 437 p.c. as compared with less than 30 p.c. for the United States.

The latest monthly figures of Canadian newsprint production are:—

1937—	tons	1937—	tons	1937—	tons
January	287,691	May	309,232	September	312,351
February	275,32	June	310,871	October	314,594
March	301,110	July	314,529	November	—
April	298,347	August	318,713	December	—

Trade in Newsprint and Other Forest Products.—A striking reflection of the increased production of newsprint between 1910 and 1936 is seen in the trade figures. The export trade in paper did not develop until the beginning of the present century. By 1910, however, the exports of newsprint paper were valued at over \$2,000,000; in 1920 they were valued at over \$53,000,000, and even during the subnormal fiscal year 1933-34 Canada exported 2,024,057 tons of newsprint valued at \$73,238,482. For the fiscal year 1936-37 the exports were 3,144,985 tons valued at \$110,176,448. This single item of export thus, at present, ranks second only to wheat, Canadian newsprint is exported to more than thirty countries and our total exports are greater than those of the rest of the world combined.

At the time of Confederation forest products exported were largely in an unmanufactured state, such as logs and square timber, and made up over 41 p.c. of the total export trade. To-day, while the wood and paper group forms a smaller part of the total (about 21 p.c. for the fiscal year 1936-37), its character has changed. Fully or chiefly manufactured goods now form about 71 p.c. and unmanufactured or partly manufactured, 29 p.c. Raw materials form only a small part of the total.



Creosoted Douglas Fir Irrigation Flume in Western Canada.

Courtesy, Forest Products Laboratory, Department of Mines and Resources.

Industries Founded on Wood and Paper.—During 1935, for the further processing of the products of the sawmills and pulp and paper mills, already dealt with in detail in this chapter, there were 4,393 establishments which used lumber or paper as their principal raw materials, 1,966 depending on sawmills and 2,427 depending on the paper mills for such materials. They employed 70,161 workers who were paid \$74,591,554 and their products were valued at more than \$212,603,973. Many other industries use wood or paper to a limited though necessary extent and no industrial activity is entirely independent of the use of paper or wood in some form.

CHAPTER VII

THE FISHERIES OF CANADA

Fishing is one of the earliest and most historic industries of Canada. In 1497 Cabot discovered the cod banks of Newfoundland when he first sighted the mainland of North America, and Fernandez de Navarrete mentions in his records the French, the Spaniards and the Portuguese as frequenters of the "Grand Banks" before 1502. Cape Breton, one of the earliest place names in America, takes its name from early French fishermen. The fishing then was by hand lines over barrels attached to the bulwarks to prevent fouling, the vessels remaining during fine weather and then returning to France with their catches. Voyages along the coast soon showed the cod as plentiful inshore as on the outer banks and it



His Excellency the Governor General of Canada included an afternoon of salmon angling in his tour of the Maritime Provinces during the early summer of 1937. The picture shows Lord Tweedsmuir embarking for the famous Hart's Island Pool of the St. John River, N.B. *Inset:* His Excellency is all attention while his tackle is being adjusted; Col. the Hon. Murray MacLaren, C.M.G., Lieut.-Governor of New Brunswick, is in the background.

Courtesy, Provincial Bureau of Information, Fredericton, N.B.

became common for a crew to anchor in a bay, erect a hut on shore and make daily excursions to the fishing grounds, the product being salted and dried on land and at the end of the season shipped to France. Soon the fishermen began to remain all winter and thus permanent fishing settlements were established. Until the arrival of the United Empire Loyalists, the cod fishery was the only one systematically prosecuted, and attention had been given to the shore fishery alone. No deep-sea fishing vessel put out from Lunenburg (now the chief centre of the deep-sea fishery) until 1873.

Canada has perhaps the largest fishing grounds in the world. On the Atlantic, from Grand Manan to Labrador, the coast line, not including the lesser bays and indentations, measures over 5,000 miles. The bay of Fundy, 8,000 square miles in extent, the gulf of St. Lawrence, fully ten times that size, and other ocean waters comprise not less than 200,000 square miles or over four-fifths of the area of the fishing grounds of the North Atlantic. In addition there are on the Atlantic seaboard 15,000 square miles of inshore waters controlled entirely by the Dominion. The Pacific coast of the Dominion measures 7,180 miles in length, and inland lakes contain more than half of the fresh water on the planet. Canada's share of the Great Lakes alone has an area of over 34,000 square miles.

Canada's list of food fishes embraces nearly 60 different kinds, chief among which are the salmon, the lobster, the cod, the herring, the whitefish, the halibut, the haddock, the pickerel, and the trout.

The Government and the Fisheries

At the present time the Dominion Government controls the tidal fisheries of the Maritime Provinces and British Columbia and the fisheries of the Magdalen islands in Quebec province. The non-tidal fisheries of the Maritime Provinces, Ontario and the Prairie Provinces and both the tidal and non-tidal fisheries of Quebec (except the Magdalen islands) are controlled by the respective provinces, but the right of fisheries legislation for all provinces rests with the Dominion Government. The fisheries under the control of the Dominion Government are administered by the Department of Fisheries, which was created as a separate department in 1930. A large staff of inspectors, guardians and supervisors is employed to enforce the fishery laws, and a fleet of vessels patrols the coastal and inland waters to prevent poaching and to assist in the carrying out of the regulations. The main object of legislation has been the prevention of depletion, the enforcement of close seasons, the forbidding of pollutions and obstructions and the regulation of fishing operations generally. Stations under the direction of the Biological Board of Canada* for the conduct of biological research are established at Halifax, N.S., St. Andrews, N.B., Nanaimo, and Prince Rupert, B.C., and in Gaspé County, P.Q. A marine biological station, chiefly for oyster investigation work, is conducted at Ellerslie, P.E.I., and a substation for salmon investigation at Cultus Lake, B.C. The Biological Board employs a permanent staff of scientists, and in addition voluntary research workers are drawn from various Canadian

* Under c. 31 of the Statutes of 1937, the Biological Board Act is repealed and the Fisheries Research Board of Canada is created to take over the duties of the former Board as from Jan. 1, 1938.

THE OYSTER FISHERIES OF PRINCE EDWARD ISLAND



The layout shows: (1) Floats from which the oyster "spat collectors" (concrete egg crate fillers) are suspended. Oysters settle on these at the swimming stage. (2) Superintendent examining the "collectors" during the period the young oysters are expected to settle. (3) Oyster fishermen "tonging" (fishing) oysters from river beds. (4) Oyster fisherman fishing with "tongs". (5) Method of "cleaning oysters"—removing bits of shell and other marine growth with a small blunt hatchet hammer before packing in barrels for shipping.

Courtesy, Canadian Government Motion Picture Bureau.

universities from time to time as required, chiefly professors and trained scientists. Other aids to the industry inaugurated by the Government may be mentioned. Most of the fishing vessels are equipped with radio receiving sets and a system is now in operation for broadcasting radio reports as to weather probabilities, bait and ice supplies and ice conditions along the coast. Educational work is carried on by permanent officers of the Department of Fisheries in instructing the fishermen in various areas as to the best methods of handling and processing their catches, and in bringing to the attention of the public the value of fish as a food. By an Act of 1882 (45 Vict., c. 18) for the development of the sea fisheries and the encouragement of boat building, provision was made for the distribution among fishermen and the owners of fishing boats of \$150,000 annually in bounties, representing the interest on the amount of the Halifax Award. An Act of 1891 (54-55 Vict., c. 42) increased the amount to \$160,000, the details of the expenditure being settled each year by Order in Council.

By parliamentary vote the sum of \$300,000 was made available for use by the Department of Fisheries during the fiscal year 1936-37 to aid, in co-operation with the provinces concerned, in the re-establishment of needy fishermen. Four provinces—Nova Scotia, New Brunswick, Prince Edward Island, and Quebec—entered into agreements with the Dominion authorities in carrying out the purpose of this vote. In each of the four the Department of Fisheries spent dollar for dollar with the Provincial Government in direct aid to fishermen who were in need of assistance and the total spendings from the departmental appropriation were \$200,008. In Quebec 8,930 grants were made to fishermen. In the Maritime Provinces the plan adopted was to make loans to fishermen and associations of fishermen and in the three provinces 6,649 fishermen and 22 associations were aided in this way.

In further effort to aid the fishermen, in this case by expanding the demand for their products, a large-scale advertising campaign was inaugurated by the Department of Fisheries during the fiscal year and the costs were met from a special appropriation of \$200,000 which had been voted by Parliament. In the main, the advertising was carried on within the Dominion, but \$25,000 was used in the United Kingdom, with the particular object of increasing sales of Canadian canned lobster and canned salmon. In Canada many publications of different classes were used in the campaign, which extended to all parts of the country and directed attention to the merits of Canadian fish foods generally.

The Modern Industry

The latter half of the nineteenth century saw the commencement of expansion in the commercial fishing industry of Canada. In 1844 the estimated value of the catch was only \$125,000. It doubled in the following decade and by 1860 had passed the million mark. Ten years later it was \$6,000,000 and this was again more than doubled in 1878. By 1900 it had reached a total of \$21,000,000 and the growth continued with little interruption until 1918, when it reached the high record of \$60,000,000. Since

then there have been decreases, but these are due to lower prices rather than to any decrease in the quantity of the catch. In 1936 the value was \$39,165,055. It will be understood that the figures given represent the total value of the fish marketed, whether in a fresh, dried, canned, or otherwise prepared state. Meanwhile the number of employees has increased in like proportion, amounting in some years to over 90,000, while the capital investment has gone as high as \$64,000,000. In 1936 the number of employees was 86,973, and the capital investment, \$45,831,842.

The salmon fishery of British Columbia gives to that province first place in respect to value of production, the position which in earlier times belonged to Nova Scotia on account of her cod fishery. Nova Scotia is now second with regard to value of output, with New Brunswick third and Ontario fourth. Lobstering on the Atlantic coast is second in value only to the salmon fishery of the Pacific. Lobstering commenced about the year 1870 with three canneries and has expanded until it is now the largest fishery of the kind in the world. In 1936 the lobster canneries numbered 304 and gave work to more than 5,000 people; 30,000,000 lobsters is a normal catch. In New Brunswick the canning of sardines, which are young herrings and not a distinct type of fish, is comparable in importance in that province to the lobster industry, exceeding it in value in occasional years. There are only 3 sardine canneries in the province, but they are of large capacity, and gave work in 1936 to nearly 500 people. The salmon canneries of the Pacific numbered 46 and gave employment to more than 5,000 persons. There are a few salmon canneries on the Atlantic coast, but their output is small. The fish-canning and -curing industry is connected entirely with the sea fisheries, the plants being scattered along the coasts in locations of easy accessibility to the fishermen in delivering their catches.

The tables following show the production of the industry, by provinces, for the years 1914, 1935, and 1936; the production by principal kinds for the years 1935 and 1936; and the capital and employees for 1934, 1935, and 1936.

Production of the Fisheries, by Provinces, 1914, 1935, and 1936

Province	Values of Production			Percentages of Total Value		
	1914	1935	1936	1914	1935	1936
	\$	\$	\$	p.c.	p.c.	p.c.
Prince Edward Island.....	1,261,666	899,685	953,029	4.1	2.6	2.4
Nova Scotia.....	7,730,191	7,852,899	8,905,268	24.7	22.8	22.7
New Brunswick.....	4,940,083	3,949,615	4,399,735	15.8	11.5	11.3
Quebec.....	1,924,430	1,947,259	2,108,404	6.2	5.7	5.4
Ontario.....	2,755,291	2,862,007	3,209,422	8.8	8.3	8.2
Manitoba.....	849,422	1,258,335	1,667,371	2.7	3.6	4.3
Saskatchewan.....	132,017	252,059	367,025	0.4	0.7	0.9
Alberta.....	86,720	225,741	309,882	0.3	0.6	0.8
British Columbia.....	11,515,086	15,169,529	17,231,534	36.8	44.1	44.0
Yukon.....	69,725	20,725	13,385	0.2	0.1	-
Totals.....	31,264,631	34,427,854	39,165,055	100.0	100.0	100.0

Fisheries Production, by Principal Kinds, 1935 and 1936

(Each over \$1,000,000 in value, and arranged by value, in 1936)

Kind	1935		1936	
	Quantity Caught	Value Marketed	Quantity Caught	Value Marketed
	Cwt.	\$	Cwt.	\$
Salmon.....	1,824,205	12,540,307	2,029,704	13,867,513
Lobster.....	319,969	4,378,742	283,273	4,383,428
Cod.....	1,539,150	2,758,140	1,699,974	3,331,750
Herring.....	2,060,320	1,817,540	2,852,381	2,576,533
Sardine.....	187,666	1,335,798	247,238	1,598,562
Whitefish.....	147,456	1,432,072	144,603	1,525,700
Halibut.....	132,130	1,285,587	138,468	1,441,310
Haddock.....	368,426	1,129,695	403,010	1,291,905
Pickarel.....	109,548	801,322	145,635	1,109,397

Capital Invested and Employees Engaged in the Fisheries, 1934-36

Item	1934	1935	1936
	\$	\$	\$
CAPITAL			
Vessels, boats, nets, traps, etc.....	26,212,703	26,473,082	27,217,250
Fish-canning and -curing establishments.....	17,372,799	17,144,806	18,614,592
Totals, Capital.....	43,585,502	43,617,888	45,831,842
	No.	No.	No.
EMPLOYEES			
On vessels and boats, and in fishing without boats.....	68,634	68,557	71,735
In fish-canning and -curing establishments.....	14,802	14,361	15,238
Totals, Employees.....	83,436	82,918	86,973

Export Trade in Fish.—The domestic consumption of fish is relatively small in Canada, and the trade depends largely upon foreign markets. From 60 to 70 p.c. of the annual catch is an average export, of which the United States takes approximately one-half and the United Kingdom one-fourth. In the calendar year 1936, total exports amounted to \$25,398,102, of which \$12,917,592 went to the United States and \$5,781,730 to the United Kingdom: analysed in another way, \$9,388,184 went to British Empire countries and \$16,009,918 to foreign countries. The most important single export is canned salmon (to the United Kingdom and European markets), followed by fresh lobster, canned lobster, fresh whitefish, fresh salmon (to the United States), and dried cod (to the West Indies, South America, etc.). For fresh fish the United States is the chief market.

Game Fish.—The foregoing is a purely industrial and commercial survey. Fishing for sport, however, has its economic side in a country of such famous game fish as the salmon of the Restigouche and other rivers of the Maritime Provinces; the black bass and speckled trout of the Quebec and Ontario highlands; the red trout of the Nipigon and the salmon and rainbow trout of British Columbia. A considerable public revenue is derived from the leasing of waters in sparsely settled districts to clubs and individuals for sporting purposes. Several hundreds of guides find employment in this field during the summer months.

CHAPTER VIII

THE FUR TRADE

Fur trading is still one of the important industries of Canada, but great changes have taken place since the early days when it dominated all other pursuits. The railway first revolutionized conditions throughout the country and, more recently, the advent of the motor vehicle has influenced the extension of highways to the borders of settlement and beyond. Boats now ply the larger lakes and rivers and aeroplanes transport furs from the more inaccessible districts.

Commencing with the year 1881, records of the value of raw fur production were obtained in the decennial censuses, but from 1920 the Dominion Bureau of Statistics has issued annual reports, these reports at



White Fox Skins at a Northern Hudson's Bay Post.

Courtesy, Hudson's Bay Company.

first being based on returns supplied to the Bureau by the fur traders, but more recently prepared from statements furnished by the provincial game departments, which are based on returns of royalties, export tax, etc. In 1881 the value of pelts taken was \$987,555; by 1910 it had become \$1,927,550; and in the season 1920-21, \$10,151,594.

Canada's production of raw furs in the season 1935-36 (12 months ended June 30, 1936) had a total value of \$14,039,729, compared with \$12,843,341 in the preceding year and \$12,349,328 in the season 1933-34.

These totals comprise the values of pelts of fur-bearing animals taken by trappers and pelts sold from fur farms, the value of the latter representing slightly over 33 p.c. of the whole. The 1935-36 value is the highest recorded since the season 1928-29, in which season it reached a total of over 18,000,000 dollars. Silver fox is far in advance of every other kind with respect to total value, and practically the entire supply comes from the fur farms. The number of silver fox pelts produced during the season 1935-36 was 142,814, with a value of \$4,728,562 and an average price per pelt of \$33.11. The value of the silver fox pelts represents 34 p.c. of the total raw fur production of the Dominion in the season under review. Muskrat and mink are second and third among the principal kinds of furs, the former with a value in 1935-36 of \$2,148,605 and the latter with \$1,701,577. Both kinds show decreases in number, but increases in value, compared with the previous season.

Increases in average prices are shown for all kinds, excepting blue, red, and silver fox, and wolverine, for which lower prices are recorded. Among the principal kinds, silver fox dropped from \$36.05 to \$33.11, but muskrat advanced from 90 cents to \$1.32, and mink from \$8.41 to \$11.03. Mink farming has made steady progress during the past few years and many of the finest mink pelts are from the farms. Approximately 20 p.c. of the number of mink pelts produced during the season may be credited to the fur farms.

The total number of pelts of all kinds produced during the season 1935-36 was 4,550,996, compared with 4,926,413 in the preceding season. The reduction is due, chiefly, to the smaller numbers of muskrat and squirrel pelts.

Numbers and Values of Pelts Taken, Seasons 1921-22 to 1935-36

Season	Number of Pelts	Total Value	Season	Number of Pelts	Total Value
		\$			\$
1921-22.....	4,366,790	17,438,867	1929-30.....	3,798,444	12,158,376
1922-23.....	4,963,996	16,761,557	1930-31.....	4,060,356	11,803,217
1923-24.....	4,207,593	15,643,817	1931-32.....	4,449,289	10,189,481
1924-25.....	3,820,326	15,441,584	1932-33.....	4,503,558	10,305,154
1925-26.....	3,686,148	15,072,244	1933-34.....	6,076,197	12,349,328
1926-27.....	4,289,233	18,864,126	1934-35.....	4,926,413	12,843,341
1927-28.....	3,601,153	18,758,177	1935-36.....	4,550,996	14,039,729
1928-29.....	5,150,328	18,745,473			

An important adjunct of the fur trade is the industry of fur dressing and dyeing. The work is chiefly on a custom basis, that is, the furs are treated for owners and a charge made according to the amount of work involved. The number of plants engaged in the treatment of furs during the year 1935 was 13, the number of skins treated 5,738,920, and the amount received for the work, \$1,374,747. There is also the fur goods industry, which supplies practically the entire quantity of fur goods—coats, scarves, muffs, caps, gauntlets, etc.—consumed in the Dominion. This industry in 1935 provided employment for 2,916 persons, paid in salaries and wages \$3,066,577, and produced goods to the value of \$12,518,670. There were establishments from coast to coast to the number of 320, although the industry was centred chiefly in Ontario and Quebec.

Fur Farming.—In the early days of the fur trade it was the practice in Canada for trappers to keep foxes caught out of season alive until the fur was prime, and from this custom has arisen the modern industry of fur farming. Coming to a northern post with his season's harvest of furs, a trapper would occasionally bring a very beautiful fox pelt, black in colour, with silver tipped tail and scattered silver hairs, giving to the pelt a silver sheen, whence the name "silver" fox. The black or silver fox is a



Fur Farming.—The pictures show portions of "Swissvale" Fox Ranch, Southport, P.E.I. Inset in the upper picture is a fine specimen of Canadian silver black fox.

Courtesy, Canadian Government Motion Picture Bureau.

colour phase of the common red fox, and the beauty of its fur and the consequent high price to be realized from the sale of the pelt encouraged experiments in breeding to fix this silver strain. Success came in 1894, when a litter of silver foxes was raised to maturity in Prince Edward Island. In 1913 Prince Edward Island had 277 fox farms with a total of 3,130 foxes, of which 650 were silver. Meanwhile attempts at rearing foxes in captivity were also being made in other provinces, the records showing that foxes were successfully bred in Quebec in 1898, in Ontario in 1905, and in Nova Scotia in 1906. In 1912 and 1913 the Dominion Commission of Conservation conducted an exhaustive inquiry into the history and possibilities of fur farming in Canada, and the resulting data gave an impetus to the industry. The pioneers of the fox-farming industry raised the foxes chiefly for the sake of the pelts, as high as \$2,600 being received for a single pelt of exceptional quality; it was not until 1912 that there was any general sale of live foxes as foundation stock in newly established ranches. Fabulous prices were then obtainable for the live animals, sales of proved breeders in 1912 being recorded at from \$18,000 to \$35,000 per pair. The number of fur farms from this time forward rapidly increased, companies as well as individuals engaging in the business, and as larger numbers of foxes became available for sale, prices naturally declined. In 1919 the Dominion Bureau of Statistics commenced the annual collection of returns of fur farms, and the records for that year show 424 fox farms and 5 miscellaneous kinds of fur farms in Canada. Fox farming is now carried on in all provinces of the Dominion, and the number of farms has steadily increased. The Prince Edward Island Silver Fox Breeders' Association was formed in 1915, and the Canadian Silver Fox Breeders' Association in 1920. Branch associations of the Canadian Association are established in most of the provinces, and silver foxes are eligible for registration in the Canadian National Live Stock Records. In addition to the silver fox, the patch or cross fox, the red fox, and the blue fox are raised on Canadian fox farms.

Although the fox is of chief importance, other kinds of wild fur-bearing animals are being raised successfully. The mink, in particular, is easily domesticated, and thrives in captivity if care is exercised in the selection of environment and proper attention given to its requirements in the matter of diet. There are now 636 mink farms distributed among the various provinces, and mink farming in Canada may be regarded as permanently established. The raccoon is another fur bearer which can be easily domesticated, but as raccoon is one of the lower priced furs and the margin between expenditure for the animal's keep and the value of the pelt consequently small, it has not reached a position of importance in the industry. The high prices obtainable for fisher and marten pelts have encouraged efforts to raise these animals in captivity, and although the work is still in an experimental stage a moderate amount of success for each kind has been attained.

Muskrat farming also is a branch of the industry to which attention is being directed, and numerous areas of marsh land are being utilized for raising this fur bearer. The farming of muskrats consists chiefly of making provision for an adequate food supply for the animals and in giving protection from their natural enemies, i.e., hawks, owls, etc. Many muskrat farms have been enclosed with strong wire fencing.

The Dominion Department of Agriculture conducts, at Summerside, P.E.I., an experimental fur farm for the study of matters affecting the health of wild fur bearers, especially the silver fox, in captivity. The Ontario Department of Game and Fisheries and the Quebec Department of Public Works, Game and Fisheries also operate experimental fur farms.

In 1935 there were in operation in Canada a total of 7,495 fur farms, an increase over the preceding year of 476. Of the total number, 6,632 were fox farms and the remainder, farms raising various other kinds of fur-bearing animals. In the miscellaneous class the mink farms are the most numerous, with a total of 636, and following are raccoon farms with a total of 120. The total value of property is recorded at \$15,972,650, this total comprising \$6,590,825, the value of the land and buildings used in connection with fur farming, and \$9,381,825, the value of the fur-bearing animals on the farms at the end of the year. The number of fur-bearing animals of all kinds born on the farms (exclusive of muskrat and beaver for which particulars cannot be supplied by the fur farmers) during the year was 245,528, including 184,988 silver foxes, 6,989 foxes other than silver and 53,551 animals of the miscellaneous group. The number of silver foxes born was the largest recorded in any year in the history of fur farming, and was an increase over 1934 of 29,945, or 19 p.c. The number of minks born on the farms was 48,961, an increase over the preceding year of 13,586, or 38 p.c. The sales of live fur-bearing animals from the farms were chiefly those of silver foxes and minks, the former showing a total of 9,901, valued at \$562,480, and the latter a total of 3,574, valued at \$73,402. The total amount received from the sales of live fur-bearing animals was \$649,432, compared with \$573,051 in 1934. The pelts sold from the farms in 1935 had a total value of \$4,870,995, an increase over 1934 of \$904,985. To the total value, the sales of silver fox pelts contributed \$4,437,302, or 91 p.c., and of mink pelts, \$323,263, or 7 p.c. The highest price received by any one farm for a single silver fox pelt during the year 1935 was \$200, compared with a high of \$176 in the preceding year. Altogether, the farms received from the sales of live fur-bearing animals and of pelts during 1935 a total of \$5,520,427, compared with \$4,539,061 in 1934.

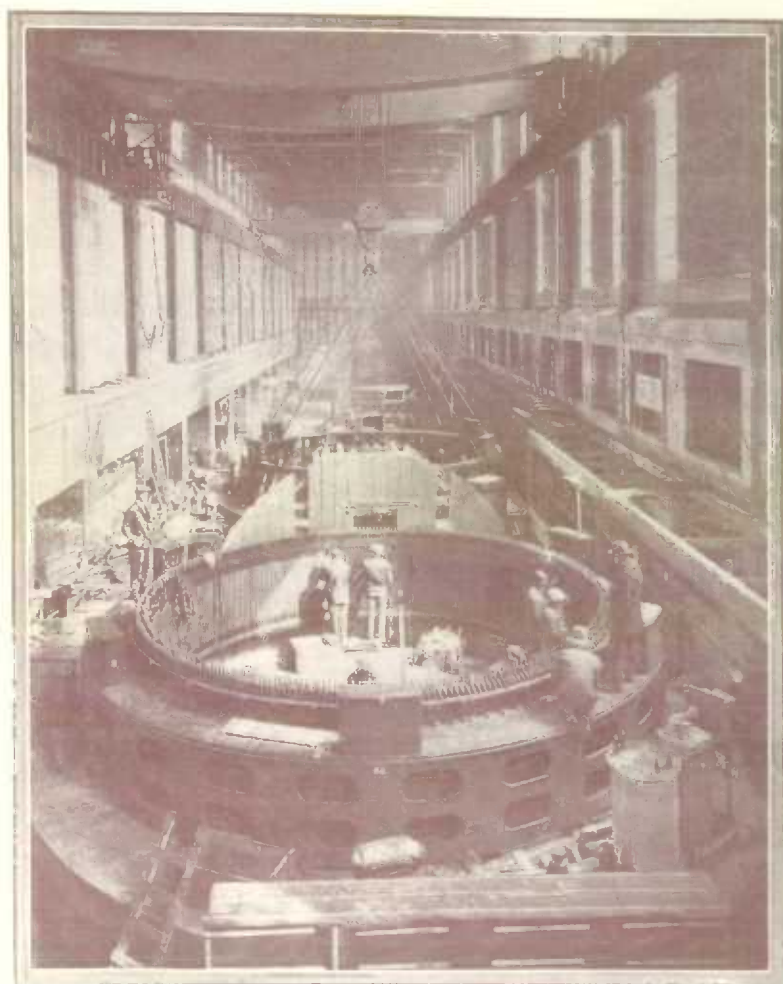
Export Trade in Furs.—The important markets for Canadian furs are London and New York; the trade tables for the 12 months ended June 30, 1936, show that of the value of raw furs exported, viz., \$16,159,275, the United Kingdom received \$9,321,147 and the United States \$6,015,782. At the close of the Great War, Montreal took a position as an international fur market, holding the first Canadian fur auction sale in 1920. At the sales held in Montreal during the year 1935 the pelts sold numbered 1,342,769 while the value amounted to \$4,562,669. Fur auction sales are held also at Winnipeg, Edmonton, and Vancouver.

In 1667 exports of furs to France and the West Indies were valued at 550,000 francs. In 1850, the first year for which trade tables of the Customs Department are available, the value of raw furs exported was \$19,395 (\$93,872); for the year ended June 30, 1920, the value was \$20,417,329; for 1925, \$17,131,172; for 1930, \$17,187,399; and for 1935, \$15,224,342. As seen from the 1936 figures quoted in the previous paragraph, the value of raw furs exported in that year showed an increase of more than 6 p.c. compared with 1935, but the proportion going to the United Kingdom fell by nearly 5 p.c.

CHAPTER IX

THE WATER POWERS OF CANADA

To the fortunate occurrence of Canada's water powers in close proximity to her other great resources of field, forest, and mine is due much of the industrial progress which has made the Dominion, in spite of her limited



A Large Hydro-Electric Generator being installed in a Canadian Central Electric Station.—The picture gives some idea of the complex engineering task involved.

Courtesy, Canadian Westinghouse Company, Limited.

population, the second greatest manufacturing country of the British Empire. Exports to the other Dominions and to the United States now consist very largely of manufactured goods.

Canada's hydraulic installation as at Jan. 1, 1938, was a total of 8,112,751 h.p. and this represents only 18.6 p.c. of her total estimated hydro-power potentialities of 43,700,000 h.p.

The table below shows the hydraulic turbine installation as at Jan. 1, 1938, and also the estimated potential power by provinces. These estimates include only rivers where the flows and heads have been measured; they are based on continuous power available twenty-four hours each day at 80 p.c. efficiency, i.e., 80 p.c. of the theoretical power. The two estimates shown are: firstly, power available throughout the year based on the minimum flow or flow during the dry periods; and secondly, the maximum available for six months. Because power is seldom required continuously 24 hours each day to the full capacity of the generating equipment, water can generally be stored during the hours of light demand and used during the hours of heavy demand. Consequently, whenever feasible, power plants are equipped with generating machinery having a capacity much greater than the theoretical continuous power of the waterfall.

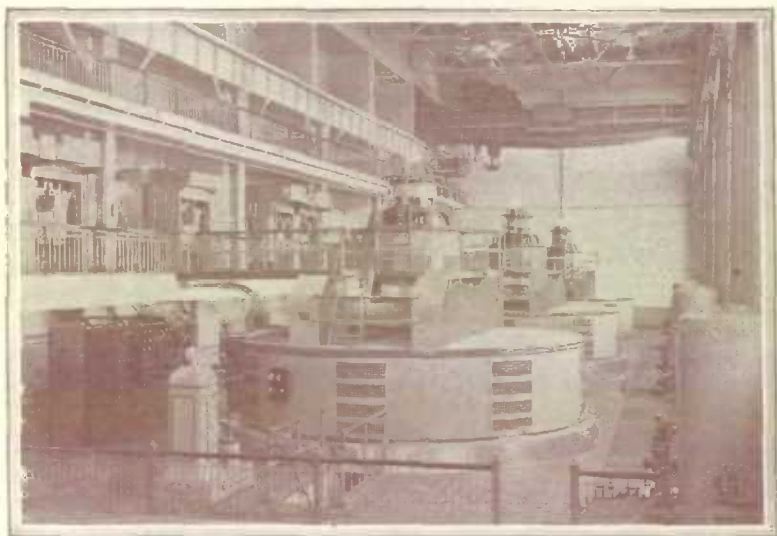
Available and Developed Water Power, by Provinces, Jan. 1, 1938

Province or Territory	Available 24-hour Power at 80 p.c. Efficiency		Turbine Installation
	At Ordinary Minimum Flow	At Ordinary Six-Month Flow	
	h.p.	h.p.	h.p.
Prince Edward Island.....	3,000	5,300	2,439
Nova Scotia.....	20,800	128,300	123,437
New Brunswick.....	68,600	169,100	133,081
Quebec.....	8,459,000	13,064,000	3,999,686
Ontario.....	5,330,000	6,940,000	2,577,380
Manitoba.....	3,309,000	5,344,500	405,325
Saskatchewan.....	542,000	1,082,000	61,035
Alberta.....	390,000	1,049,500	71,597
British Columbia.....	1,931,000	5,103,500	719,972
Yukon and Northwest Territories.....	294,000	731,000	18,199
Canada.....	20,347,400	33,617,200	8,112,751

The progress of water-power development in Canada has been extremely rapid. The general improvement in business and industry is creating a demand for power which already indicates a resumption of the large scale building that was somewhat retarded during the depression period.

Provincial Distribution of Water Power.—The water powers of the *Maritime Provinces*, while small in comparison with the sites in the other provinces, constitute a valuable economic resource, the development of which is supplemented by power from abundant indigenous coal supplies. *Quebec*, with almost double the available water power and more than one and one-half times the hydraulic installation of Ontario, the province next in order, has achieved a remarkable development during the past ten years, her installation considerably more than doubling in that period.

More than 83 p.c. of her total installation is operated by nine large joint-stock company central station organizations. *Ontario*, like *Quebec*, without local coal supplies, also has abundant water-power resources. The Hydro-Electric Power Commission of *Ontario*, a co-operative municipally-owned enterprise, province-wide in its field, operates plants aggregating almost 63 p.c. of the total hydraulic installation of the province and serving 782 municipalities. Of the *Prairie Provinces*, *Manitoba* has the greatest power resources and the greatest development, 77 p.c. of the total hydraulic development of the three provinces being installed on the *Winnipeg* river to serve the city of *Winnipeg* and adjacent municipalities and, over the transmission network of the *Manitoba Power Commission*, some 60 municipalities in southern *Manitoba*. *British Columbia*, traversed by three distinct mountain ranges, ranks fourth in available power resources and her hydraulic development is exceeded in only *Quebec* and *Ontario*. The water powers of the *Yukon* and *Northwest Territories*, while considerable, are so remote from markets as to limit their present commercial development to local mining uses.



Alexander Power Development, Nipigon River.—Three modern units, aggregating 54,000 horse-power, in the generating room.

Courtesy, Hydro-Electric Power Commission of Ontario.

Construction During 1937.—Construction during 1937 extended from coast to coast and included the following work, by provinces:—

In *British Columbia*, the addition of a second unit with a capacity of 47,000 h.p. to the plant of the *Western Power Company of Canada* at *Ruskin* on the *Stave* river. This plant is interconnected with the two other plants of the company on the same river and the *Coquitlam-Buntzen* hydro-electric plants of the *Vancouver Power Company*. The entire output of the combined systems is distributed by the parent company, the *British Columbia Power Corporation*, in *Vancouver* and the surrounding district

In Saskatchewan, the Churchill River Power Company added a new unit, 19,500 h.p. to its 42,000 h.p. plant at Island Falls on the Churchill river, 60 miles northwest of Flin Flon. The growth of demand in the Flin Flon mining area necessitated the additional installation. The construction of a 6,000 to 7,000 h.p. hydro-electric plant is part of the development program being undertaken at Goldfields, in the Lake Athabaska district by the Consolidated Mining and Smelting Company of Trail, B.C.

The municipality of Winnipeg, Manitoba, is adding a third unit of 12,500 h.p. to its Slave Falls station on the Winnipeg river. The output of this plant, like that of the city's Point du Bois station 6 miles upstream, is transmitted some 90 miles for distribution in Winnipeg.

In Ontario, the Great Lakes Power Company completed, early in the year, a 10,000 h.p. plant at Montreal Falls on the Montreal river and is reported to be commencing the construction of a second development with a similar installation at the mouth of the same river. The output of these two plants will augment the supply of the Company's other plants at Sault Ste. Marie and Michipicoten Falls and is designed to provide for the demand for power due to the development of the Helen iron mine and to the construction of a proposed new pulp mill at Michipicoten.



View of a Recently Completed Hydro-Electric Installation, Rapide Blanc, P.Q.
Courtesy, Shawinigan Water and Power Company Limited, Montreal.

The Hydro-Electric Power Commission of Ontario proposes to meet the increased power demands of the Georgian Bay system by the construction of a plant at Ragged Rapids on the Musquash river. An installation of 10,000 to 12,000 h.p. is under construction and while the plant could not be completed during the year 1937 most of the transmission and other facilities required to deliver its output to the system were being constructed in order that use might be made of power purchased from the municipality of Orillia.

The Commission reports the development of important mining loads in the Beardmore-Geraldton territory which are being served by the construction of improved transmission facilities on its Thunder Bay system. A similar growth of mining load has occurred in the Abitibi dis-

trict of the northern Ontario properties, the district supplied from the Abitibi Canyon development, and this is also being met by the extension of transmission and distribution facilities. In the Sudbury district the existing generating equipment is fully loaded and new capacity is being provided from the Crystal Falls plant on the Sturgeon river, recently acquired by the Commission from the Abitibi Power and Paper Company.

In the province of Quebec, the Saguenay Power Company has just brought into operation the twelfth and final unit of 45,000 h.p. of its plant at Ile Maligne on the Saguenay river while the St. Maurice Power Corporation, controlled jointly by the Shawinigan Water and Power Company and the Brown Corporation, plan to commence, during the current winter, the construction of a plant near La Tuque on the upper St. Maurice river. The initial installation is planned to be 4 vertical units of 40,500 h.p. each and settings are to be placed for the later installation of two similar units. At Outardes Falls, on the Outardes river, the Ontario Paper Company is completing a 70,000 h.p. hydro-electric plant to operate its new paper mill and townsite at Baie Comeau, ten miles distant.

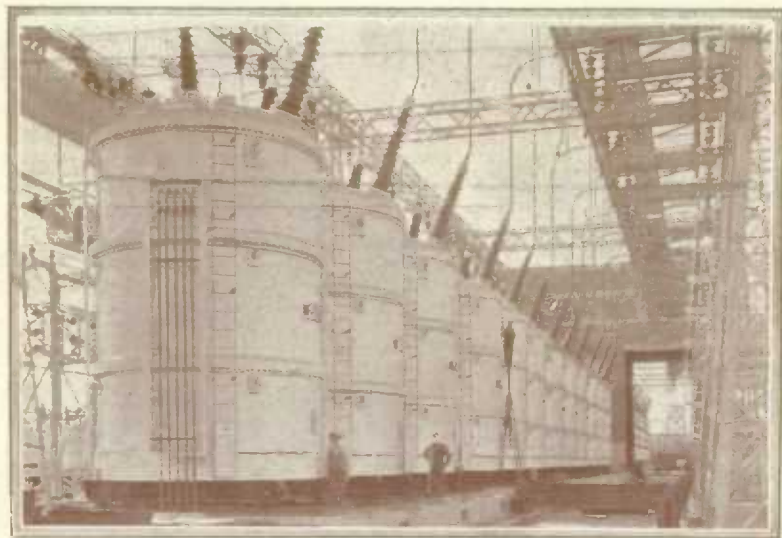
The Nova Scotia Power Commission has been securing tenders for the construction of a 5,200 h.p. plant at Cowie Falls on the Mersey river to supply the increasing power demands of the Mersey Paper Company, while the Minas Basin Pulp and Paper Company is proceeding with the second and final stage of the St. Croix river development by the installation of a 2,500 h.p. unit at Salmon Hole site.

Central Electric Stations

Over 88 p.c. of all water power developed in Canada is developed by central electric stations and, although there are a large number of stations (250) which derive their power entirely from fuels and 40 hydraulic stations which also have thermal auxiliary equipment, 98 p.c. of all electricity generated for sale is produced by water power.

The production of electricity by central electric stations amounted to 5,500,000,000 kilowatt hours in 1919, the first year for which such data are available. Six years later it was almost doubled, by 1928 it had more than trebled and by 1930 it amounted to 18,000,000,000 kilowatt hours. With continued depression in manufacturing industries the output started to decline late in 1930 and continued into 1933, but from June, 1933, to date there has been an almost continuous succession of increases each month after adjusting for normal seasonal variations. The output for March, 1937, at 2,412,259,000 kilowatt hours, was the largest in the history of the industry and an estimate for the present year is a new high at 28,000,000,000 kilowatt hours, or over five times the output of 1919. Only one other country (Norway) has a greater output per capita and only one other country (United States) has a greater total output irrespective of size. One reason for this large use of electricity produced by central stations is the absence of coal in the central provinces and the large quantities of water power available within transmitting distances of the principal manufacturing centres. The pulp and paper industry, which uses enormous quantities of power, has also been an important factor in this rapid increase and now uses about 40 p.c. of the total energy produced by

central electric stations in addition to power produced within the pulp and paper mills. The use of electric furnaces has been growing and about 7 p.c. of the total central electric station output is now consumed by them. Low rates and reliable service have increased the domestic use for lighting, cooking, water heating and other household uses; the average per capita consumption has risen to 1,262 kilowatt hours per annum, about twice that in the United States where living standards are very similar. Secondary power used in electric boilers, mainly in pulp and paper mills, has increased from a very small quantity in 1924 to almost 7,000,000,000 kilowatt hours in 1936. Although the production of this secondary power swells the total output, the consumption of firm power, or total output less secondary power for electric boilers and exports to the United States, has continued to increase and reached a peak in September, 1937, of 1,564,502,000 kilowatt hours, the adjusted index number being 203 (1926 average = 100).



A Bank of Large Transformers at Leaside, Toronto.—For the transmission of electric power over long distances, the voltage has to be "stepped-up" to high tension. The above transformers are at the receiving end of the 230-mile, 220,000-volt transmission lines carrying power to Toronto from the Ottawa district.

Courtesy, Hydro-Electric Power Commission of Ontario.

The rated capacity of electric motors in manufacturing industries in Canada in 1935 was 77·9 p.c. of the total capacity of all power equipment in these industries, the increase from 61·3 p.c. in 1923 being almost continuous. In the mining industries this conversion to electric drive has been even greater, growing from 57·3 p.c. in 1923 to 75·7 p.c. in 1935. Almost 85 p.c. of these electric motors in manufacturing industries and 86 p.c. in mining industries in 1935 were driven by power produced in central stations. The remainder were driven by power produced within the industries.

Mechanical power, particularly electric motors, has been increasing in manufacturing industries much more rapidly than the number of employees during the past decade. From 1923 to 1935 power equipment, measured in horse-power, increased by 102.5 p.c., whereas the number of employees increased by only 10.4 p.c. Of course, employees decreased from 1929 to 1935, while power equipment continued to increase, but even at the peak of employment in 1929 the increases over 1923 were 80.2 p.c. for power equipment and 31.9 p.c. for employees. These percentage increases are affected by the relative status of each class of power at the beginning of the period and also by the more or less general practice of installing a surplus of motor capacity in plants where each machine has its own motor. One horse-power is equivalent approximately to the capacity of ten men. Consequently in 1923 for each employee there was power equipment with a capacity of 42 men and by 1929 this had grown to a capacity of 57 men. The load factor, or extent to which the available power equipment and man power were used, is not known, but quite probably the ratio between use and available capacity was changed very little during these six years.

Electricity, principally hydro-electric energy, is also displacing coal and oil to heat furnaces, ovens and boilers, and is doing enormous quantities of work in electrolytic refining of metals, production of fertilizers, metal plating and so forth.

Investments in central electric stations for 1935 amounted to \$1,459,821,000, which was larger than for any other manufacturing industry: revenues amounted to \$127,177,954 and 1,401,983 domestic customers were served. These are approximately 60 p.c. of all families in Canada, both urban and rural.

The average monthly output of the large central electric stations in Canada, 1926-37, is shown below.

Average Monthly Output, Central Electric Stations in Canada, 1926-37

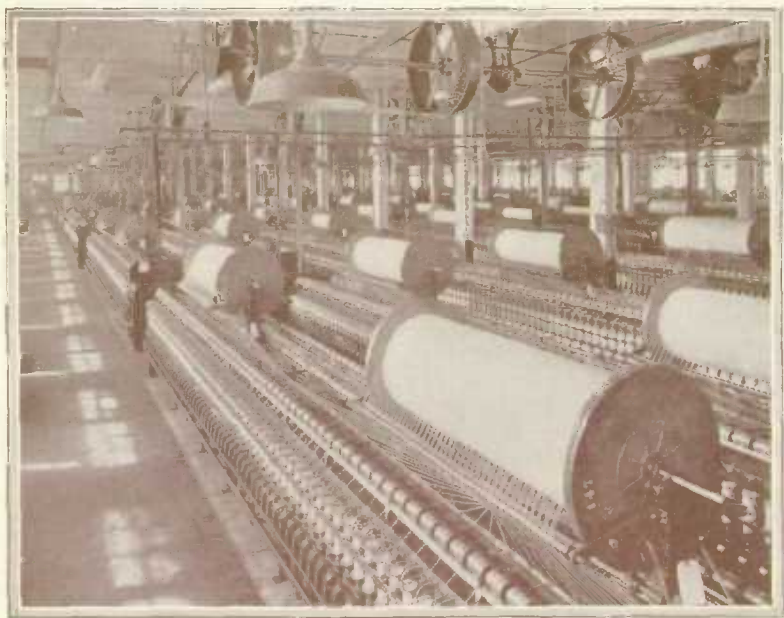
Year	From Water	From Fuel	Total
	'000 k.w.h.	'000 k.w.h.	'000 k.w.h.
1926	991,041	16,746	1,007,787
1927	1,193,461	18,944	1,212,425
1928	1,340,292	21,192	1,361,484
1929	1,441,203	27,622	1,468,825
1930	1,463,330	25,230	1,488,560
1931	1,339,907	26,071	1,365,978
1932	1,296,360	25,845	1,322,205
1933	1,436,486	26,150	1,462,636
1934	1,733,810	29,484	1,763,294
1935	1,917,958	32,410	1,950,368
1936	2,078,739	37,452	2,116,191
1937 (nine-month average)	2,219,664	40,025	2,259,689

The above figures are interesting as showing the consistent progress of the industry from 1926 to 1930. Even in the worst of the depression years, 1932, the drop in output was only a little over 11 p.c. of the maximum, and, from June, 1933, onward there has been very rapid and fairly continuous increase. The index number adjusted for seasonal variations reached an all-time high point at 239.83 in June, 1937, the average for 1926 being equal to 100.

CHAPTER X

THE MANUFACTURES OF CANADA

The present century has witnessed the chief forward movement in Canadian manufactures, mainly as the result of two great influences: first, the opening up of the West, which greatly increased the demand for manufactured goods of all kinds and especially construction materials; and secondly, the War, which left a permanent imprint upon the variety and efficiency of Canadian plants. By 1920, the gross value of Canadian manufactured products was no less than \$3,772,000,000, the capital invested \$3,372,000,000, and the number of employees 609,586. Hundreds of millions of capital had been attracted from outside (see p. 27) in achieving this striking result. After 1920 the figures declined, but subsequent gains brought them back, for 1929, to even higher levels than 1920, as the table on p. 94 shows.

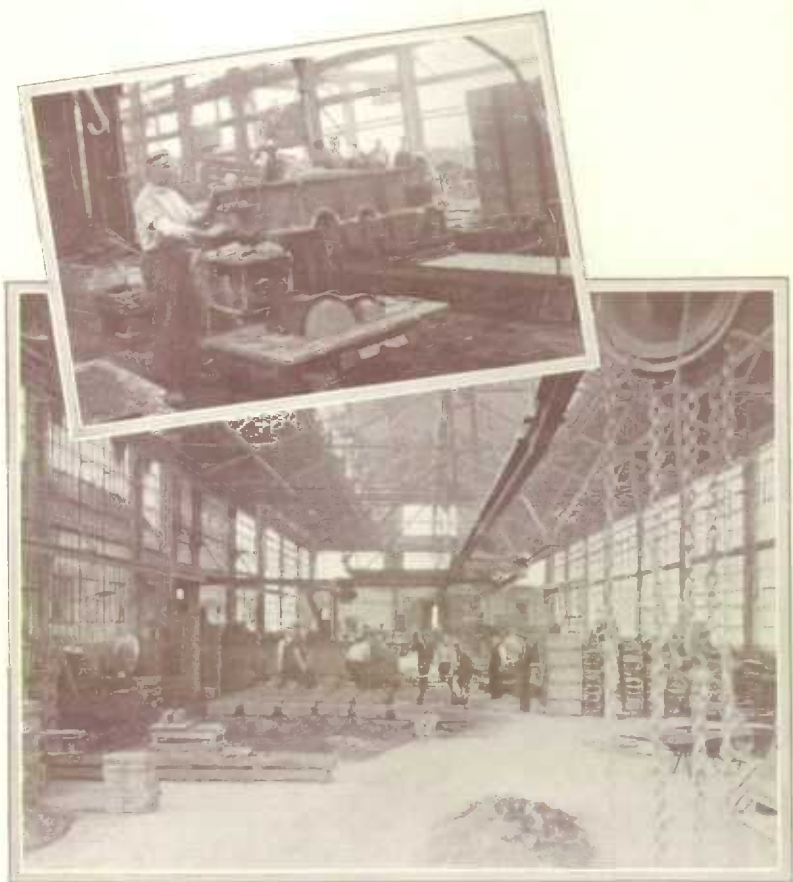


Cotton Twisting in the Eastern Townships.—This picture shows the yarn wound 700 to 1,000 strands on large beams (cylinders) placed as shown. Each three strands are being twisted together, by the machine illustrated, this being one operation in the manufacture of the very strong cord required for automobile tires.

Courtesy, Southern Canada Power Company Limited, Montreal

Effects of the Depression on the Manufacturing Industries of Canada.—The downward trend in manufacturing operations which began in the autumn of 1929 continued with increasing force to about the middle

of 1933. As a result, the output of manufactured products in 1933, valued at \$2,086,847,847, was the lowest annual average reached in the period. This was a decrease of 48.2 p.c. as compared with the peak year of 1929. In 1935 the value of production amounted to \$2,807,337,381, an increase of 10.8 p.c. over the previous year but still 30.3 p.c. below the 1929 level.



Operations in the Brass Foundry of a Canadian Plant.

Inset: A corner of the iron foundry.

Courtesy, Canadian Westinghouse Company, Limited.

The number of persons employed dropped from 694,434 in 1929 to 493,903 in 1933, a decrease of 28.9 p.c. For 1935, however, the number of employees was 582,874, an increase of 6.9 p.c. over the 1934 figures. In spite of this increase, the employees in 1935 still numbered 16.1 p.c. below the 1929 figure. The decline in salary and wage payments exceeded even that of the number of employees, the drop between 1929 and 1933 being \$347,487,752, or 42.7 p.c. The increase in salary and wage payments in 1935 over 1934 amounted to \$56,732,269. Average earnings per employee, which

in 1933 amounted to \$943, represented a decrease of 19.5 p.c. from the average earnings of \$1,171 in 1929. For 1935 average earnings were \$1,013.

The growth of manufacturing production since 1870 is shown in the following table. The increasing importance of Canadian manufacturing for the international market is illustrated by the figures for Canadian exports of manufactured products which increased from less than \$3,000,000 per annum on the average of 1871-75 to \$614,000,000 in the post-war fiscal year ended Mar. 31, 1920. Exports of "fully or chiefly manufactured" products in the fiscal year ended Mar. 31, 1935, amounted in value to \$285,484,014, and exports of "partly manufactured" products to \$136,629,437.

Historical Summary of Statistics of Manufactures, 1870-1935

Year	Estab- lish- ments	Capital	Em- ployees	Salaries and Wages	Cost of Materials	Net Value of Products ¹	Gross Value of Products
	No.	\$	No.	\$	\$	\$	\$
1870.....	41,259	77,964,020	187,942	40,851,009	124,907,846	96,709,927	221,617,773
1880.....	49,722	165,302,623	254,935	59,429,002	179,918,593	129,757,475	309,676,088
1890.....	78,964	353,213,000	369,595	100,415,350	250,759,292	219,088,594	469,847,886
1900 ²	14,650	446,916,487	339,173	113,249,350	266,527,858	214,525,517	481,053,375
1910 ²	19,218	1,247,583,609	515,203	241,008,416	601,509,018	564,400,621	1,185,975,639
1920 ²	23,351	3,371,940,653	609,586	732,120,585	2,085,271,649	1,686,078,408	3,772,250,057
1929 ²	23,597	5,083,014,754	694,434	813,049,842	2,032,020,975	1,894,910,456	4,029,371,340
1930 ²	24,020	5,203,316,760	644,439	736,092,760	1,666,933,902	1,665,631,770	3,428,970,828
1931 ²	24,501	4,961,312,408	557,426	624,545,561	1,223,890,011	1,390,409,237	2,698,461,862
1932 ²	24,544	4,741,255,610	495,398	505,893,323	955,998,683	1,097,284,291	2,120,194,555
1933 ²	25,232	4,689,373,704	493,903	465,562,090	969,188,574	1,048,259,450	2,086,847,847
1934 ²	25,663	4,703,917,730	545,162	533,594,635	1,230,977,053	1,222,943,899	2,533,758,954
1935 ²	25,491	4,699,991,853	582,874	590,326,904	1,420,985,153	1,302,179,099	2,807,337,381

¹ Includes all establishments employing five hands or over.

² Includes all establishments

irrespective of the number of employees but excludes construction and custom and repair work.

³ For and since 1929 the figures for the net value of production represent the gross value less the cost of materials, fuel and electricity. Prior to this, only the cost of materials is deducted.

Groups of Industries

Among the manufacturing groups, analysed on a purpose classification basis, and judged by gross value of production, the producers materials group, which includes manufacturers and building materials, ranked first in 1935 with 30.1 p.c. of the total value of manufactured products. The industries manufacturing food products came second with 21.9 p.c. of the total, followed by the industrial equipment group with 18.7 p.c., clothing industries 8.9 p.c., vehicles and vessels 7.7 p.c., drink and tobacco 4.3 p.c.

Significant changes have occurred since 1922 in the importance of the various groups. Indicative of the increasing industrialization of the Dominion is the increase in the "industrial equipment" group from 17.0 p.c. of the total value of production in 1922 to 18.7 p.c. of the total in 1935, and the increase in "producers materials" from 26.8 p.c. to 30.1 p.c. during the same period. Another significant change is the decline in the "food" group which dropped from a production of 27.1 p.c. to 21.9 p.c. of the total. Whereas in 1922 food products comprised the leading group, in 1935 the output of producers materials ranked first in importance. The following groups improved their position since 1922: vehicles and vessels advanced from an output of 6.5 p.c. to 7.7 p.c. of the total value of production; drink and tobacco from 4.0 p.c. to 4.3 p.c.; and books and stationery from 4.0 p.c. to 4.2 p.c. The following groups declined in importance: the clothing group dropped from 9.5 to 8.9 p.c.; house furnishings from 2.5 to 1.9 p.c.; and personal utilities from 2.3 to 1.5 p.c.

Census of Manufactures, by Provinces and Purpose Groups, 1935

Province or Group	Establishments	Capital	Employees	Salaries and Wages	Cost of Materials	Net Value of Products ¹	Gross Value of Products
PROVINCE	No.	\$	No.	\$	\$	\$	\$
P.E.I.	261	3,508,905	1,108	618,406	1,894,409	1,362,405	3,356,006
N.S.	1,350	118,999,064	16,060	14,042,674	31,647,800	30,995,130	67,109,172
N.B.	872	115,635,568	13,937	11,080,093	25,551,371	27,643,366	56,344,190
Que.	7,942	1,664,198,107	189,671	173,354,585	398,566,702	393,805,691	821,020,796
Ont.	10,266	2,064,194,151	281,435	303,807,207	718,570,816	668,918,734	1,423,562,474
Man.	1,099	198,822,314	23,239	24,701,066	67,929,760	47,349,314	117,734,292
Sask.	880	66,271,171	6,355	6,524,411	28,046,921	16,976,149	46,821,302
Alta.	1,002	96,322,781	12,087	12,504,449	42,831,636	28,932,217	73,282,607
B.C. and Yukon	1,819	371,039,792	38,979	43,094,011	105,845,738	86,196,093	198,106,542
Totals	25,491	4,698,991,853	582,874	590,325,904	1,420,885,153	1,302,179,099	2,907,337,381
PURPOSE GROUP							
Food	8,561	405,894,748	83,930	78,173,759	415,364,620	188,689,195	614,425,247
Drink and tobacco	677	183,501,357	19,165	19,785,411	49,941,998	69,784,641	121,157,062
Clothing	2,444	177,567,199	95,893	75,673,525	129,135,498	117,610,564	249,520,483
Personal utilities	612	39,588,755	10,284	10,333,919	21,585,937	21,221,331	43,453,234
House furnishings	679	66,402,670	18,018	15,911,383	24,494,871	27,326,024	52,944,629
Books and stationery	2,262	128,707,801	26,626	46,896,177	34,354,450	81,810,214	117,736,267
Vehicles and vessels	464	226,007,916	45,717	53,362,973	120,325,337	90,876,144	215,103,397
Producers materials	6,737	1,410,095,540	177,160	175,890,774	427,693,908	369,999,860	845,106,272
Industrial equipment	2,897	2,037,312,404	91,835	109,494,019	187,338,713	322,901,939	524,836,751
Miscellaneous	158	23,913,463	4,246	4,804,964	10,649,821	11,959,187	23,052,039

¹ Gross value less cost of materials, fuel and electricity.

FOOD INDUSTRIES

This group, although ranking second in gross value of production, is, nevertheless, first in popular interest. To supply the daily needs of the Canadian people for food is a huge task requiring the labour of many people and an organization which is world-wide in its ramifications. Some of the leading industries in this group with their gross value of production in 1935 are as follows: slaughtering and meat packing, \$133,379,312; butter and cheese, \$99,888,971; flour and feed mills, \$97,567,868; bread and other bakery products, \$59,400,668; biscuits and confectionery, \$41,197,833; fruit and vegetable preparations, \$38,276,487; sugar, \$36,597,997; coffee, tea and spices, \$24,214,761; fish curing and packing, \$23,458,356; miscellaneous foods, \$14,639,623; breakfast foods, \$9,655,049; condensed milk, \$8,142,184; etc. A brief review of the more important of these industries follows.

Slaughtering and Meat Packing.—Slaughtering and meat packing is the leading industry of the food group. In 1935 its output was valued at \$133,379,312; it furnished employment to 10,674 persons who were paid \$12,448,347 in salaries and wages. About \$91,000,000 was paid out by packers for live stock. This industry is, therefore, of considerable importance to the agricultural economy of the Dominion. The packing plants are concentrated in the larger centres of population and are located in all

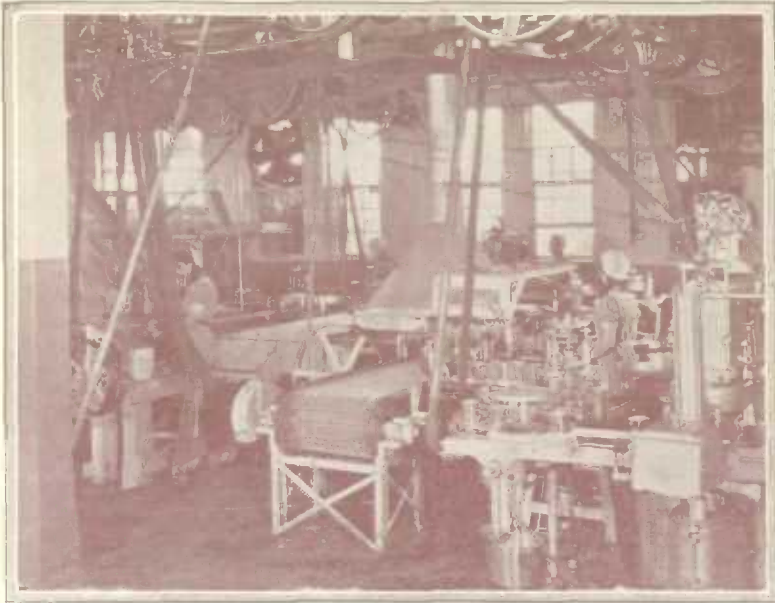
provinces. Toronto is the chief centre, while Montreal, Winnipeg, St. Boniface, Edmonton, and Vancouver are also of considerable importance. The production of meat is carried on on a large scale. Of the 139 establishments, 30 contributed 89 p.c. of the total output, while 7 of the largest plants had an average production of over \$10,000,000. The same is true of employment. Twenty-seven plants reported 85 p.c. of the total number of persons employed, while the five largest plants averaged over 800 employees each. This industry contributes materially to the foreign trade of Canada. The exports in 1935 totalled \$33,423,617, the principal items being "bacon and hams" and "shoulders and sides". Hides and skins, sausage casings, gelatine and meat are some of the more important similar products imported. In 1935 the value of such imports totalled \$8,751,560.

Dairy Products.—Manufacturing statistics of dairy production are given in the chapter on Agriculture at p. 54.

Flour Milling.—The flour-milling industry with an output valued at \$81,955,937 in 1935 is one of the leading industries of the group from the point of view of gross value of production. This industry, which has existed to meet the domestic needs for more than 300 years, is one of the Dominion's oldest manufactures, but it is only within recent times that its progress has become outstanding. The War and the demand it created gave a great impetus to this trade. The 384 flour mills, many of them of the most modern type and highest efficiency, have a capacity far in excess of Canada's demands. During 1928, productive capacity reached about 121,000 barrels per day. Since then, this industry has been adversely affected by the difficulties which beset the Canadian grain trade and the great decline in the prices of grains. Exports of wheat flour declined from 10,737,266 barrels in 1928 to 4,881,057 barrels in 1935, but in spite of the decrease Canada continues to be one of the leading exporters of wheat flour.

Bread and Other Bakery Products.—With the increase in urban population, as well as the improvement in transportation, which increasingly enables rural communities to purchase factory-made bread, the bread industry made rapid strides during the past decade. During this period there was an increase of 30 p.c. in the capital invested and 54 p.c. in the number of employees. The production of bread and other bakery products required the labour of about 19,000 people in 1935. This industry had an output valued at \$59,400,668 in 1935, a capital investment of \$47,788,924, employees numbered 19,167, and the salaries and wages paid amounted to \$16,369,912. This industry was thus the third largest employer of labour among the manufacturing industries of the country. In salaries and wages paid, however, it ranked only eighth.

Canned Foods.—The development in the production of canned foods in Canada has shown a remarkable expansion since the beginning of the twentieth century. In 1900 the total value did not exceed \$8,250,000, but in 1930 it had increased to more than \$55,000,000, or six and one-half times as much. In 1933 the value of production dropped to \$33,000,000, and rose again to \$45,000,000 in 1935. The principal commodities used in the canning industry are: fish, fruits and vegetables, milk and meats, while the industry itself forms an adjunct of considerable importance to other



Fruit Canning in Canada.—A machine for sealing cans after they have been filled with fruit.

Courtesy, Canadian Government Motion Picture Bureau.

industries, notably the tin-can industry, the wooden-box industry, and the paper and printing industries. The development of the canned foods trade has effected great changes in the relation of foods to seasons. Fruits and vegetables of many kinds, retaining much of their original freshness and flavour, are to be had at all times of the year. Producers in the country are provided with an enormously extended market, and consumers in both city and country with cheap and wholesome food in great variety. The consumer also enjoys protection by frequent inspections (under the Meat and Canned Foods Act, 1907, and subsequent amendments) by the Health of Animals Branch of the Dominion Department of Agriculture.

Quantity and Value of Principal Foods Canned in Canada, 1935

Product	Quantity	Value
		\$
Fish.....case	2, 106, 807	13, 638, 127
Fruits....."	1, 825, 613	4, 757, 301
Vegetables....."	8, 602, 822	12, 101, 138
Meats.....lb.	4, 007, 740	862, 572
Soups.....case	1, 603, 685	3, 978, 806
Concentrated milk products.....	-	6, 849, 989
Other foods.....	-	3, 112, 009
Total.....	-	45, 299, 942

Fish Canning.—The principal varieties of fish used in Canadian canneries are, in order of their importance: salmon, lobsters, sardines, herring, clams, haddock, and pilchards.

The salmon-canning industry is practically confined to the province of British Columbia, and dates as far back as 1876 when the initial pack was 9,847 cases, drawn wholly from the Fraser River area. By 1926 the pack had increased to 2,065,190 cases, constituting the second highest record pack for the industry, while in 1930 the pack had increased to 2,223,469 cases, the high record to date. In 1935 the pack amounted to 1,530,320 cases valued at \$9,663,305.

Next to the salmon-canning industry of the Pacific coast comes the lobster-canning industry of Nova Scotia, New Brunswick, Prince Edward Island, and Quebec. The industry dates from 1870 when Nova Scotia produced 30,000 cans and New Brunswick 20,000 cans. In the following year a factory was started in Prince Edward Island with an initial pack of 6,711 cans. The growth of the industry in over 65 years is indicated by the output of the 304 canneries operating in Canada in 1935 which amounted to 99,905 cases of 48 lb., valued at \$2,195,633. Large quantities of canned lobster are exported annually to the United Kingdom, the United States, and France.

Sardine canning is confined almost wholly to the province of New Brunswick. The name of sardine as applied to the Canadian fish is not the true one as the fish used in the canneries of New Brunswick are the young of the herring. The first mention of a sardine industry in Canada, so far as is known, dates back to sometime in the late 'sixties. Although there are but three canneries operating, they are of large capacity, and the total pack in 1935 amounted to 338,436 cases valued at \$1,180,111. The imports of canned sardines in 1935 amounted to \$359,966 and came principally from Norway. Exports to the value of \$448,150 were reported in 1935, principally to British Dominions and dependencies.

Canned Fruits and Vegetables.—The fruit and vegetable preparations industry, which includes canned fruits, canned vegetables, pickles, vinegar, jams, etc., comprises another large division of this group. In 1935, this industry reported an output valued at \$38,276,487, a capital investment of \$38,272,379 and an employment of 7,912 persons, who received \$5,063,481 in salaries and wages. The industry has made rapid strides in the past few years. During the period 1923-35 the volume of fruit and vegetable preparations produced increased 155 p.c. This growth is remarkable indeed, as it represents a corresponding increase in the domestic demand for these products, the foreign trade being relatively small as compared with the domestic production. Imports in 1935 were valued at \$2,652,961 and exports at \$5,138,094. According to these figures, the industry, besides supplying the domestic requirements, has also a small exportable surplus.

Biscuits and Confectionery.—The value of biscuits and confectionery produced in Canada totalled \$41,180,949 in 1935. Of this amount \$12,145,850 was represented by biscuits, \$19,736,768 by chocolate and sugar confectionery, and the balance of \$9,298,331 by cocoa and chocolate, nuts, and other products. Large quantities of biscuits and confectionery are consumed annually in Canada. In 1935, the per capita consumption of

biscuits amounted to 8.86 pounds and confectionery 10.9 pounds. The biscuit, confectionery, cocoa and chocolate industry is thus of considerable importance in Canada. In 1935 there were 234 establishments reporting. These plants had a capital investment of \$37,779,319; they furnished employment to 10,446 persons who were paid \$9,315,563 in salaries and wages. The industry is concentrated mainly in Ontario; the 92 plants located there had 60 p.c. of the capital, 50 p.c. of the total employees in the industry, and produced 57 p.c. of the entire output.

Sugar.—The production of sugar requires the construction of large factories entailing huge capital investments. In 1935 there were 8 plants in operation with an average investment in fixed and current assets of over \$4,000,000 each. The location of these plants was as follows: Nova Scotia, 1; New Brunswick, 1; Quebec, 2; Ontario, 2; Alberta, 1; and British Columbia, 1. The selling value at the factory of the products made by the industry totalled \$36,597,997. To produce the large quantity of sugar required by Canadians, it took the labour of 2,134 persons who received \$3,086,691 in salaries and wages. The quantity of sugar produced reached the huge total of 969,017,643 lb., enough sugar to allow more than 88 lb. to every person in Canada. Both cane and beet sugar are produced. Beet sugar is produced in Ontario and Alberta and constituted 12.4 p.c. of the total output in 1935. The production of beet sugar has risen considerably during the past decade, the output having increased from 70,388,105 lb. in 1926 to 119,857,668 lb. in 1935. This development is important for the farming communities of Ontario and Alberta where these plants are located, as the sugar beets used by the refineries are grown in Canada.

The sugar-refining industry is, therefore, of considerable importance in the industrial life of Canada. The demand created by the War gave it a great impetus. All things considered, 1919 was a record year. The number of persons employed (3,491), the value added by manufacture (\$16,321,882), and the exports (\$22,953,135), were the highest recorded, while the volume of sugar manufactured was only 10 p.c. lower than that of the peak year 1925 when 11,714,967 cwt. was produced. Since 1925, however, exports of sugar have declined with the result that production and employment slackened considerably. In 1935 exports totalled only 38,073 cwt.

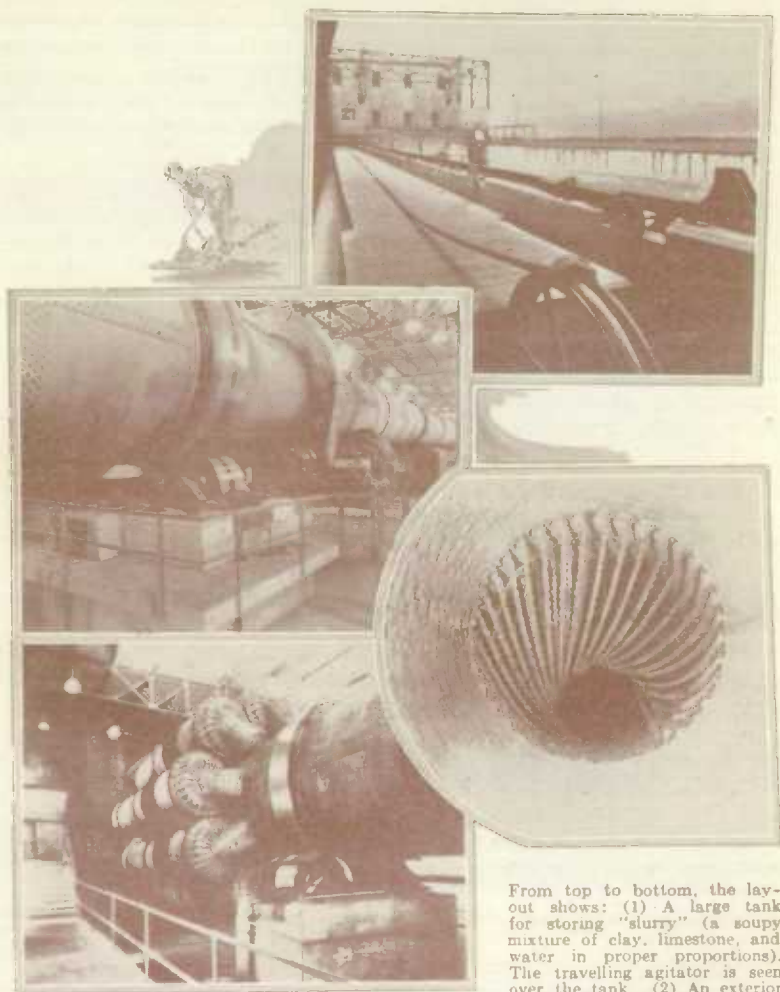
Leading Individual Industries

Central electric stations and non-ferrous metal smelting industries based upon water-power and mineral resources, have taken their places among the leading manufactures of Canada along with the industries based upon forest, agricultural and live-stock resources.

The pulp and paper industry, although of comparatively recent development, had, by 1923, displaced flour milling as Canada's most important manufacturing industry and, in spite of recent vicissitudes, held that position up to 1935 when it was displaced by the non-ferrous metal smelting and refining industry. In employment and salaries and wages paid, however, pulp and paper is still the leading industry.

The incidence of the depression resulted in a re-arrangement in the rank of many industries which has already proved temporary in some

THE MANUFACTURE OF CEMENT



the kiln. The slurry is pumped to the upper feed end of the kiln. The kiln itself consists of a steel tube 11 feet in diameter and 413 feet long. It is supported by tires about 100 feet apart which run on roller bearings (see near end of kiln in picture). Although the kiln weighs about 500 tons, when empty, it is so delicately balanced that it can be turned by a hand-crank. The kiln, when full, holds 120 tons of slurry and is rotated by the electric motor shown geared to it. (3) An interior view of the chain section (feed end) of the kiln. This section extends to about one-fifth of the length of the kiln. The hot chains keep the slurry moving and dry it out; they also prevent much dust from passing out from the kiln through the stack. From this section the slurry passes into the "calcining section" (about 180 feet long) where the temperature is between 2,500° and 2,700° F. and the intense heat reduces the slurry to a clinker. Here finely pulverized coal is blown in by compressed air and combustion regulated. (4) The "discharge end" of the kiln showing coolers. The clinker is now cooled off. Each cooler is full of carefully draped chains as in the chain section of the kiln. About 4 p.c. of gypsum is added to the clinker and it is ground and reground so that 90 p.c. will pass through a 200-mesh sieve. The finished product is portland cement.

Courtesy, Canada Cement Company, Limited.

cases. The suspension of capital expenditures, a serious factor in the depression, greatly reduced the output of such important industries as sawmills, electrical equipment, automobiles, railway rolling-stock, primary iron and steel, machinery, etc. On the other hand, the demand for goods for immediate consumption was more stable, including such industries as petroleum products, bakeries, cotton yarn and cloth, printing and publishing, clothing, tobacco, beverages, etc. However, as previously stated, some return to the pre-depression order of importance is in evidence. Comparing the rankings for 1934 with those for 1935, it may be noted that automobiles came up from eighth place to fifth place, sawmills from twelfth to ninth, and electrical equipment from fifteenth to tenth; cotton yarn and cloth, and bread and other bakery products, which appeared in ninth and tenth places, respectively, in 1934, dropped back to twelfth and eleventh places.

Principal Statistics of Fifteen Leading Industries, 1935

Industry	Estab-lish-ments	Capital	Em-ployees	Salaries and Wages	Cost of Materials	Gross Value of Products
	No.	\$	No.	\$	\$	\$
Non-ferrous metal smelting and refining.....	15	145,686,299	8,944	12,687,356	126,804,075	186,245,658
Pulp and paper.....	95	545,572,938	27,836	35,893,313	57,995,037	162,651,282
Central electric stations.....	1,041	1,459,821,168	15,458	22,519,993	Nil	137,114,911
Slaughtering and meat pack- ing.....	139	58,207,715	10,674	12,448,347	108,191,810	133,379,312
Automobiles.....	20	40,765,548	13,095	18,797,599	75,645,998	106,624,445
Butter and cheese.....	2,589	58,291,763	14,786	13,905,135	69,953,193	99,888,971
Flour and feed mills.....	1,127	56,475,315	5,454	5,165,507	78,071,667	97,567,868
Petroleum products.....	58	64,707,454	4,856	7,153,224	58,869,814	79,950,525
Sawmills.....	3,698	75,973,627	25,727	17,711,657	35,927,884	65,905,132
Electrical apparatus and sup- plies.....	182	75,499,255	15,549	17,594,759	25,409,806	61,152,834
Bread and other bakery pro- ducts.....	3,045	43,788,924	19,167	16,369,912	28,343,545	59,400,668
Cotton yarn and cloth.....	35	70,741,613	18,121	13,206,265	33,689,873	59,378,664
Rubber goods including foot- wear.....	45	63,435,798	11,023	11,017,431	20,258,774	55,949,570
Printing and publishing.....	793	53,721,846	16,889	23,061,512	11,197,377	55,832,925
Clothing, factory, women's..	591	22,603,528	17,894	14,593,861	31,642,215	53,796,274
Totals, Fifteen Leading Industries.....	13,473	2,835,357,791	225,473	242,125,871	762,001,068	1,414,839,639
Grand Totals, All In- dustries.....	25,491	1,693,991,853	582,874	590,326,904	1,420,885,153	2,807,337,381
Percentages of Fifteen Lead- ing Industries to All Indus- tries.....	52.9	60.3	38.7	41.0	53.6	50.4

Manufactures in Leading Cities

Toronto proper, with an output valued at \$385,883,455 in 1935, exceeded Montreal proper, with \$383,547,972. Greater Montreal, however, is still ahead of Greater Toronto and continues to be the leading manufacturing area in the Dominion. After these two cities come Hamilton with \$114,691,789, Windsor \$104,908,197, Vancouver \$73,981,872, and Winnipeg with \$67,217,042. Twelve other places had manufactures with a gross value of production of over \$20,000,000 in 1935.

Cities of Canada with a Manufacturing Production of Over Twenty Million Dollars in 1935

City	Estab- lish- ments	Capital	Em- ployees	Salaries and Wages	Cost of Materials	Gross Value of Products ¹
	No.	\$	No.	\$	\$	\$
Toronto.....	2,689	386,898,652	86,226	97,144,947	190,370,255	385,883,455
Montreal.....	2,346	382,332,791	94,612	89,934,540	201,022,033	383,547,972
Hamilton.....	484	176,246,963	26,769	30,162,244	53,740,074	114,691,789
Windsor.....	236	64,298,564	15,227	20,714,545	64,062,711	104,908,197
Vancouver.....	811	83,954,899	15,693	16,789,590	39,863,397	73,981,872
Winnipeg.....	616	71,837,683	16,649	17,563,803	36,825,174	67,217,042
Oshawa.....	43	22,042,343	5,796	7,409,353	28,260,574	43,546,374
Montreal East.....	11	40,178,067	1,627	2,099,253	34,347,750	43,519,874
London.....	251	37,146,184	8,614	9,090,550	16,690,022	37,613,775
Kitchener.....	159	33,432,626	8,034	7,505,880	17,198,361	34,929,052
Quebec.....	306	45,485,413	8,815	7,632,737	11,937,885	27,158,899
Calgary.....	164	28,209,532	4,208	4,642,942	16,368,181	25,823,804
Ottawa.....	205	32,581,576	6,633	7,321,545	9,375,408	23,398,659
Peterborough.....	81	20,088,652	4,515	4,140,800	12,414,632	23,128,953
Three Rivers.....	54	49,871,807	5,090	4,934,787	8,248,964	22,328,837
Sarnia.....	47	20,138,369	3,159	3,816,221	16,609,100	21,970,254
Edmonton.....	162	17,462,756	3,825	4,181,126	13,733,441	21,755,617
Brantford.....	115	38,487,900	6,002	5,662,057	10,168,315	20,248,560

¹ Net value is obtained by deducting cost of materials, fuel and electricity used in manufacturing from the gross value.

Conditions During the Years 1932-37.—Perhaps the best all-round barometer of conditions is afforded by the indexes of employment maintained from month to month in the Dominion Bureau of Statistics, and based on returns received from establishments having 15 hands or over. These include the great majority of the total workers.

The year 1929 witnessed the establishment of an unusually high level of employment in manufacturing, as in other lines of business. From the latter part of that year, however, the trend was downward, the recession continuing almost uninterruptedly until the opening of 1933, when the index reached the lowest point on record, standing at 74.4 at Jan. 1 of that year. The recovery in manufacturing which then set in has continued, with few interruptions, and a high point of 121.7 was recorded by the index at Oct. 1, 1937; this was practically the same as the previous maximum of 121.6 indicated at Aug. 1, 1929. The index for the first eleven months of 1937 averaged 114.3, as compared with 103.1 during the same period of 1936.

Indexes of Employment in Manufactures

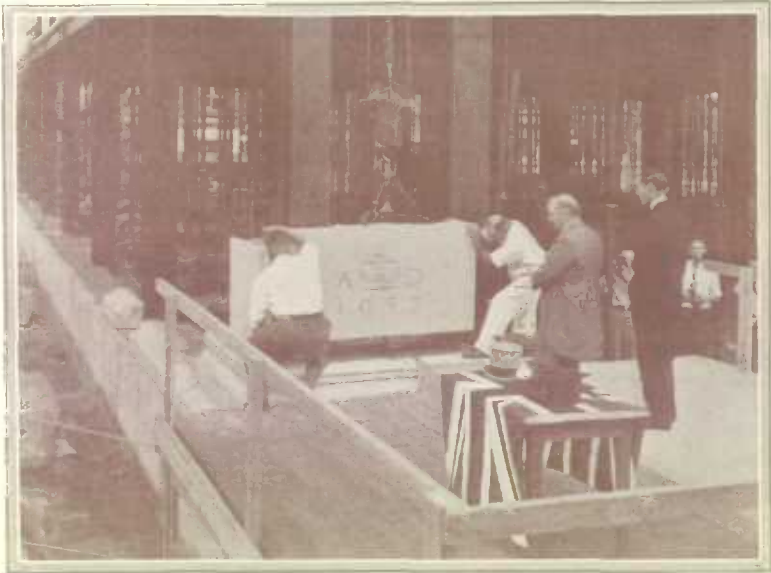
(1926 = 100)

Month	1932	1933	1934	1935	1936	1937	Month	1932	1933	1934	1935	1936	1937
Jan. 1	83.9	74.4	80.0	87.4	96.8	102.4	July 1	85.4	83.0	93.8	98.5	104.7	119.0
Feb. 1	85.9	75.0	84.2	90.1	98.5	105.3	Aug. 1	82.6	85.2	94.2	99.8	104.9	118.1
Mar. 1	87.0	75.8	86.5	92.7	99.5	107.6	Sept. 1	83.1	86.8	94.3	100.8	105.9	121.2
April 1	87.3	76.0	88.1	93.9	101.1	110.8	Oct. 1	84.1	86.7	94.4	103.3	109.0	121.7
May 1	85.8	76.8	90.2	95.6	102.7	113.8	Nov. 1	81.7	86.5	92.8	103.5	107.7	119.0
June 1	86.0	80.0	93.2	98.4	103.4	117.9	Dec. 1	80.3	84.4	91.3	101.4	107.0	-

CHAPTER XI

CONSTRUCTION

The construction industry in its various phases is dealt with in this chapter, which presents available data respecting construction work undertaken by public authorities and by private enterprise.



The Laying of the Corner Stone of the New Bank of Canada Building, Ottawa.—The Prime Minister, the Rt. Hon. W. L. Mackenzie King, officiated at the ceremony, which took place on Aug. 10, 1937. The Prime Minister and Graham Towers, Governor of the Bank of Canada, watch the corner stone being lowered into place. (See also p. 154.)

Courtesy, Canadian Government Motion Picture Bureau.

In the past few years of depressed business conditions, public construction work has been of especial importance, both in stabilizing and stimulating the industry. However, since 1933 there have been evidences of increased activity in private and commercial construction undertakings, the former, in the residential field, receiving considerable stimulus from the Dominion Housing Act.

The Dominion Housing Act.—Administered by the Department of Finance, the Dominion Housing Act, 1935, has a twofold purpose: (1) to assist in the improvement of housing conditions; and (2) to assist in the absorption of unemployment by the stimulation of the construction and building material industries. The Minister of Finance is empowered to make advances and to pay expenses of administering the Act to the extent of \$10,000,000. The Act provides for loans for the construction of new dwell-

ings only (including single-family houses, duplexes, and apartment houses), the security taken being in the form of a first mortgage running jointly to an approved lending institution and to the Dominion Government. In most cases, the loans will be for 80 p.c. of the cost of construction of the dwelling or its appraised value, whichever is the lesser; of the loan of 80 p.c. the lending institution will advance 60 p.c. and the Government, 20 p.c. The remaining 20 p.c. is to be provided by the borrower. Provision is also made in certain cases for loans of 70 p.c. or 75 p.c. where desired by the borrower or deemed advisable by the lending institution. The interest rate paid by the borrower is 5 p.c. This is made possible by the fact that the Government's funds are advanced on an interest basis of 3 p.c. Loans are made for a period of 10 years subject to renewal for a further period of 10 years upon revaluation of the security and on conditions satisfactory to all parties concerned. Interest, principal and taxes are payable in monthly instalments. Amortization of principal is effected at a rate sufficient to pay off the loan in 20 years, but more rapid amortization may be arranged to suit the convenience of the borrower. The Act requires sound standards of construction and contains other clauses safeguarding the mortgage.

The Home Improvement Loans Guarantee Act, 1937.—This Act provides for a limited guarantee to chartered banks and certain approved lending institutions in respect of loans made to owners of residential property (including farm buildings) for repairs, alterations and additions to urban and rural dwellings. The loans shall not exceed \$2,000 on any single-family house. In the case of houses containing more than one family unit the amount of the loan shall not exceed \$1,000 plus \$1,000 for every family unit provided. Loans are repayable in equal monthly instalments or in suitable instalments to fit the conditions of the individual borrower.

Loans in the amount of \$1,000 or less must be repaid within 3 years. Loans in excess of \$1,000 must be repaid within 5 years. The maximum charge for loans shall be $3\frac{1}{4}$ p.c. discount for one-year loan repayable in equal monthly instalments, and proportionate rates for other periods. Approved lending institutions are guaranteed against loss in respect of loans made in accordance with approved conditions to the extent of 15 p.c. of the aggregate amount of such loans made by each approved lending institution.

The limit of the aggregate loans to be guaranteed is \$50,000,000 and the limit of the Government's guarantee is therefore \$7,500,000.

Railways.—The expenditures of railways on maintenance of way, and structures and equipment are not included in the census figures of the construction industries given below and are therefore summarized here. Both steam and electric railways showed increased expenditures for these purposes in 1936 compared with 1935. For steam railways they amounted to \$124,133,303 as against \$112,674,951 in 1935 and \$194,000,000 in 1929. For electric railways the total was \$5,834,426 as against \$5,401,772 in 1935 and \$9,000,000 in 1929. Expenditures on new line of steam railways were \$120,000 in 1936 compared with \$90,000 in 1935, whereas in the years 1928-31 they averaged \$30,000,000 per year.



Hauling Logs to the Sawmill for Cutting into Bridge Timbers to be Used on the Big Bend Columbia Highway, B.C.

Courtesy, National Parks Bureau, Department of Mines and Resources.

Annual Census of the Construction Industries.—The first census of the construction industries, covering public works undertaken by municipal, provincial and Dominion authorities, including Harbour Commissions, as well as those carried on by private contractors and construction companies, refers to the year 1934. The returns for the year 1935 are summarized in the following table, for, since the basis of procedure was not firmly established in 1934, the figures for that year are not comparable with those given below. For instance, after taking the 1934 census, it was decided that much of the work undertaken by country municipalities (grading and scraping of roads, cleaning ditches, weed and brush cutting, etc.) did not fall within the meaning of construction as applied to the census, so that in 1935 reports were received from only 215 municipalities as compared with 2,333 in 1934. On the other hand, the number of reports received from the other three main groups, viz., contractors and builders, Harbour Commissions, and provincial and Dominion departments, showed a net increase of 280 for 1935 compared with 1934.

Of the 1935 total value of work performed, \$140,988,228, or 65 p.c., represented entirely new construction, and the remainder was for alterations, repairs, maintenance, etc. Various forms of engineering construction amounted to \$118,764,000, or 55.1 p.c. of the total value of work performed, the principal items being: streets, highways, etc., \$61,872,000; and harbour and river works, \$19,073,000. Buildings accounted for only \$71,303,000, or 33.1 p.c. of the total construction work. Chief among the classes of build-

ings were: dwellings and apartments, \$18,522,000; government and municipal buildings, \$16,025,000; and industrial buildings such as factories, warehouses, farm and mine buildings, \$12,436,000.



Grading on Steep Hillside, Big Bend Columbia Highway, B.C.

Courtesy, National Parks Bureau, Department of Mines and Resources.

Statistics of the Construction Industry, by Provinces, 1935

Province or Group	Capital Invested	Persons Employed	Salaries and Wages Paid	Cost of Materials Used	Value of Work Performed
	\$	No.	\$	\$	\$
Province					
Prince Edward Island	266,937	533	416,126	523,240	1,190,030
Nova Scotia	6,102,009	9,729	6,259,725	5,968,907	15,657,298
New Brunswick	5,693,299	7,097	5,038,701	4,153,509	9,988,340
Quebec	46,962,410	37,131	27,106,503	25,450,043	58,309,829
Ontario	73,657,184	59,412	46,010,029	40,199,698	90,848,941
Manitoba	8,885,050	7,029	4,770,837	5,390,181	10,473,633
Saskatchewan	3,640,943	5,658	2,797,833	2,288,521	5,061,354
Alberta	4,588,993	6,199	5,131,912	4,618,509	10,183,322
British Columbia and Yukon	8,765,091	11,930	7,654,954	6,101,064	13,836,126
Totals	153,471,961	144,768	105,183,623	91,733,594	215,548,873
Group					
Contractors, builders, etc.	121,220,026	63,340	58,977,344	73,242,622	147,530,111
Municipalities	14,946,414	25,565	14,158,133	5,202,516	19,635,554
Harbour Commissions	2,059,561	1,671	1,293,626	833,755	1,066,576
Provincial Government Depts. ..	11,594,839	29,911	20,097,600	8,855,172	32,032,120
Dominion Government Depts. ..	8,640,976	24,272	10,659,921	3,694,518	14,284,512

Volume of Construction, 1937.—The recovery in construction, on the whole, has not paralleled that indicated in many other industries, although substantial improvement has been reported recently. According to the records of the construction contracts awarded, as maintained by MacLean Building Reports, Limited, the value of such contracts rose from \$160,305,000 in 1935 to \$162,588,000 in 1936, being higher than in any other year since 1931; the total for the first ten months of 1937 was \$198,576,800, or \$55,948,000 higher than in the same months of 1936. In spite of the improvement indicated, the recently-recorded aggregates have been considerably less than in pre-depression years. The following table shows the value of the various classes of structures for which contracts were awarded in the first ten months of 1936 and 1937.

**Construction Contracts Awarded in Canada, Ten Months,
1936 and 1937**

(MacLean Building Reports, Ltd.)

Type of Construction	1936		1937	
	No.	Value	No.	Value
		\$		\$
Apartments.....	150	3,341,300	293	5,169,000
Residences.....	11,655	33,387,100	15,630	44,006,600
<i>Totals, Residential.....</i>	<i>11,805</i>	<i>36,728,400</i>	<i>15,923</i>	<i>49,175,600</i>
Churches.....	209	2,370,700	277	2,462,900
Public garages.....	595	2,487,900	716	3,843,500
Hospitals.....	87	1,824,100	109	6,950,800
Hotels and clubs.....	326	1,778,500	347	2,357,900
Office buildings.....	281	2,769,000	413	5,176,100
Public buildings.....	392	5,706,500	513	6,028,300
Schools.....	341	3,880,600	423	5,740,600
Stores.....	1,646	6,134,800	1,733	6,430,300
Theatres.....	101	2,049,500	117	1,939,800
Warehouses.....	454	4,167,200	566	7,348,600
<i>Totals, Business.....</i>	<i>4,412</i>	<i>33,168,800</i>	<i>5,806</i>	<i>48,287,800</i>
<i>Totals, Industrial.....</i>	<i>613</i>	<i>13,551,700</i>	<i>877</i>	<i>32,081,100</i>
Bridges.....	166	6,714,200	173	7,014,700
Dams and wharves.....	104	1,847,400	103	3,192,500
Sewers and watermains.....	172	2,278,100	121	2,301,100
Roads and streets.....	636	21,238,500	529	34,257,600
General engineering.....	434	27,101,700	492	22,326,400
<i>Totals, Engineering.....</i>	<i>1,512</i>	<i>59,179,900</i>	<i>1,418</i>	<i>69,092,300</i>
Grand Totals.....	18,342	142,628,900	23,413	198,576,800

Monthly statistics showing the value of the building permits taken out in 58 cities have been compiled in the Dominion Bureau of Statistics since 1920. During 1936, the building authorized in these centres was estimated to cost \$41,325,693, as compared with \$46,560,623 in 1935. These totals considerably exceeded those for 1933 or 1934, and the 1935 figure was also larger than that for 1932, but throughout the past five years, the building authorizations have been decidedly smaller than in any other year for which data were available. The value of the building represented by the permits for construction taken out in the first ten months of 1937, however, was higher than in the same period in any other year since 1931. The following table shows the data for the 58 cities in the period, January to October of 1936 and 1937; these monthly figures are unrevised.

The population of these 58 centres constituted some 36 p.c. of the total population of the Dominion as enumerated in the Census of 1931; during the year 1936, their building authorizations amounted to little more than 25 p.c. of the total value of the construction contracts awarded throughout Canada. This ratio was decidedly lower than the average proportion in the years 1920-36, which was 40.3 p.c. In the first ten months of 1937, the proportion showed little change from that of 1936, standing at 23.7 p.c.

Building Permits, by Cities, Ten Months, 1936 and 1937

City	1936	1937	City	1936	1937
	\$	\$		\$	\$
Charlottetown, P.E.I.	155,255	135,070	St. Thomas, Ont.	67,220	50,406
Halifax, N.S.	949,691	1,264,856	Sarnia, Ont.	113,254	123,375
New Glasgow, N.S.	26,318	62,770	Sault Ste. Marie, Ont.	206,095	288,954
Sydney, N.S.	165,346	241,352	Toronto, Ont.	6,304,926	8,302,367
Fredericton, N.B.	101,810	76,750	York and East York		
Moncton, N.B.	82,712	148,539	Townships, Ont.	2,074,890	1,831,663
Saint John, N.B.	170,547	228,950	Welland, Ont.	102,953	186,219
Montreal-Maisonneuve			Windsor, Ont.	616,213	3,422,917
P.Q.	5,576,660	6,534,015	Riverside, Ont.	27,285	94,905
Quebec, P.Q.	772,010	804,765	Woodstock, Ont.	188,208	185,071
Shawinigan Falls, P.Q.	112,225	370,030	Brandon, Man.	54,511	54,745
Sherbrooke, P.Q.	228,350	721,140	St. Boniface, Man.	68,364	332,272
Three Rivers, P.Q.	107,122	285,332	Winnipeg, Man.	1,320,500	1,977,750
Westmount, P.Q.	308,578	500,583	Moose Jaw, Sask.	44,048	104,222
Belleville, Ont.	83,865	140,305	Regina, Sask.	327,591	429,090
Brantford, Ont.	129,709	246,427	Saskatoon, Sask.	174,205	243,601
Chatham, Ont.	125,980	181,750	Calgary, Alta.	791,645	637,538
Fort William, Ont.	198,900	454,680	Edmonton, Alta.	842,170	769,975
Galt, Ont.	129,411	260,787	Lethbridge, Alta.	164,021	219,663
Guelph, Ont.	97,495	126,757	Medicine Hat, Alta.	25,985	25,710
Hamilton, Ont.	1,017,850	1,516,895	Kamloops, B.C.	78,350	45,602
Kingston, Ont.	226,798	319,101	Nanaimo, B.C.	115,143	205,657
Kitchener, Ont.	401,468	828,663	New Westminster,		
London, Ont.	615,090	812,020	B.C.	334,515	467,790
Niagara Falls, Ont.	131,893	240,686	Prince Rupert, B.C.	14,900	26,924
Oshawa, Ont.	103,477	193,075	Vancouver, B.C.	4,174,845	6,037,250
Ottawa, Ont.	1,683,257	1,969,488	North Vancouver,		
Owen Sound, Ont.	84,685	55,097	B.C.	51,804	57,998
Peterborough, Ont.	233,601	220,118	Victoria, B.C.	415,574	474,755
Port Arthur, Ont.	197,760	684,373			
Stratford, Ont.	46,907	138,437	Totals—58 Cities.....	33,553,743	47,135,398
St. Catharines, Ont.	600,548	713,087			

The trend of employment in the construction industries was upward in 1937, according to data tabulated by the Dominion Bureau of Statistics from some 1,147 contractors, having an average of 117,748 employees. The index of employment calculated from these returns averaged 99.1 in the first eleven months of 1937, compared with 88.9 in 1936 (1926 = 100). In the building division of the construction industry, which depicts more accurately the work of this nature normally carried on in the cities, the average index of employment, at 58.7, was slightly higher than that of 55.7 recorded in 1936.

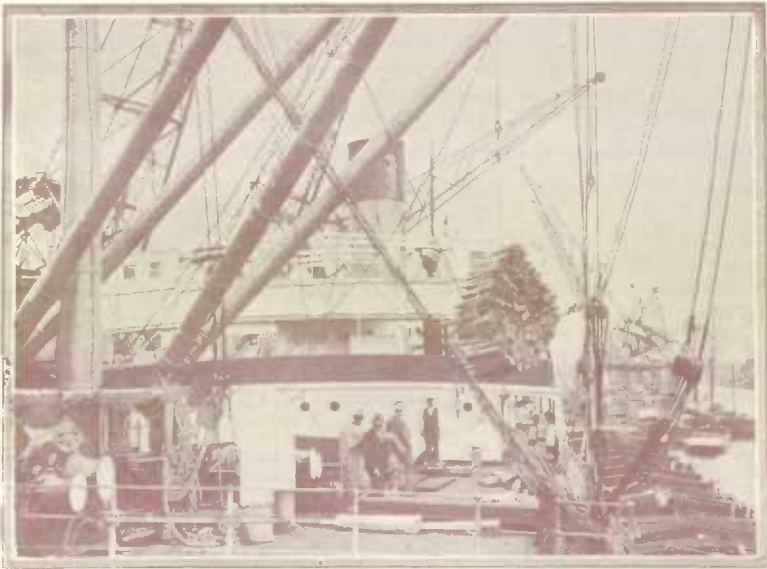
The wholesale prices of building materials during 1937 were higher than in any other of the past six or seven years, although they continued lower than in the years 1920-30. The index for such prices (1926 = 100) averaged 94.5 in the first 11 months of 1937, compared with 85.1 in the same period of 1936. Wages in the building trades also have advanced to some extent, the preliminary wages index, as prepared in the Department of Labour, standing at 165.3 p.c. of the 1913 average, as compared with 160.8 in 1936.

CHAPTER XII

EXTERNAL TRADE OF CANADA—NON-COMMODITY EXCHANGES

External Trade*

For the fourth consecutive fiscal year Canada's foreign trade in 1936-37 achieved a substantial expansion over the preceding fiscal period and maintained a rate of recovery exceeding that of world international trade generally. In each month both imports and domestic exports were greater in value than in the corresponding month of the year before. For the full twelve months ended Mar. 31, 1937, imports and exports showed increases over 1935-36 of 19.4 p.c. and 25.0 p.c., respectively. Compared with the depression low reached in 1932-33, the value of trade in 1936-37 represented a gain of 65.3 p.c. for imports and 101.0 p.c. for exports.



Unloading Canadian Pulpwood at Rotterdam.

Courtesy, Commercial Intelligence Service, Department of Trade and Commerce.

Imports and exports in 1936-37 gained in quantity as well as value; the volume of imports was 15.8 p.c. over 1935-36 and of exports, 17.5 p.c. While the dollar value of the trade of Canada is still below the levels

* In statistics of imports in this chapter, and particularly imports in 1935-36 and 1936-37, the excise duty which had been included in the value of distilled spirits, chiefly whisky, imported into Canada from countries entitled to the British Preferential Tariff since the fiscal year 1920-21, is excluded as from April 1, 1935. Imports in 1935-36 and 1936-37, particularly from the United Kingdom, are consequently lower than would otherwise be the case. Such imports from the United Kingdom in 1936-37 were valued at \$5,680,584.

attained before the world economic crisis, examination of leading imports and exports reveals that, on a quantity basis, recovery has proceeded a great deal further.

Canada's Imports and Exports

Fiscal Year	Total Imports	Exports			Excess: Imports - Exports +
		Canadian Produce	Foreign Produce	Total	
	\$	\$	\$	\$	\$
1913-14	619,193,998	431,588,439	23,848,785	455,437,224	- 163,756,774
1919-20	1,064,528,123	1,239,492,098	47,166,611	1,286,658,709	+ 222,130,586
1924-25	796,932,537	1,069,067,353	12,294,290	1,081,361,643	+ 284,429,106
1929-30	1,248,273,582	1,120,258,302	24,679,768	1,144,938,070	- 103,335,512
1930-31	906,612,635	799,742,607	17,285,381	817,028,048	- 89,584,647
1931-32	578,503,904	600,031,812	11,221,215	611,253,027	+ 32,749,123
1932-33	406,383,744	528,004,278	6,913,842	534,978,120	+ 128,594,376
1933-34	433,798,625	665,954,071	6,311,324	672,265,395	+ 238,466,770
1934-35	522,431,153	756,625,925	7,658,963	764,284,888	+ 241,853,735
1935-36	562,719,063	849,030,417	13,441,659	862,472,076	+ 299,753,013
1936-37	671,875,506	1,061,181,906	13,062,314	1,074,244,220	+ 402,368,654

It will be noted from the statistics in the table above that Canada has expanded sales abroad to a greater extent than purchases from other countries. In consequence, the balance of trade, which has been substantially in Canada's favour in recent years, became even more favourable in 1936-37, amounting to \$402,369,000. This large favourable balance of trade has been surpassed in only two fiscal years since Confederation, viz., 1917-18 when abnormal war conditions prevailed and in 1925-26.

Coincident with the expansion of import trade, the amount of duty collected increased from \$82,784,000 in 1935-36 to \$92,145,000 in 1936-37. Notwithstanding this increase in duty collected the average *ad valorem* rate (i.e., the amount of duty expressed as a percentage of the value of imports) declined from 14.7 p.c. on all imports in 1935-36 to 13.7 p.c. in 1936-37. On dutiable imports alone, the rate was 26.7 p.c. in 1935-36 and 24.9 p.c. in 1936-37. The proportion of imports which were free of duty was substantially the same in both years.

Trade of Canada Compared with World Trade.—World international trade continued a moderately upward progress in the calendar year 1936. Despite the absence of a marked or general disposition towards the relaxation of the policies of economic nationalism which have retarded trade in recent years, the continuance of internal recovery and exchange stability have made possible some slackening in Western Europe of the more rigid types of trade restriction. At the same time a number of Governments, including those of Canada and the United States of America, have pursued the objective of freer trade and lower tariffs which they are gradually realizing by means of trade agreements with countries sharing their outlook. Reduction in world stocks of primary commodities, and the consequent more normal readjustment of supply and demand, has resulted in increased trade. The successful localization of major political disturbances was also a favourable factor.

During 1936, Canada advanced in relative position among the leading trading nations as regards total trade, imports, and exports. The table below gives details respecting the relative position of the leading commercial countries of the world.



The Canadian Pavilion at the Paris Exposition, 1937.—The sculptural plaques depict the primary industries. *Inset:* Enlargement of the Canadian "Buffalo" which stands on guard.

Courtesy, Publicity Division, Department of Trade and Commerce.

Trade of Sixteen Leading Commercial Countries of the World, calendar year 1936

(Expressed in Canadian currency)

NOTE.—The figures in parentheses represent relative position in 1935.

Country	Total Trade		Net Imports		Domestic Exports	
	Rank	Amount	Rank	Amount	Rank	Amount
		\$'000,000		\$'000,000		\$'000,000
United Kingdom.....	1 (1)	6,115	1 (1)	3,923	2 (2)	2,192
United States.....	2 (2)	4,802	2 (2)	2,385	1 (1)	2,417
Germany.....	3 (3)	3,423	3 (3)	1,701	3 (3)	1,722
France.....	4 (4)	2,500	4 (4)	1,554	5 (4)	946
Canada.....	5 (6)	1,628	8 (9)	623	4 (5)	1,015
Japan.....	6 (5)	1,567	5 (5)	800	6 (6)	767
Belgium.....	7 (7)	1,379	6 (8)	711	8 (8)	668
Netherlands.....	8 (8)	1,137	7 (7)	656	12 (11)	481
British India.....	9 (9)	1,136	9 (10)	459	7 (7)	677
Union of South Africa.....	10 (12)	966	13 (15)	414	9 (10)	552
Australia.....	11 (13)	936	11 (13)	428	11 (12)	508
Argentina.....	12 (11)	919	15 (12)	370	10 (9)	549
Italy.....	13 (10)	831	10 (6)	435	14 (13)	396
Sweden.....	14 (14)	801	12 (14)	415	15 (15)	386
Brazil.....	15 (16)	785	16 (16)	366	13 (14)	419
Switzerland.....	16 (15)	650	14 (11)	383	19 (19)	267

In the production and export of many important commodities, Canada ranks high among the countries of the world. The Dominion is first in the production of asbestos, nickel and newsprint, supplying normally over half the world's asbestos, about 90 p.c. of the world's nickel, and more newsprint than the rest of the world combined. In the production of copper and zinc, Canada stood third in 1936. With respect to the latter, however, the comparison is based on metal output; on a mine output basis the comparison would be more favourable to Canada. In gold and lead production Canada was in fourth place in 1936, and fifth place in respect to output of automobiles. According to figures issued by the Automobile Manufacturers Association, New York, in "Automobile Facts and Figures", the total world output of automobiles in 1936 comprised 5,816,022 units, of which the United States furnished 4,454,115 units; the United Kingdom 481,447 units; Germany 297,512 units; France 201,737 units; and Canada 162,167 units. In wheat production Canada was in seventh position.

The Dominion led the world during 1936 in exports of wheat, newsprint paper, nickel and asbestos, and in exports of wheat flour occupied second place, being exceeded by Australia. Canada ranked third in exports of automobiles, and fourth both in exports of rubber tires and of wood pulp. Canada also ranks high in the world's exports of many other products, such as lumber and timber, fish, copper, barley, cheese, raw furs, whisky, meats, farm implements, cattle, gold, silver, rye, oats, rubber footwear, leather and hides.

**Canada's Imports of Twenty-five Leading Commodities, fiscal
year 1936-37 compared with 1935-36**

Rank 1935-36	Rank 1936-37	Commodity (In order of value, 1936-37)	Total Imports, 1936-37		Increase or Decrease 1936-37 compared with 1935-36	
			Quantity	Value	Quantity	Value
				\$		\$
1	1	Crude petroleum..... gal.	1,249,391,532	39,704,808	+ 51,275,057	+ 4,139,830
2	2	Coal..... ton	13,353,762	34,854,726	+ 943,921	+ 1,019,755
4	3	Machinery, except farm.....	-	31,086,819	-	+ 9,172,627
3	4	Automobile parts.....	-	27,379,705	-	+ 4,672,774
5	5	Plates and sheets, iron..... cwt.	7,241,834	22,645,846	+ 1,142,982	+ 4,192,691
6	6	Raw cotton..... lb	147,836,584	19,935,773	+ 11,281,090	+ 2,695,906
7	7	Sugar for refining..... cwt.	10,210,123	17,253,605	+ 1,022,074	+ 1,569,518
8	8	Fresh fruits.....	-	15,881,865	-	+ 2,984,213
9	9	Vegetable oils..... gal.	20,731,508	12,686,869	- 879,273	+ 621,386
10	10	Books and printed matter.....	-	12,330,352	-	+ 2,447,780
11	11	Electrical apparatus.....	-	11,991,038	-	+ 3,233,201
18	12	Farm implements and machinery.....	-	10,803,750	-	+ 4,621,532
25	13	Corn..... bu.	18,632,448	10,551,080	+ 10,324,830	+ 5,592,693
34	14	Automobiles..... No.	13,307	10,410,102	+ 8,765	+ 7,105,274
15	15	Rubber, crude..... lb	62,546,059	10,310,668	+ 5,630,668	+ 3,574,107
14	16	Tea..... lb.	40,620,874	9,348,409	+ 3,472,087	+ 1,104,661
13	17	Engines and boilers.....	-	8,663,262	-	+ 422,984
19	18	Furs.....	-	8,208,740	-	+ 2,186,472
12	19	Spirits and wines.....	-	8,094,533	-	+ 297,847
16	20	Clay and products.....	-	7,744,156	-	+ 1,150,511
21	21	Glass and glassware.....	-	7,583,043	-	+ 1,784,193
17	22	Noils, tops and waste wool..... lb.	14,007,083	7,408,953	- 75,344	+ 1,066,872
20	23	Paper.....	-	7,060,499	-	+ 1,071,248
23	24	Raw wool..... lb.	23,771,236	6,476,705	+ 4,552,163	+ 2,507,186
22	25	Dried fruits..... lb.	91,000,082	6,257,465	+ 1,276,045	+ 761,287



Unloading Canadian Newsprint at Havana, Cuba.
Courtesy, Commercial Intelligence Service, Department of Trade and Commerce.

**Canada's Domestic Exports of Twenty-five Leading Commodities,
 fiscal year 1936-37 compared with 1935-36**

Rank 1935/1936 -36 -37	Commodity (In order of value, 1936-37)	Total Domestic Exports, 1936-37		Increase or Decrease 1936-37 compared with 1935-36	
		Quantity	Value	Quantity	Value
			\$		\$
1	1 Wheat.....bu.	227,996,513	223,461,009	+ 48,872,333	+ 74,884,034
2	2 Newsprint paper.....cwt.	62,899,709	110,176,448	+ 9,638,083	+ 19,415,069
3	3 Gold bullion, non-mone- etary.....oz.	2,188,199	76,667,269	- 195,273	- 6,747,585
4	4 Nickel.....cwt.	1,790,361	45,882,184	+ 181,109	+ 4,237,804
6	5 Planks and boards.....M ft.	1,866,811	40,284,864	+ 484,097	+ 12,679,583
8	6 Meats.....	-	36,114,497	-	+ 11,893,695
10	7 Copper bars, rods, etc. cwt.	3,583,982	34,873,145	+ 597,816	+ 11,175,353
5	8 Wood pulp.....cwt.	15,792,020	33,210,237	+ 2,069,142	+ 5,106,267
7	9 Fish.....cwt.	3,417,281	25,087,602	+ 204,567	+ 652,354
12	10 Whisky.....pf. gal	5,286,023	21,777,246	+ 2,294,669	+ 5,488,661
11	11 Wheat flour.....bbl	4,771,007	21,587,038	- 87,940	- 2,204,421
9	12 Automobiles.....No.	53,579	19,425,730	- 13,752	- 4,460,300
13	13 Raw furs.....	-	18,444,030	-	+ 2,705,864
38	14 Barley.....bu.	18,749,862	14,901,211	+ 11,430,478	+ 11,227,092
21	15 Cattle.....No.	315,271	14,000,092	+ 167,479	+ 6,639,913
18	16 Lead.....cwt.	3,543,067	13,779,201	+ 602,711	+ 5,492,419
15	17 Aluminium in bars.....cwt.	680,357	12,522,047	+ 121,498	+ 3,163,973
24	18 Cheese.....cwt.	807,391	11,236,543	+ 221,942	+ 4,446,955
20	19 Asbestos, raw.....ton	320,987	10,569,302	+ 102,889	+ 2,957,458
17	20 Zinc.....cwt.	3,150,064	9,863,937	+ 285,472	+ 1,445,738
23	21 Pulpwood.....cord	1,183,361	8,679,198	+ 209,623	+ 1,736,096
28	22 Platinum and other metals of the platinum group in concentrates or other forms	-	8,185,250	-	+ 2,898,990
22	23 Rubber tires.....No.	1,269,624	7,712,980	+ 32,763	+ 494,783
27	24 Machinery, except farm.....	-	7,607,472	-	+ 1,803,547
14	25 Silver ore and bullion.....oz.	16,187,592	7,243,750	- 4,003,426	- 5,230,210

Distribution of Canada's Trade by Countries.—The following statement on imports from twenty-five leading countries shows how predominant the two great English-speaking countries are as a source of supply of Canadian imports. The United States supplied approximately 59 p.c. of the Dominion's imports in 1936-37, while the United Kingdom, although having only about one-third the United States share in Canada's imports, had, nevertheless, more than ten times as large a share as Argentina, which fifteenth place in 1935-36 as a result, mainly, of a large increase in imports of corn. The countries shown account for about 97 p.c. of total imports 213.1 p.c. The countries shown account for about 97 p.c. of total imports in each year. The wide geographical distribution of the increase in imports is indicated by the number of plus signs in the last two columns of the table.

Canada's Imports from Twenty-five Leading Countries, fiscal year 1936-37 compared with 1935-36 and 1934-35

Rank			Country (In order of importance, 1936-37)	Total Imports			Increase or Decrease 1936-37 compared with—	
1934-35	1935-36	1936-37		1934-35	1935-36	1936-37	1934-35	1935-36
				\$'000	\$'000	\$'000	p.c.	p.c.
1	1	1	United States.....	303,640	319,479	394,419	+ 29.9	+ 23.5
2	2	2	United Kingdom.....	111,682	117,875	129,524	+ 16.0	+ 9.9
16	15	3	Argentina.....	2,791	3,744	11,724	+320.1	+213.1
3	3	4	Germany.....	10,014	9,908	11,684	+ 16.7	+ 17.9
15	6	5	British Straits Settlements.....	2,970	7,198	10,541	+254.9	+ 46.4
6	5	6	Australia.....	6,327	7,277	9,470	+ 49.7	+ 30.1
5	4	7	British India.....	6,415	7,458	8,326	+ 29.8	+ 11.6
12	8	8	Belgium.....	3,614	5,094	6,696	+ 85.3	+ 31.5
4	7	9	France.....	6,444	6,718	6,454	+ 0.1	- 3.9
18	17	10	New Zealand.....	2,535	3,622	5,377	+112.1	+ 38.4
11	11	11	Jamaica.....	4,305	4,313	5,173	+ 20.2	+ 20.0
19	10	12	British Guiana.....	2,449	4,758	5,051	+106.2	+ 6.2
14	14	13	Peru.....	3,430	4,171	4,958	+ 44.5	+ 18.9
9	18	14	Japan.....	4,425	3,466	4,797	+ 8.4	+ 18.4
20	16	15	China.....	2,346	3,717	4,275	+ 82.2	+ 15.0
10	12	16	Netherlands.....	4,344	4,258	4,252	- 2.1	- 0.1
8	13	17	Colombia.....	4,564	4,202	4,197	- 8.1	- 0.1
23	21	18	Ceylon.....	2,093	2,918	3,962	+ 89.3	+ 35.8
7	19	19	Barbados.....	4,861	3,430	3,711	- 23.7	+ 8.2
30	20	20	British East Africa.....	1,330	3,225	2,829	+112.7	+ 12.3
29	22	21	Trinidad and Tobago.....	1,357	2,593	2,787	+105.4	+ 7.5
21	23	22	Switzerland.....	2,335	2,573	2,701	+ 15.7	+ 5.0
24	28	23	Fiji Islands.....	1,800	1,770	2,395	+ 33.1	+ 35.3
22	25	24	Czechoslovakia.....	2,310	1,970	2,365	+ 2.4	+ 20.1
26	24	25	Newfoundland.....	1,589	2,019	2,162	+ 36.1	+ 7.1

The table on p. 116 shows Canada's domestic exports to twenty-five leading countries. The countries shown account for about 97 p.c. of total domestic exports in each year. The United States and United Kingdom rank first and second, respectively, as export markets, the United States being first in the latest three fiscal years, while the United Kingdom was first in 1933-34. Statistics of Canadian exports, by countries, should be read with the qualification that all the goods shown as exported to some countries may not finally be consumed in those countries, while, on the other hand, other countries may ultimately buy and use more Canadian goods than the Canadian export statistics indicate. For example, exports

to the United Kingdom are known to include large amounts of wheat and other grains shipped "on order". The final destination is not known at the time of exportation from Canada. Similarly, considerable quantities of Canadian exports are consigned to one or other of the great European free ports and thence transhipped to the country of consumption. Since the country of final destination in these cases is not known at the time when the goods leave Canada, even to the owners, exports to such countries as the United Kingdom, Belgium, Netherlands, etc., which carry on a large entrepôt trade, are higher than would be the case if the exports in question were credited to the countries of final consumption. Exports to other countries such as Norway, Switzerland, Czechoslovakia, etc., which obtain Canadian goods indirectly, would be correspondingly higher than the Canadian export statistics indicate. The figures of the table show a marked expansion of Canada's exports to all the leading countries during the two latest years. The percentage increases are particularly large in the cases of Belgium, New Zealand, and Germany.



Unloading Canadian Aluminium from a Lighter in Osaka, Japan.

Courtesy, Commercial Intelligence Service, Department of Trade and Commerce.

Canada's Domestic Exports to Twenty-five Leading Countries, fiscal year 1936-37 compared with 1935-36 and 1934-35

Rank			Country (In order of importance, 1936-37)	Total Domestic Exports			Increase or Decrease 1936-37 compared with—	
1934-35	1935-36	1936-37		1934-35	1935-36	1936-37	1934-35	1935-36
				\$'000	\$'000	\$'000	p.c.	p.c.
1	1	1	United States.....	304,721	360,302	435,015	+ 42.8	+ 20.7
2	2	2	United Kingdom.....	290,885	321,557	407,997	+ 40.3	+ 26.9
3	3	3	Australia.....	18,082	23,974	26,954	+ 49.1	+ 12.4
4	6	4	Belgium.....	11,780	11,061	23,436	+ 98.9	+111.9
5	4	5	Japan.....	16,936	14,844	21,630	+ 27.7	+ 45.7
5	5	6	British South Africa.....	12,128	13,502	15,674	+ 28.4	+ 15.3
8	9	7	France.....	9,842	7,048	11,718	+ 19.1	+ 53.2
9	7	8	New Zealand.....	7,345	10,221	11,187	+ 52.3	+ 9.5
7	8	9	Netherlands.....	10,072	9,445	10,916	+ 8.4	+ 15.6
12	12	10	Germany.....	4,474	4,560	7,829	+ 75.0	+ 71.7
10	10	11	Newfoundland.....	6,469	6,903	7,728	+ 19.5	+ 12.0
11	11	12	Norway.....	4,789	4,577	6,907	+ 44.2	+ 50.9
13	13	13	China.....	4,461	4,556	4,899	+ 9.8	+ 7.5
17	19	14	Italy.....	3,631	2,377	4,656	+ 28.2	+ 95.9
19	15	15	Brazil.....	2,770	3,711	3,873	+ 39.8	+ 4.4
14	18	16	Irish Free State.....	4,121	3,039	3,800	+ 7.8	+ 25.0
16	14	17	Argentina.....	4,015	3,982	3,727	+ 7.1	+ 6.4
18	16	18	Jamaica.....	3,088	3,342	3,327	+ 7.7	+ 0.5
24	21	19	Sweden.....	1,637	2,295	3,237	+ 97.7	+ 41.0
15	17	20	British India.....	4,118	3,134	3,221	+ 21.8	+ 2.8
-	43	21	Greece.....	5	430	3,082	-	+616.7
21	20	22	Trinidad and Tobago.....	2,207	2,314	3,054	+ 38.4	+ 32.0
23	22	23	Mexico.....	1,885	1,720	2,854	+ 51.4	+ 66.0
-	-	24	Morocco.....	66	83	1,942	-	-
25	27	25	British Straits Settlements.....	1,494	1,315	1,939	+ 29.8	+ 47.5

Canada's Trade with British Empire and Foreign Countries, fiscal years 1926-27 to 1936-37

Fiscal Year	Canada's Trade with—					
	United Kingdom	United States	Other British Empire	Other Foreign Countries	Total British Empire	Total Foreign Countries
	\$	\$	\$	\$	\$	\$
Imports—						
1926-27.....	163,939,065	687,022,521	50,129,473	129,801,446	214,069,538	816,823,967
1927-28.....	186,435,824	718,898,270	63,124,733	140,499,630	249,580,557	859,395,900
1928-29.....	194,041,381	868,012,229	63,346,829	140,278,652	237,388,210	1,008,290,881
1929-30.....	189,179,738	847,442,037	63,494,684	148,158,943	252,674,602	995,598,980
1930-31.....	149,497,392	584,407,018	55,401,034	117,307,251	204,898,426	701,714,269
1931-32.....	106,371,779	351,685,775	41,440,214	79,005,136	147,811,993	430,601,911
1932-33.....	86,468,055	232,548,055	33,918,269	53,451,365	120,384,324	285,999,420
1933-34.....	105,100,764	238,187,681	35,303,122	55,207,058	140,403,886	293,394,739
1934-35.....	111,682,490	303,639,972	44,503,981	62,004,710	156,186,471	366,244,682
1935-36.....	117,874,822	319,479,594	59,846,488	65,518,159	177,721,510	384,987,753
1936-37.....	129,524,098	394,419,012	68,657,957	79,274,499	198,182,055	473,693,511
Exports (Canadian)—						
1926-27.....	446,872,851	468,434,180	93,564,910	245,296,956	540,437,761	713,731,136
1927-28.....	410,691,392	483,700,034	88,284,515	251,228,053	498,975,907	734,928,087
1928-29.....	429,730,485	504,161,604	106,258,803	328,108,239	535,989,288	832,269,843
1929-30.....	281,745,965	515,049,763	97,823,173	225,637,401	379,571,138	740,687,164
1930-31.....	219,246,499	349,660,563	73,617,897	157,217,708	292,864,396	506,878,271
1931-32.....	174,043,725	257,770,160	46,016,686	122,201,241	220,060,411	379,971,401
1932-33.....	184,361,019	197,424,723	37,757,908	108,520,628	222,118,927	305,945,351
1933-34.....	288,582,666	220,072,810	50,423,723	106,874,872	339,006,389	326,947,682
1934-35.....	290,885,237	304,721,354	67,314,241	93,705,063	358,199,478	398,426,447
1935-36.....	321,556,798	360,302,426	77,754,681	89,416,512	399,311,479	449,718,938
1936-37.....	407,996,698	435,014,544	87,601,407	130,569,257	495,598,105	565,583,801

REVIEW OF CANADA'S TRADE BY MONTHS

The monthly trade figures as available when going to press for the calendar year 1937 compared with the years 1934, 1935 and, 1936, were as follows:—

Imports and Exports by Months, January, 1934, to October, 1937

Month	Imports				Exports of Canadian Produce			
	1934	1935	1936	1937	1934	1935	1936	1937
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
January	32,391	37,229	40,590	51,883	55,650	54,737	63,865	82,242
February	33,592	37,044	41,697	48,681	52,396	53,480	62,074	74,792
March	47,519	48,191	52,681	70,990	60,611	67,420	73,445	88,327
April	34,814	36,637	42,217	56,886	38,282	47,314	57,424	65,517
May	52,887	54,540	59,121	76,707	66,802	65,498	83,820	99,497
June	46,186	46,732	57,598	75,669	64,826	58,505	79,181	107,478
July	44,145	48,414	53,821	71,996	64,398	63,296	83,899	99,158
August	43,507	49,560	50,258	69,966	65,329	75,676	92,559	101,471
September	42,208	44,689	52,983	70,240	63,566	77,259	88,894	94,152
October	47,229	52,751	65,159	82,113	77,259	90,526	110,990	102,747
November	49,884	55,958	66,169	—	72,579	94,484	120,971	—
December	39,107	38,569	52,990	—	67,948	77,099	98,074	—

Non-Commodity Items of Foreign Exchange

A nation's commodity trade alone cannot be taken as a complete index of its prosperity, for there are many other exchanges besides those of goods, all of which must be taken into account in order to find out the basic state of affairs in regard to total international transactions.

The Tourist Trade.—An item in the above which deserves special mention is the tourist trade. For the year 1936 the tourist trade was calculated to have brought \$255,763,000 into the country, and after the deduction of \$99,805,000 spent by Canadian tourists abroad, the favourable balance was estimated at \$155,958,000. By far the most important factor is the automobile traffic between Canada and the United States, it being estimated that such United States tourists spent \$159,473,000 in Canada in 1936, while Canadian automobile tourists spent about \$43,811,000 in the United States. Tourist expenditures are, in part, the return which Canada derives from her picturesque scenery, fish and game, winter sports, etc.

Tourist Expenditures, 1929-36

Year	Expenditures of Outside Tourists in Canada (1)	Expenditures of Canadian Tourists in Other Countries (2)	Excess of (1) over (2)
	\$	\$	\$
1929	309,379,000	121,645,000	187,734,000
1930	279,238,000	100,389,000	178,849,000
1931	250,776,000	76,452,000	174,324,000
1932	212,448,000 ¹	57,403,000	155,045,000
1933	117,124,000 ¹	50,860,000	66,264,000
1934	145,974,000	63,658,000	82,316,000
1935	214,778,000	91,600,000	123,178,000
1936	255,763,000	99,805,000	155,958,000

¹ Canadian funds. No adjustment for exchange was considered necessary in subsequent years.



Camper at Waskesiu Lake, Prince Albert National Park, Sask.—Each province of the Dominion offers to tourists ideal, though characteristically different, conditions for outdoor life.

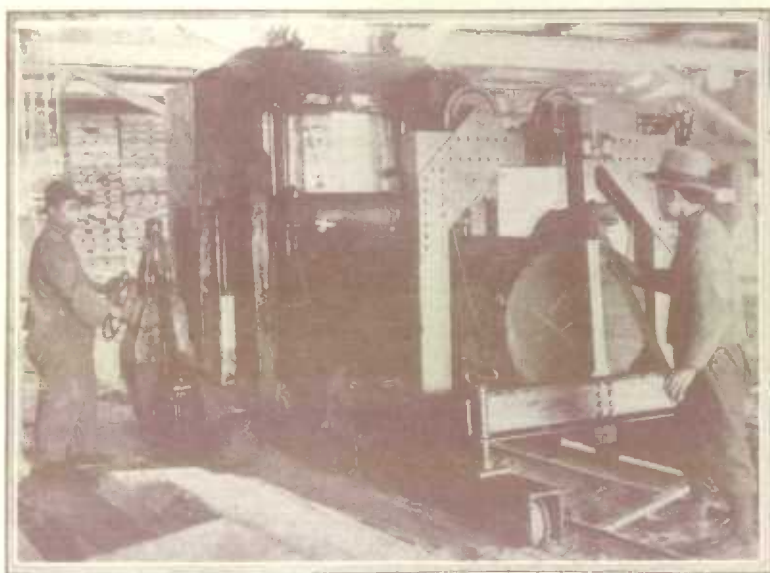
Courtesy, Canadian National Railways.

Apart from the revenue which Canada derives directly from the tourist trade there are many other important results. First-hand knowledge of the country, its products and resources, serves to stimulate the demand for Canadian products and increases the supplies of new capital for investment here. There is, too, a value derived from neighbours becoming better acquainted and through the exchange of ideas that cannot be measured in dollars and cents. A more widely diffused knowledge of the culture, interests and difficulties of other nations leads to a richer social and intellectual life for all and the mutual understanding which springs from such contacts is an invaluable source of international good will.

The Canadian Balance of International Payments.—Canada's trade with other countries is not limited to the exchange of merchandise. There are also the exchanges of numerous services, such as the tourist trade, as well as the movements of capital between Canada and other countries and the transactions connected with the servicing of international investments. It is by means of the annual investigation of the balance of international payments that it is possible to discover the principal characteristics of these transactions between Canada and the rest of the world.

In 1936 Canada's transactions with other countries were particularly impressive. There was an unusually large credit balance from the trade in goods, gold, and services with other countries. That is, the receipts from

exports of merchandise, the sale of gold, and the tourist trade were much more than sufficient to make payment of such current obligations as interest and dividends to investors residing outside of Canada. These surplus credits derived from the export of goods and services were employed for the transfer of capital from Canada, for it is by means of exchange of goods and services that capital is transferred between nations. The large outflow of capital from Canada during 1936 was principally for the retirement of indebtedness abroad and for the transfer of capital funds from Canada in connection with the operations of insurance companies, international "branch plants", etc. The volume of the retirements of Canadian bonds owned outside of Canada was very heavy. In addition to the substantial amount of these obligations maturing during the year, there were a large number of issues called for redemption by Canadian corporations, which took advantage of the favourable conditions to reduce their obligations outside of Canada.



Douglas Fir Logs being Sawed with Chinese-Made Six-Bladed Bandsaw
at Tientsin, North China.

Courtesy, Commercial Intelligence Service, Department of Trade and Commerce.

To see how these results were achieved and to appreciate their magnitude, it is necessary to inspect the transactions in more detail. This may be done conveniently by presenting these facts in the form described as the balance of payments statement. The current account shows the source of Canada's surplus receipts or credits from the trade in goods, gold, and services and the capital account shows the principal movements of capital between Canada and other countries during 1936. If the estimates of the values of the transactions in the current account were exactly accurate and if there were no omissions, the net credits shown there would exactly

represent the net outward movement of capital from Canada during the year. But such perfect accuracy, of course, is unattainable in practice owing to the magnitude and complex nature of the transactions.

Estimated Balance of International Payments, 1935¹ and 1936

Item	1935 ¹		1936	
	Gross Value of Transactions	Net Receipts (+) Net Payments (-)	Gross Value of Transactions	Net Receipts (+) Net Payments (-)
	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Exchanges of Commodities, Services and Gold				
Merchandise sold to other countries	735.6		947.9	
Merchandise bought from other countries	542.9	+192.7	625.7	+322.2
Gold sold to other countries	116.7		132.0	
Gold received from other countries		+116.7	1.0	+131.0
Expenditures in Canada of tourists from abroad	214.8		255.8	
Expenditures of Canadian tourists abroad	91.6	+123.2	99.8	+156.0
Interest and dividends received from abroad	62.0		76.2	
Interest and dividends paid abroad	270.6	-208.6	310.0	-233.8
Receipts from abroad for freight transportation	68.2		80.2	
Payments abroad for freight transportation	82.3	-14.1	98.0	-17.8
Receipts for other trade and service transactions	20.1		21.7	
Payments for other trade and service transactions	49.1	-29.0	55.7	-34.0
Net Receipts (Credits)	-	+180.9	-	+323.6
Capital Movements				
Sales of new issues of Canadian securities abroad	113.1	+113.1	106.1	+106.1
Retirements of Canadian securities owned abroad	267.5	-267.5	270.0	-270.0
Receipts from the sale of other securities abroad	301.8		422.5	
Payments for the purchase of other securities abroad	230.8	+71.0	414.7	+7.8
Remittances to insurance companies in Canada	20.0		19.0	
Remittances abroad by insurance companies in Canada	38.0	-18.0	45.0	-26.0
Decline in estimated net assets abroad of Canadian banks	0.1	+0.1	2.6	+2.6
Other capital movements—net payments in operations of international branch plants, etc.	52.2	-52.2	74.2	-74.2
Net Outward Movement (Net Payments)	-	-153.5	-	-253.7

¹Revised figures.



The Port of Montreal.

CHAPTER XIII

INTERNAL TRADE—WHOLESALE AND RETAIL TRADE —FREIGHT MOVEMENTS—SECURITY PRICES— COMMODITY PRICES—COST OF LIVING

Internal trade in Canada is of primary importance among economic activities. The home consumption of goods and services by a population of 11,120,000 requires a greater expenditure of economic activity than that required for the prosecution of external trade. Internal trade includes the transportation and distribution of goods within the country through



Large-Dimension Logs from the Forests of British Columbia being
Conveyed to the Sawmill for Conversion into Lumber.

Courtesy, Hayes Manufacturing Company Limited, Vancouver.

the medium of railways, steamships, warehouses, wholesale and retail stores and other agencies. It includes all professional services such as those carried on by doctors, theatres, hospitals, schools, banks, insurance companies and innumerable others. All such activities, even if not productive of material goods, add substantially to the national income.

Historically, Canadian internal trade developed as a result of the fur trade, fur being the first great staple sought in Canada by Europeans in exchange for their products. This trade spread until it covered the whole area of the Dominion, forming the framework into which the economic activities of the nation were gradually built. Lumber, fisheries, agricultural, mineral and other resources were gradually exploited. As population grew, local manufacturing industries supplanted certain imports. Diverse resources in various parts of the country led to a vast exchange of products and growing wealth to increasing abundance of services.

Unfortunately, owing to the many ramifications of internal trade, its statistical measurement presents great difficulties. Nevertheless, some idea of its extent may be gathered from the fact that in 1935 the grand total value of the activities of those occupied in production of all kinds, as estimated under the heading National Income on p. 25, was \$3,831,553,000, while the money value of exports of Canadian produce was \$825,284,114.

The sections which follow deal with those features of internal trade which have not received treatment elsewhere in this handbook.

Wholesale and Retail Trade

Wholesale Trade.—The supplying of goods for the retail trade requires a complex organization, made up of many types of wholesale establishments. The 1931 census of wholesale business showed that there were more than 5,000 wholesale houses in Canada with sales amounting to slightly more than one billion dollars and 8,000 other types of wholesalers handling sales and orders to the value of two billion dollars. The capital invested in both types of wholesale establishments was valued at \$759,000,000. Ninety thousand persons found employment in wholesale establishments and their earnings totalled \$146,000,000.

Indexes of Sales of Retail and Wholesale Establishments, by Provinces, 1930 and 1933-36

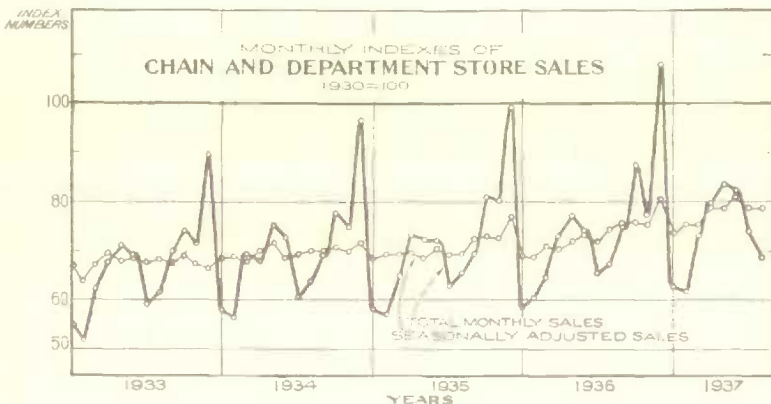
Province	Retail Stores					Wholesale Establishments ¹				
	1930	1933	1934	1935	1936	1930	1933	1934	1935	1936
Prince Edward Is.	100.0	64.7	70.3	71.9	82.5	100.0	67.9	77.0	80.3	88.0
Nova Scotia.....	100.0	69.2	77.2	81.6	87.5					
New Brunswick....	100.0	62.1	69.1	73.1	79.4					
Quebec.....	100.0	64.9	69.0	71.3	76.5	100.0	65.9	74.7	77.7	84.7
Ontario.....	100.0	67.4	74.9	78.0	83.0	100.0	68.9	79.4	83.3	91.5
Manitoba.....	100.0	64.5	69.4	73.4	78.5	100.0	60.6	67.7	73.4	79.8
Saskatchewan.....	100.0	54.5	59.4	63.2	69.0					
Alberta.....	100.0	61.8	69.0	73.3	77.3					
British Columbia..	100.0	62.6	69.6	75.8	83.6	100.0	63.5	71.6	77.7	84.9
Yukon and N.W.T.	100.0	54.9	64.9	68.3	61.2	-	-	-	-	-
Canada.....	100.0	64.8	71.1	74.5	79.9	100.0	65.7	74.7	78.9	86.2

¹ Regular wholesale houses. For a full description of the index, see the report "Wholesale Trade in Canada, 1930-1933", obtainable from the Dominion Statistician.

Retail Trade.—The distribution of goods and services, to meet the demands of consumers, requires many types of establishments which employ

hundreds of thousands of persons and use many millions of dollars of capital. The 1931 Census of Merchandising and Service Establishments showed that in 1930 there were 125,000 retail stores in Canada with sales amounting to \$2,756,000,000. Including proprietors receiving a fixed salary, there were about 300,000 persons on the payrolls of these stores and approximately \$300,000,000 paid out to them in salaries and wages during the year. The capital invested in these retail stores amounted to \$1,200,000,000.

Current Trend.—The trend in sales of retail stores and regular wholesale houses, by provinces, for the years 1930 and 1933 to 1936 is shown above. No allowances have been made in the indexes for changes in retail and wholesale prices during the period. While the decline in retail trade from 1930 to 1933 was 35.2 p.c. (34.3 p.c. in wholesale trade), some kinds of business had much heavier losses than others. How much of the decrease was due to the decline in prices and how much to a reduction in physical volume of trade, it is not possible to say. Reports on retail and wholesale trade for recent years show that the improvement which commenced in 1934 was continued throughout 1935 and 1936, the dollar value of retail sales for the latter year being more than 23 p.c. above 1933 although still 20 p.c. below the 1930 level. Monthly indexes based on returns from chain and department stores are illustrated below. These reveal a further improvement of 8 p.c. for the first eight months of 1937 compared with the corresponding period in 1936.



Chain Stores.—In recent years, great changes have taken place in the distribution of goods, the chain store now doing a large proportion of the work of retailing merchandise. The survey of chain stores, made in connection with the Census of Merchandising, shows that chain stores (other than department store chains) do about 18 p.c. of the total retail business of the Dominion. This ratio has remained relatively constant since 1930, the first year for which such data are available. The proportion of the total business transacted by chains varies widely in different lines of trade. The modern variety store is a typical chain store development, practically the entire business of such stores being transacted by chains. The multi-

unit type of distribution is also important in the food retailing field where chains accounted for 28.9 p.c. of the combined business of all grocery stores and meat markets in 1936. The trend in chain store business in Canada from 1931 to 1936 is shown below.

Summary Statistics of Chain Stores, 1931-36

Calendar Year	Number of Chains	Number of Chain Stores	Value of Chain Sales	
			Amount	P.C. of Total Sales
			\$	
1931	506	8,557	434,199,700	18.7
1932	486	8,388	360,806,200	18.8
1933	461	8,230	328,902,600	18.5
1934	445	8,210	347,186,100	17.9
1935	445	8,024	364,589,800	17.9
1936	457	8,124	394,935,000	17.9

Retail Services.—More than 40,000 establishments are engaged in supplying services of various kinds to the Canadian public. The provision of amusements and domestic and personal services forms the chief business of the service groups. In 1930, \$249,000,000 was spent by consumers in such establishments; employment was provided for 64,000 persons.

Motion Picture Theatres.—The motion picture continues as the most popular form of amusement in Canada. Figures for the year 1936 show 959 motion picture theatres with a total of 127,241,600 paid admissions. Box office receipts for the same year (exclusive of amusement taxes) were \$29,560,000 or 8 p.c. greater than for 1935. They were 19 p.c. above the low point reached in 1933 but were still 23 p.c. below the amount recorded for 1930.

Internal Freight Movement

The subject of interprovincial trade is of interest to many persons, but comprehensive data are even more difficult to record than those of international trade. There are practically no restrictions to all kinds of movements across the provincial borders and consequently the records of movements of commodities, people, money, etc., are very incomplete.

The railways are required to record the tons of revenue freight, under 76 commodity classes, loaded and unloaded and received from and delivered to foreign railways and boat lines for each province. The excess of loadings in any province over unloadings shows a net movement out of that province, but does not reveal the place to which such excess was shipped and, similarly, the excess of unloadings over loadings indicates a net import into the province. For the Prairie Provinces, where only a small proportion of the freight is moved by other agencies than the railways, the net movements into and out of the provinces indicate fairly accurately net imports and exports, but in the eastern provinces where vessels and motor vehicles are more important factors in transportation only a part of the story is told by these railway data. No records are yet available of the movements of commodities, people, etc., by vessel or motor vehicle from province to province.

Security Prices

Security Prices Since 1913.—The Bureau of Statistics publishes several series of index numbers, designed to measure the movement of security prices in general and of important groups of stocks in particular, and which constitute an important barometer of business conditions. The table below shows the course of the Investors' index number for representative months in the years from 1935 to 1937, inclusive. A table of the index numbers of mining stocks by months during the years 1934-37 is also given.

The record of Canadian common stock prices, extending back to 1914, is quite different from that of commodity prices. During the War and in the years immediately following, the average level of commodity prices advanced to nearly two and one-half times its height in 1914, while common stock prices averaged less than two-thirds of 1914 levels during this period. Again, during the years 1927 to 1929, the behaviour of these two price groups was very different. This time stock prices increased by approximately 100 p.c., while commodity prices drifted slowly downward. Both commodities and stocks declined subsequent to the latter part of 1929, and since the spring months of 1933 they have both moved irregularly upward.

From the extreme high of 217.1 registered in September, 1929, a general index of common stock prices dropped sharply at first, and then more gradually, until it reached 43.2 in June, 1932. Temporary recovery was followed by a secondary decline lasting until March, 1933, when the index was 48.9. Subsequent intermittent recovery carried this series upward to 147.2 in March, 1937, before any major reaction occurred. Since then, however, markets have recorded major losses, particularly in April and September. In the latter month, the Investors' price index was 118.9.

Investors' Monthly Index Numbers of Common Stocks, 1935-37

(1926 = 100)

Year and Month	Banks	Utilities	Industrials	Total
1935 (representative months)—				
January.....	80.1	50.4	129.7	88.6
March.....	76.8	45.1	125.6	84.4
June.....	72.0	45.0	145.2	93.8
September.....	65.9	46.3	147.1	93.6
December.....	75.1	50.1	178.2	107.4
1936 (representative months)—				
January.....	78.6	52.4	187.7	112.9
March.....	79.6	55.5	194.8	117.4
June.....	77.8	53.3	189.3	113.8
September.....	79.7	54.8	200.6	119.5
December.....	87.7	62.8	212.8	129.2
1937 (representative months)—				
January.....	94.4	68.5	222.0	137.4
March.....	95.9	71.0	241.7	147.2
June.....	92.3	63.2	210.1	129.4
September.....	84.9	57.4	193.3	118.9

The post-war peak in mining share prices was reached in October, 1927, two years prior to the highest levels in utilities and industrial stocks. At that time a price index for mining issues touched 143.8, considering

prices in 1926 as equal to 100.0. It then declined irregularly to an all-time low of 46.8 during June, 1932. From that time until February, 1937, the general trend of mining stock prices was decidedly upward, although the advance was interrupted by a long period of gradual reaction beginning in the final quarter of 1934 and extending through the greater part of 1935. At the crest of the rise in February, 1937, the mining stock index was 177.2. This was followed by sharp recessions in the spring and early autumn, with the September index having fallen to the level of 127.6.

Index Numbers of Twenty-four Mining Stocks, by Months, 1934-37

Month	1934	1935	1936	1937	Month	1934	1935	1936	1937
January.....	108.9	124.3	142.4	174.6	July.....	137.2	117.9	157.6	141.8
February.....	114.4	124.2	149.8	177.2	August.....	141.1	115.6	158.1	146.2
March.....	128.1	128.2	144.2	172.6	September.....	139.2	119.1	157.6	127.6
April.....	137.2	128.7	145.8	154.1	October.....	133.5	118.6	158.2	121.6
May.....	129.8	128.3	150.3	142.1	November.....	125.5	125.5	167.0	129.4
June.....	138.5	123.0	150.1	134.7	December.....	124.9	133.6	167.7	-

Prices of Commodities

There have been three distinct periods in price history since the beginning of the Great War. During the first, a rapid rise and subsequent reaction occurred when the Canadian wholesale price index advanced from 64.0 to 155.9 between 1913 and 1920, and then declined to 97.3 for 1922. It remained close to this level (approximately 50 p.c. above price averages for 1913) until near the end of 1929. This seven-year stretch of comparative stability constituted the second period. During the final period, a decline carried the wholesale index downward from 95.6 for 1929 to 66.7 for 1932, after which a gradual recovery advanced it to 72.1 for 1935. Price levels at that time exhibited a tendency to stabilize at somewhat more than 10 p.c. above pre-war levels, but a secondary advance much more impressive than the first raised the wholesale price level sharply in the latter half of 1936, and still higher in 1937. The October, 1937, index number of wholesale commodity prices was 84.7.

Index Numbers of Wholesale Prices, 1913-36¹ and by Months, 1937

(1926 = 100)

				1937—	
1913.....	64.0	1925.....	102.6	January.....	81.7
1914.....	65.5	1926.....	100.0	February.....	82.9
1915.....	70.4	1927.....	97.7	March.....	85.5
1916.....	84.3	1928.....	96.4	April.....	86.1
1917.....	114.3	1929.....	95.6	May.....	85.1
1918.....	127.4	1930.....	86.6	June.....	84.6
1919.....	134.0	1931.....	72.1	July.....	87.5
1920.....	155.9	1932.....	66.7	August.....	85.6
1921.....	110.0	1933.....	67.1	September.....	85.0
1922.....	97.3	1934.....	71.6	October.....	84.7
1923.....	98.0	1935.....	72.1	November.....	-
1924.....	99.4	1936.....	74.6	December.....	-

¹ 236 commodities to 1926; 502 from 1926 to 1934; subsequently 587.

Cost of Living

Statistics of cost of living constitute a very important phase of price statistics. Index numbers of retail prices, rents and costs of services issued by the Bureau of Statistics are constructed from a general point of view, having for their object the measurement of the general movement of such prices and costs in the Dominion as a whole, and being so calculated as to make comparisons possible with other general index numbers constructed on similar principles, as, for example, the index of wholesale prices. Calculated as they are on the aggregative principle, i.e., the total consumption of each commodity, the Bureau's index numbers afford an excellent measurement of changes in the average cost of living in the Dominion as distinguished from that of any particular class or section.

Index Numbers of Retail Prices, Rents and Costs of Services, 1930-36, and by Months, 1937¹

(Average prices in 1926 = 100)

Year	Total Index	Food Index	Fuel Index	Rent Index	Cloth- ing Index	Sun- dries Index
1930.....	99.2	98.6	95.7	105.9	93.9	99.4
1931.....	89.6	77.3	94.2	103.0	82.2	97.4
1932.....	81.3	64.3	91.4	94.7	72.3	84.6
1933.....	77.5	63.7	87.7	85.1	67.1	82.6
1934.....	78.6	69.4	87.7	80.1	69.7	92.1
1935.....	79.1	70.4	86.8	81.3	69.9	92.2
1936.....	80.8	73.4	86.4	83.7	70.5	92.9
1937— ¹						
January.....	81.8	75.2	86.3	84.9	71.6	93.0
February.....	81.9	75.6	86.4	84.9	71.6	93.1
March.....	82.2	75.7	86.4	84.9	72.6	93.3
April.....	82.4	76.3	86.4	84.9	72.6	93.3
May.....	82.9	76.6	85.9	87.3	72.6	93.4
June.....	82.9	76.4	84.0	87.3	72.9	93.8
July.....	83.2	77.2	83.8	87.3	72.9	93.8
August.....	83.8	79.1	84.4	87.3	72.9	93.8
September.....	83.7	78.3	84.5	87.3	73.3	94.0
October.....	84.2	78.9	85.3	89.0	73.3	94.0
November.....	84.2	78.8	85.7	89.0	73.3	94.0

¹ Preliminary figures.

The general movements in living costs since pre-war days have been similar to those already outlined for wholesale commodity prices. From 65.4 in 1913, the Bureau's cost of living index mounted to 124.2 in 1920, and then declined sharply to 100.0 in 1922. There was little change of importance from that time until 1930, when the index was 99.2. In the next three years, however, it followed the lead of primary markets and declined to 77.5. The subsequent rise has been more gradual as indicated by the 1936 average of 80.8, and the November, 1937, figure of 84.2.

CHAPTER XIV

TRANSPORTATION AND COMMUNICATIONS

Steam Railways.—There are 35 railways in Canada with 42,552 miles of first main track. The Canadian National System with 21,556 miles of road and the Canadian Pacific with 16,756 miles constitute over 90 p.c. of the total. These two railways jointly own the Northern Alberta, with 923 miles of road, and the Toronto Terminals with 3.19 miles. The Canadian National operates the Hudson Bay Railway, with 510 miles of road, for the Dominion Government and owns the Central Vermont with 25 miles of road and the Thousand Islands Railway with 4.5 miles. United States railways operating in Canada account for 887 miles and, of the remaining 1,888 miles, the provincially-owned roads, the Temiskaming and Northern Ontario and Nipissing Central in Ontario with 574.43 miles, the Pacific Great Eastern with 347.8 miles in British Columbia and the

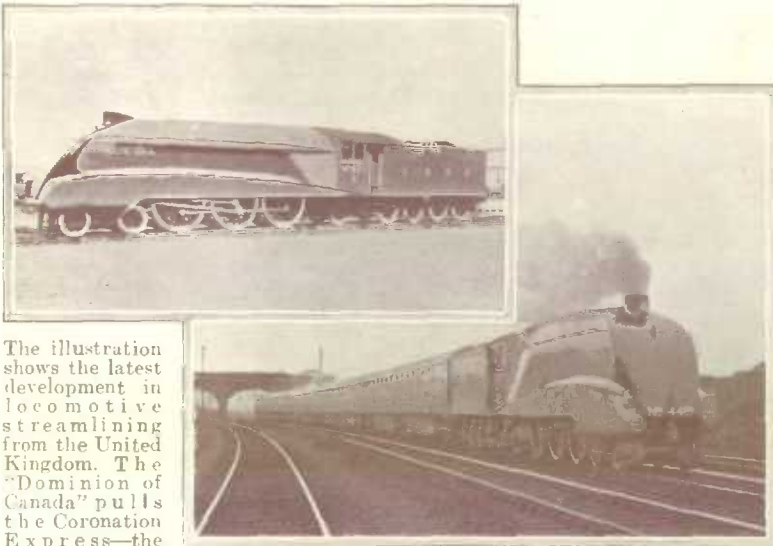


Transportation Within the Arctic Circle.—Travelling over flooded sea ice in the late spring in the Coronation Gulf area. *Inset:* Fleet of Eskimo schooners at Herschel Island.

Courtesy, Lands, Parks and Forests Branch, Department of Mines and Resources.

Greater Winnipeg Water District with 92.0 miles, owned by the city of Winnipeg, account for over half. Thus 23,573 miles, or 55 p.c. of the total miles of railway in Canada, are publicly owned; the greater part of this mileage was taken over by the Dominion and Provincial Governments because of the inability of the companies to continue operations.

The Railway Commission, organized in 1904 to supersede the Railway Committee of the Privy Council, has jurisdiction over all freight, passenger, and other railway rates, except certain rates on grain in the Prairie Provinces which are fixed by statute. The Commission also has jurisdiction over safety features of railway operation, the train service, and the abandonment of services and track and other relevant railway activities.



The illustration shows the latest development in locomotive streamlining from the United Kingdom. The "Dominion of Canada" pulls the Coronation Express—the fastest train in the Empire—and was the first of a series of five engines to be completed. On the first passenger run of the locomotive between London and York, the Prime Minister of Canada, the Rt. Hon. W. L. Mackenzie King, was on the train. A characteristic feature is the deep resonant "whoo-ooo-oo" as contrasted with the tiny toots of most English engines. The special whistle fitted to this locomotive is a compliment to Canada and was presented to the L.N.E.R. by the C.P.R.

Courtesy, Canadian Official News Bureau, London, England, and Canadian National Railways.

Australia has a slightly greater railway mileage per capita than Canada, but Canada's average is higher than any other country and is about twice that of the United States. Both freight and passenger traffic, however, are considerably lighter than in the United States, the average ton miles per mile of road being only 43 p.c. and passenger miles per mile of road being 42 p.c. of the respective United States averages.

Freight traffic reached a low point in 1933 but showed increases in the following three years amounting to 75,846,566 tons and 26,414,000,000 ton miles in 1936, as against 69,141,100 tons and 24,235,000,000 ton miles in

1935. Passenger traffic has shown a long, almost continuous decline since 1920, when over 51,000,000 passengers were carried, to a low point of 19,000,000 in 1933. The revival in 1934, 1935, and 1936 has been very slight, the total for 1936 being 20,497,616 passengers.

Revenues declined with the traffic, reaching a low point in 1933, but they have been increasing during the past three years and at \$334,768,557 in 1936 they were above 1932 and were about 6 p.c. below the 1931 revenues.

The railways employed 187,846 persons in 1929 and paid \$290,732,500 in wages, but by 1933 the number of employees was reduced by 35 p.c. and the payroll was reduced by 46 p.c. Increased work and increases in rates of pay have brought the number of employees up to 132,781 for 1936 and the payroll to \$182,638,365.

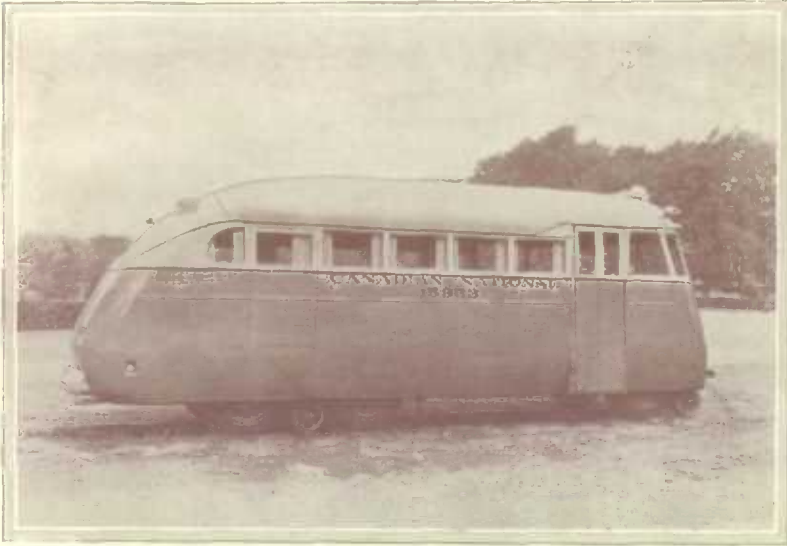
The table below shows gross revenues and the number of cars of revenue freight loaded, month by month, for 1935 to the latest month in 1937 for which data are available and indicates recent recovery.

Railway Statistics, by Months, 1935-37

Month	Railway Gross Operating Revenues			Total Revenue Car Loadings		
	1935	1936	1937	1935	1936	1937
	\$'000	\$'000	\$'000	No. '000	No. '000	No. '000
January.....	20,968	22,234	25,140	182	173	192
February.....	21,601	22,597	24,710	180	180	186
March.....	23,868	25,535	28,691	187	192	214
April.....	24,492	26,050	29,458	185	193	208
May.....	24,537	27,022	29,257	188	190	209
June.....	24,063	26,049	28,253	186	201	214
July.....	26,186	27,301	29,405	195	203	219
August.....	25,552	28,637	29,211	197	222	231
September.....	29,585	33,103	32,882	221	251	262
October.....	32,279	33,840	-	251	263	260
November.....	27,154	29,034	-	214	220	235
December.....	26,656	30,108	-	174	206	-

Electric Railways.—The first street railways in Canada were horse-drawn cars in Montreal and Toronto in 1861 and, with the advent of the electric motor, electric cars were substituted. St. Catharines is credited with the first electric street railway system operated in Canada. This was 7 miles in length and was opened in 1887. Vancouver followed in 1890, Ottawa in 1891, and Toronto and Montreal in 1892. They provide cheap mass transportation in cities and early in the present century extensions to summer resorts and neighbouring cities and towns were operated. The changing habits of the people with the extensive use of automobiles have caused most of the interurban and rural lines to cease operation and, since 1920, 26 railways have ceased to operate and several other systems have curtailed their rural services. Motor buses are providing the public services and private automobiles carry an enormous traffic. Despite the increase in urban population, the electric railway traffic which is largely urban decreased from 1920 to 1925. It increased from 1925 to 1929 and decreased again to 1933. For the past three years a revival has been experienced and the number of passengers increased

from 585,385,094 in 1933 to 614,890,897 in 1936. Over half of these were carried by the Montreal and Toronto systems and, of the 37 railways, 9 in the larger cities carried over 87 p.c. of the total traffic. The total investment for 1936 was \$214,820,798, gross earnings were \$41,391,927, and miles of track operated were 1,800.



Tests of a new type of automotive vehicle which links highway and railway have been made on branch lines in the three regions of the Canadian National System. "Auto-railers" for passengers and for freight are now ready for service. The small flanged wheels are drawn up when the car is operated on the highway. This operation is controlled from the driver's seat and it requires only about one minute's time to change from road to rail or vice versa. It is expected that the cars will cut down operating costs very considerably on light traffic branch lines and at the same time give better service.

Courtesy, Canadian National Railways.

Express Companies.—Express service might be defined as an expedited freight service on passenger trains. Services provided by the Canadian National, Canadian Pacific, and Northern Alberta Railways and by the Railway Express Agency on United States lines in Canada operate over 63,146 miles of railway, steam boat, motor bus, and aircraft routes. In addition to handling freight ranging from small packages to car loads of fish, fruit, race horses, etc., money orders are sold and redeemed. Total revenues for 1936 amounted to \$17,169,315, employees numbered 4,293, and the payroll, including part-time wages, amounted to \$6,962,413.

Roads and Highways.—Since the advent of the motor vehicle, and more especially since 1919 when the Dominion Government made a grant to the provinces of \$20,000,000 for the construction of roads and to relieve unemployment, the mileage of paved highways has increased rapidly each year. For the seven years 1929-35 the average expenditure on rural roads was over \$73,000,000 exclusive of some expenditures on local roads by rural



A Covered Bridge near Causapscau, Gaspé Peninsula, P.Q.—Covered bridges such as the one shown are still fairly common in Quebec. Where snow-fall is heavy and bridges are narrow they reduce considerably the dangers of transportation in winter.

Courtesy, Canadian Government Motion Picture Bureau.

municipalities. These expenditures ranged from \$93,000,000 in 1930 to \$40,500,000 in 1933. The mileage of surfaced roads during these years increased by 16,000 miles, amounting to 96,403 miles in 1935. This includes 84,656 miles of gravel surface and 11,747 miles of cement concrete, bituminous macadam and concrete, water-bound macadam, and oil-treated gravel.

Mileage Open for Traffic and Expenditures on Highways, 1935

Class of Highway	Mileage	Expenditure ¹	\$
Earth—not surfaced.....	214,405	New construction.....	39,073,100
Gravel or crushed stone.....	84,656	Major improvements, widening, etc.....	3,343,814
Oil-treated gravel.....	3,124	Maintenance, minor improve- ments ²	21,123,106
Water-bound macadam.....	1,539	Cleaning, snow clearing, sanding, etc.....	610,310
Bituminous macadam.....	1,433	Administration and general ex- penses.....	2,747,658
Bituminous concrete.....	2,946		
Cement concrete.....	1,987		
Asphalt.....	492		
Other.....	215		
Total.....	410,808	Total.....	66,902,988

¹ Including bridges and ferries.

² Including footpaths and sidewalks \$21,646.

Motor Vehicles.—The number of motor vehicles registered in Canada has increased steadily and rapidly. In 1906 there were only 1,447 vehicles registered; by 1916 they had increased to 128,328, by 1926 to 832,268 and

in 1936 the peak of 1,240,124 was reached. This was an average of one motor vehicle to each 8.9 persons. This extensive use of motor vehicles is revolutionizing civilization in Canada as in other countries. The passenger travel by steam railways has declined rapidly but the total travel has probably increased many times during the past two decades. The consumption of gasoline in 1936 amounted to over 624,000,000 gallons and around 85 p.c. of this was consumed by motor vehicles. The number of persons killed in motor vehicle accidents has increased with the increased use of motor vehicles and in 1936 amounted to 1,313 persons. This was an increase over 1935 of 89 persons, or 7.3 p.c., and over 1933 of 358 persons, or 37.5 p.c., whereas the increase in gasoline consumption by motor vehicles, which measures approximately the miles run, increased 6.5 p.c. over 1935 and 26.4 p.c. over 1933.

The provincial taxes for registrations of motor vehicles, drivers, operation of trucks and buses in public service, etc., amounted to \$26,493,922 in 1936 and the tax from the sale of gasoline was \$34,532,436, making a total of \$61,026,358. Out of this must be deducted the costs of administration before computing revenue available for highway work.

**Number of Motor Vehicles Registered in Canada, by Provinces,
calendar years 1920, 1925, and 1930-36**

Year	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Canada ¹
1920....	1,418	12,450	11,121	41,562	177,561	38,257	60,325	38,015	28,000	408,790
1925....	2,947	22,745	18,863	97,418	342,174	50,884	77,940	54,538	56,427	724,048
1930....	7,376	43,029	34,699	178,548	565,506	78,850	127,193	101,119	98,938	1,232,489
1931....	7,744	43,758	33,627	177,485	562,210	75,210	107,830	94,642	97,932	1,200,668
1932....	6,982	41,013	28,041	165,730	531,597	70,840	91,275	86,781	91,042	1,113,533
1933....	6,940	40,648	26,867	160,012	520,353	68,590	84,944	86,041	88,554	1,083,178
1934....	7,206	41,932	29,094	165,526	542,245	70,430	91,461	89,369	92,021	1,129,532
1935....	8,231	43,952	31,227	170,644	564,076	70,660	94,792	93,870	98,411	1,176,116
1936....	7,632	46,179	33,402	181,628	590,226	74,940	102,270	97,468	106,079	1,240,124

¹ The figures include vehicles in Yukon.

Canals.—Canals were the earliest large transportation works in Canada. One of the first locks was a small one constructed by the Hudson's Bay Co. at Sault Ste. Marie which was destroyed by United States troops in 1814. Another was built at the Lachine rapids in the St. Lawrence above Montreal in 1825, followed by the Welland canal in 1829 to overcome the obstacle of Niagara falls. The Rideau canal (military in primary purpose), the St. Lawrence System and the Chambly canal followed. To-day there are seven canal systems under the Dominion Government, namely: (1) between Fort William and Montreal, (2) from Montreal to the International Boundary near lake Champlain, (3) from Montreal to Ottawa, (4) from Ottawa to Kingston, (5) from Trenton to lake Huron, (6) from the Atlantic ocean to Bras d'Or lakes in Cape Breton, and (7) from Winnipeg on the Red river to lake Winnipeg. The total length of the waterways comprised in these systems is about 1,846 statute miles. Among projected canals the most important are those connected with the deepening of the St. Lawrence waterway.

The Great Lakes and St. Lawrence river form one of the busiest waterways in the world. More traffic passes up and down the Detroit

river than any other waterway and the traffic through the canals at Sault Ste. Marie in 1929 reached a peak of 92,616,898 tons, more than through the Panama and Suez canals combined. The greater part of this traffic is iron ore from lake Superior to United States ports on lake Erie and return cargoes of coal, and grain down-bound destined to St. Lawrence ports, and Buffalo, and small quantities to other ports.

The draught of vessels on the lakes is governed by channels in the Detroit and St. Mary's rivers, limiting it to around 21 feet, and since the opening of the Welland Ship canal, with 25 feet in the stretches between locks (the locks have 30 feet of water above the sills), the large upper lake vessels now pass down as far as Prescott. The St. Lawrence canals have a depth of 14 feet and in periods of low water it is further reduced so that ocean vessels cannot yet sail up into the lakes although some small Norwegian vessels have been engaged in the Great Lakes traffic for several years, bringing over cargoes from European ports. In 1928 the St. Lawrence canal traffic amounted to 8,411,542 tons and in 1936 to 8,288,524 tons. Around one million tons of this 1936 traffic was through-traffic to and from lake Superior, three and one-half million tons was to and from ports above the Welland canal and the remainder was for lake Ontario. St. Lawrence and Ottawa river ports. About a third of the St. Lawrence and Welland canal traffic is grain and other agricultural products.



Oil Tankers off the Wharves of Oil Refineries, Montreal East.

Courtesy, Imperial Oil, Limited.

Shipping.—The tonnage of sea-going and inland international vessels entered and cleared at Canadian ports showed an almost continuous increase up to 1914, and again during the fiscal years ended Mar. 31, 1920 to 1929. The effects of the depression, however, are evident here also but each of the years ended Mar. 31, 1934, 1935, 1936, and 1937 showed an

increase over the preceding year, 1937 recording a new high at 94,586,746 tons. The coasting vessels have also shown increases during the past four years, amounting to 91,421,172 registered net tons in 1937.

The vessels on the Canadian Shipping Registry in 1902 numbered 6,836 of 652,613 tons. Subsequently there was a fairly steady increase in the number of vessels to 8,573 in 1919, followed by a decrease to 7,482 in 1921; since 1921 there has been an increase to 9,373, representing 1,367,071 tons in 1936.



Aids to Navigation.—A typical beacon such as is to be found at many places along Canada's extensive shores and estuaries. The beacon illustrated is located near Rivière-à-la-Martre, Gaspé Peninsula, P.Q.

Courtesy, Canadian Government Motion Picture Bureau.

In the '70's shipbuilding was an important industry in Canada, especially in the Maritime Provinces; the vessels built were mostly wooden sailing vessels. The invention of the iron steamboat greatly affected the industry in Canada, and there was a more or less steady decline in the number of vessels built and registered each year from 1885 to 1914. The War stimulated shipbuilding and there was a temporary activity assisted by the marine program of the Dominion Government. According to the figures published by the Department of Marine, the number of vessels built and registered in Canada in 1936 was 292 of 12,477 tons gross. Of

this number, 6 sailing and 16 motor vessels were built of steel, the remainder being wooden vessels, powered as follows: sail 37, steam 1, and motor 232. The value of production in the shipbuilding industry in 1935, as collected by the Census of Industry, was \$7,291,442, of which only \$380,199 was for vessels built or under construction, while \$6,029,679 was for repairs and custom work and \$881,564 for other products, including aeroplanes, boilers, engines, structural steel, etc.



The Junkers JU 52 of Canadian Airways, largest transport plane in Canada, loading machinery at Schist Lake, for Island Falls. This is typical of commercial air transport in the north.

Courtesy, Canadian Aviation.

Telegraphs.—Canada's first telegraph line was erected in 1846-47 between Toronto, Hamilton, St. Catharines, and Niagara. In 1847, also, the Montreal Telegraph Co. was organized and a line built from Quebec to Toronto. Other lines rapidly followed, to be brought eventually under the single control of the Great Northwestern Telegraph Co., which remained alone in the field until the building of the Canadian Pacific railway and the Canadian Government telegraph lines. In 1933, there were 363,180 miles of telegraph wire in Canada, handling 12,735,186 messages, and the gross revenue was \$10,378,873. In addition, six transoceanic cables have termini in Canada, four on the Atlantic and two on the Pacific. There are also 18 other cables from Atlantic ports to Newfoundland, St. Pierre and Miquelon, Bermuda, and United States and Canadian ports. These handle over a million cablegrams annually. There are also radio stations open for commercial traffic, mostly government owned, but operated in part by the Marconi Wireless Telegraph Co., in addition to stations operated in connection with shipping, or private commercial stations operated by canneries, logging companies, etc. The number of wireless messages handled is increasing and is now over 300,000 a year.

Telephones.—The telephone was invented in Canada, and the first long-distance talk was conducted by Alexander Graham Bell between Brantford and Paris, a distance of eight miles, on Aug. 10, 1876. Tele-

phone development in Canada, however, dates only from 1880. In 1883 there were only 4,400 rental-earning telephones, 44 exchanges and 40 agencies, with 600 miles of long-distance wire. In 1935 the number of telephones was 1,208,815 with a wire mileage of 5,120,610, the investment being \$327,754,026. In the three Prairie Provinces there are well-organized government systems. Next to the railways, the telephone companies are probably the largest annual investors in new plant and construction in the Dominion. Canada has more telephones in proportion to population than any other country except the United States.



Fleet of Planes of the Saint John Flying Club, Saint John, N.B.

Inset: Airport of the Regina Flying Club, Regina, Sask.

Courtesy, Canadian Aviation.

Air Navigation.—The relatively recent invention of the aeroplane is now of economic importance in the transportation of passengers and supplies to remote mining areas, etc. The mileage flown by aircraft increased from 185,000 in 1922 to 7,100,401 in 1936, when 115,834 passengers, 22,947,105 pounds of freight, and 1,161,069 pounds of mail were carried.

The aeroplane has proved a boon to Canada in developing her mining, forest, fishery, water-power and other resources. By shortening the immense distances which characterize the country and by facilitating the rapid exploration of northern areas, the heavier-than-air machine has

found a permanent place in the administrative field. Aerial forest fire patrols are now carried on over large parts of almost every province; fishery patrols by aeroplane protect territorial waters and enforce fishing regulations; and by the use of aeroplanes equipped with special cameras, preliminary surveys, which would have taken years by the older methods, are now rapidly made over large tracts of difficult and little known country.



A Group of Commercial Air Transport Planes tied up at Goldpines, Ont.
Courtesy, Canadian Aviation.

National Radio.—The Canadian Broadcasting Corporation, on Nov. 2, 1936, replaced the Canadian Radio Broadcasting Commission, following repeal by Parliament at the Session of 1936 of the Canadian Radio Broadcasting Act. Modelled along lines of the Canadian Press—a national co-operative news gathering agency—and the British Broadcasting Corporation, the CBC is operated by a General Manager and an Assistant General Manager with head offices in Ottawa. The executive is responsible to a Board of Governors, members of which are unpaid.

The CBC, invested with much wider powers than had been enjoyed by the Canadian Radio Commission, was guided to some extent by the experience the Commission gained from the substantial pioneer work which it had carried out. During its first year of operation, the CBC effected many changes and improvements in the national system as a whole. Two coast-to-coast surveys were undertaken, one to investigate technical problems relating to broadcast coverage and the other to ascertain what improvements were necessary in the character and quality of programs. In February, 1937, the Corporation completed and put into operation near Vancouver a new 5,000-watt regional transmitting station to increase coverage in British Columbia. In April, British Columbia and Prairies Regions of the Corporation were established; the headquarters of the latter

was at Winnipeg and the former at Vancouver, each being provided with voluntary advisory councils representing the provinces covered.

Following various meetings of the Board of Governors and continued investigations by the General Manager and the Assistant General Manager of technical and program problems, it was decided to improve coverage in the provinces of Ontario and Quebec. In June, work was started on the construction of two 50,000-watt transmitting stations, one at Verchères, P.Q., the other at Hornby, Ont. These two powerful plants, in which the



Modern Transmitter Buildings and Antenna Towers recently Brought into Operation by the Canadian Broadcasting Corporation.—The upper pictures show the transmitter building at Hornby, Ont., and the top of the 647-foot antenna tower tapering into the sky. The lower pictures are of the transmitting station at Verchères, P.Q., and the base of the 600-foot vertical radiator tower. This tower weighs about 70 tons and is supported, as shown, by a ball and socket joint resting on a special porcelain insulator; steel guy ropes hold the tower in position. The buildings are constructed of concrete and glass brick and are most modern.

Courtesy, Canadian Broadcasting Corporation.

most modern and scientifically correct equipment are incorporated, were inaugurated towards the end of the year as CBF and CBL. As a result both provinces now are provided with vastly improved coverage and dependable reception. Quebec, moreover, is equipped with French and English outlets, CBF being utilized chiefly for broadcasts in the French language and CBM, the Corporation's original 5,000-watt station at Montreal, being used to provide the smaller English population with broadcasts in the English language. The Corporation is making plans for the

construction of other high-powered stations for regions not already covered. These will be located in the Maritimes and on the Prairies and will be undertaken as soon as finances permit.

Until Oct. 3, 1937, the Corporation had been broadcasting on a six-hour daily regional and national schedule, but, as a result of agreements made with the wire companies from which lines are leased for the transmission of programs, this schedule was increased to twelve hours daily with the prospect of extension to eighteen hours. This increase in broadcast time made it possible for the Corporation to operate on a national hook-up for a considerable part of the day.

Besides technical problems, the Corporation concerned itself with matters of improvement in programs during this, the first year of operations. Results of surveys made were carefully analysed and, as a result, the character and quality of broadcasts presented over the national system were steadily raised. New programs, embracing all types, were specially designed to reflect the distinctive character of Canadian life. One of the most important aims of the Corporation, moreover, was to effect exchange of programs not only with Great Britain and the United States but with other European countries. This exchange has been carried out with unusual success and Canadian listeners are now provided with material originating not only in their own country but in various parts of the world. The standard of announcing has been steadily raised.

Among the most important public service broadcasts undertaken by the Corporation, during the period covered by this report, were the constitutional crisis in November, 1936, the Accession Ceremony in December, 1936, and "Canada Broadcasts Christmas", a special panorama program on Dec. 25, 1936. Early in 1937, the Corporation inaugurated a series of actuality broadcasts entitled "Night Shift", in which a CBC commentator described scenes of Canadian life and activity. CBC's broadcasting activities on Coronation Day, May 12, were considered a triumph and extended for twenty-three hours without interruption. On July 1, the Corporation broadcast an exchange of greetings between President Roosevelt of the United States and His Excellency, Lord Tweedsmuir, Governor General of Canada. In August, 1937, CBC sent its own commentator to New York to broadcast for Canadian and British listeners the battle for the heavyweight championship of the world.

An important new feature of program policy of the Corporation was the presentation of a wide variety of talks and discussions on subjects of national and international interest for which there is in Canada an exceptional demand. Radio talks and discussions of this nature during the past year included the following topics: "Canadian Defence—What We Have to Defend"; "Our Heritage of Freedom"; "The Canadian Constitution"; "Democracy at Work", descriptive accounts of how departmental machinery in Ottawa operates; "Canada Week by Week", a weekly stock-taking and progress account of the general state of trade and commerce throughout the country, prepared and presented by officers of the Dominion Bureau of Statistics, Department of Trade and Commerce; "Canadian Portraits"; "Talks by Indians"; "Sports in Canada"; and a number of others. These talks were supplemented from time to time with special addresses by distinguished speakers visiting Canada.



Moving His Majesty's Mail.—Reading downward, the layout shows: (1) Primary city sorting at Toronto; (2) An aeroplane of the type that will be used on the Trans-Canada Airway for transporting mails; and (3) "The Continental Limited", a C.N.R. train transporting mail through the Rockies, at Mount Robson, B.C.



The Post Office.—The Post Office is under the direction of a special Department of the Dominion Government. The number of post offices has increased from about 3,470 in 1867 to over 12,000 in 1937, the postal revenue in 1936-37 being approximately \$41,181,000, showing a net increase of \$1,978,000 over the previous year. Rural mail delivery dates from 1908. The Post Office Department, in the fiscal year 1936-37, issued money orders to the amount of \$124,000,000 payable in Canada and \$9,000,000 payable in other countries, a combined net increase over the previous year of \$11,000,000. In addition, postal notes to the value of \$12,020,000 were issued in 1936-37. During the War, there was a general increase in postage rates, but these were gradually reduced again between 1926 and 1930. They were increased once more on July 1, 1931, and since that date the letter rate of postage for Canada, Great Britain, the British Empire, France, the United States and all other places in North and South America, has remained at 3 cents for the first ounce and 2 cents for each additional ounce.

In its per capita use of the mails Canada takes a high place. In 1868, the year following Confederation, the average postal expenditure for each member of the population was less than 27 cents, whereas during 1937 each person in Canada expended approximately \$3.70. This is remarkable when it is considered that rates of postage have decreased during this period.

Official air mail service was inaugurated in October, 1927. In the first year of operation, 1927-28, the mileage flown was 9,538 and the weight of mail carried, 38,484 lb.; during 1931-32, 1,229,021 miles were flown and 443,501 lb. of mail were carried; during 1935-36, 852,108 miles and 1,189,982 lb.; while during 1936-37, the figures were 977,864 miles and 1,200,831 lb.

The development of gold mining has brought about the establishment of air mail services to outlying points in Canada, principally to the districts surrounding Red Lake, McKenzie Island, Narrow Lake, Goldpines, Jackson Manion* in Ontario; Herb Lake, Wadhope, Bissett† in Manitoba; Lac la Ronge, Ile à la Crosse‡ in Saskatchewan; and Cameron Bay in the Great Bear Lake section of the Northwest Territories.

In addition to the above, there are many air mail services to remote and otherwise almost inaccessible areas, the most important of which is that between Fort McMurray, Alta., and Aklavik, N.W.T., a distance of approximately 1,500 miles. Others serve Coppermine on Coronation gulf; Fond du Lac on lake Athabaska; Atlin and Telegraph Creek in northern British Columbia; Berens River on lake Winnipeg; Norway House and Cross Lake in Manitoba; also Fort St. John, Fort Nelson, B.C., and White Horse, Yukon, served from Edmonton.

During the winter season Pelee Island is served by air from Leamington, Ont.; remote settlements along the north shore of the gulf of St. Lawrence from Quebec to Harrington Harbour; the Magdalen islands from Charlottetown, P.E.I.

During the season of open navigation air mail service between Montreal and Rimouski is operated to connect with the principal transatlantic steamers.

Although intercity air mail services were seriously curtailed a few years ago, there is at present in operation the service between Moncton and Charlottetown, as well as the international services between Ottawa, Montreal, Albany and New York, between Winnipeg and Pembina, and between Vancouver and Seattle.

Gold production in Canada has undoubtedly been greatly stimulated by the efficiency of the postal service rendered and this, in turn, has assisted materially in the development of first-class air transportation facilities, making the shipment of mining equipment and personnel a relatively simple matter.

The creation of a chain of landing fields across the Maritime Provinces, northern Ontario, and British Columbia may be taken as indicative of the establishment of intercity air mail services on a comprehensive scale in the not too distant future.

* Casummit Lake and Pickle Crow.
‡ Goldfields.

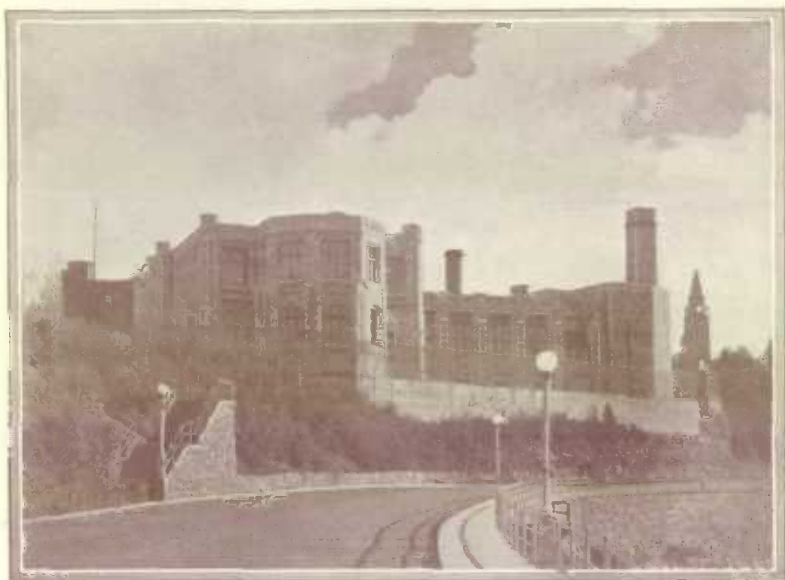
† Beresford Lake, Diana and Gods Lake.

CHAPTER XV

PUBLIC FINANCE

Dominion Finance

Among the powers conferred on the Dominion Government by the British North America Act were: the right to deal with the public debt and property; the right to raise money by any system of taxation (the provinces were limited to direct taxation); and the borrowing of money on the credit of the Dominion. The Department of Finance was established in 1869 to have "supervision, control and direction of all matters relating to financial affairs, public accounts and revenue and expenditure of the Dominion".

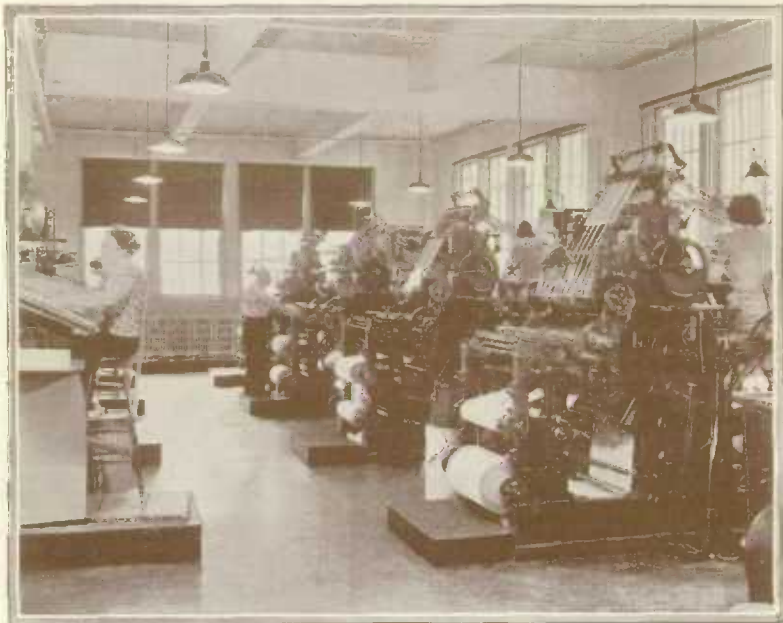


The Royal Canadian Mint, Ottawa.—View of the new refinery wing looking south from driveway. The Peace Tower is seen in the distance to the extreme right.

Courtesy, Canadian Government Motion Picture Bureau.

At Confederation the revenues, notably the customs and excise duties which had previously accrued to the treasuries of the provinces, were transferred to the Dominion and combined into a consolidated revenue fund against which certain specific charges such as cost of collection, interest on public debt, and salary of the Governor General was made. The remainder of the fund was appropriated by Parliament. The public works, cash assets and other property of the provinces, except lands, mines, minerals and royalties, also became Dominion property. In its turn the Dominion became responsible for the pre-existing debts of the provinces.

Since the main source of the revenues of the provinces was now taken over, the Dominion undertook to pay annual subsidies to the provinces for the support of their governments and legislatures. With the growth of the Dominion, the principle of subsidy payments has been extended to the western provinces and from time to time adjustments have been made in the moneys so paid.



Presses in Ottawa Printing Canada's Bonds, Revenue Stamps and Paper Money.

Courtesy, British American Bank Note Company.

At the time of the formation of the Dominion, the revenue collections were comparatively small but obligations shouldered by the central government provided for completion of the Intercolonial railway, and, with the entry of British Columbia, for the construction of the Canadian Pacific railway; early in the present century the National Transcontinental was undertaken. Indeed, the single item of railways and canals accounted for almost the entire increase in the net direct debt of from \$76,000,000 in 1868 to \$336,000,000 in 1914. To a very great extent, therefore, the national debt down to the Great War represented expenditures for productive purposes and tangible assets were acquired by the Dominion therefor. Moreover, this debt was largely held outside Canada. The next decade witnessed the tremendous increase in the direct debt from \$336,000,000 to a maximum of \$2,453,777,000 in 1923—an increase of over two billions of dollars not represented, in the main, by corresponding assets and upon which interest charges were relatively high. One redeeming feature was that the major portion of this debt was held within the country, for the abnormal

prosperity induced by the War provided Canadians with the funds to invest in Government issues and the added desire of the Government to tap the rapidly accumulating resources of the masses was instrumental in instructing the man-in-the-street how to invest his money in bonds. Following 1923 there was a steady fall in the net direct debt to \$2,177,764,000 in 1930, but the depression, with accompanying railway deficits and large necessary expenditures for unemployment relief, has established a new high level of indebtedness of \$3,084,000,000, as at Mar. 31, 1937, or an equivalent of \$277.33 net debt per capita.

The growth of the Dominion revenue, the Dominion expenditure and the net public debt is briefly outlined in the following table:—

Dominion Finances, 1868-1937

NOTE.—Figures of revenue receipts and total expenditure from 1930 to 1937 have been revised to conform with the set-up of the Public Accounts adopted in the fiscal year 1935-36. (See p. 146.)

Fiscal Year	Revenue Receipts	Per Capita Receipts ¹	Total Expenditure	Per Capita Expenditure ²	Net Debt at End of Year	Net Debt per Capita ²
	\$	\$	\$	\$	\$	\$
1868.....	13,687,928	3.90	14,071,689	4.01	75,757,135	21.58
1871.....	19,375,037	5.25	19,293,478	5.23	77,706,513	21.06
1881.....	29,635,298	6.85	33,796,643	7.82	155,395,780	35.93
1891.....	38,579,311	7.98	40,793,208	8.44	237,809,031	49.21
1901.....	52,516,333	9.78	57,982,866	10.80	268,480,004	49.99
1911.....	117,884,325	16.36	122,861,250	17.05	340,042,052	47.18
1921.....	436,292,184	49.65	528,302,513 ¹	60.12	2,340,878,984	266.37
1926.....	382,893,009	40.51	355,186,423 ¹	37.58	2,389,731,099	252.85
1927.....	400,452,480	41.56	358,555,751 ¹	37.21	2,347,834,370	243.65
1928.....	429,642,577	43.69	378,658,440 ¹	38.50	2,296,850,233	233.54
1929.....	460,151,481	45.88	388,805,953 ¹	38.77	2,225,504,705	221.91
1930.....	453,007,129	44.38	405,266,383 ¹	39.70	2,177,763,959	213.34
1931.....	357,720,435	34.48	441,568,413 ¹	42.58	2,261,611,937	217.94
1932.....	334,508,081	31.84	448,742,316 ¹	42.71	2,375,846,172	226.14
1933.....	311,735,286	29.19	532,369,940 ¹	49.84	2,596,480,826	243.09
1934.....	324,660,590	30.00	458,157,905 ¹	42.33	2,729,978,140	252.22
1935.....	361,973,763	33.10	478,106,581 ¹	43.72	2,846,110,958	260.28
1936.....	372,595,996	33.79	532,585,555 ¹	48.29	3,006,100,517	272.59
1937.....	454,153,747	40.84	532,095,432 ¹	47.84	3,083,952,202	277.33

¹ Includes advances to railways and transfers from active to non-active assets.

² Per capita figures for census years are based upon census populations and for intervening years on revised official estimates.

Fiscal Year 1936-37.—The Minister of Finance, the Hon. Chas. A. Dunning, in his Budget Speech of Feb. 25, 1937, outlined the financial position of Canada and estimated the 1937-38 income and expenditure of the Government. It was estimated that the over-all deficit for 1937-38 should not exceed \$35,000,000. The only changes in taxation were minor additions to the schedule of exemptions under the sales tax. Substantial changes, however, were made in the Customs Tariff arising in part from the Trade Agreement with the United States.

The Public Accounts.—In the Public Accounts receipts on ordinary account are classified under two headings: (1) receipts from taxation; and (2) non-tax revenue resulting from public services maintained by the Government. Special receipts, which are usually of a non-recurring character, are included in a third category. Expenditures are now being classified under four headings: (1) ordinary expenditures, which include the ordinary operating costs of government, pensions, subsidies to provinces,

etc. (in the fiscal years ended Mar. 31, 1936 and 1937, certain expenditures previously included in special expenditures were reclassified as ordinary expenditures, and appropriate adjustments for comparative purposes have been made in the tables showing figures for earlier years); (2) capital expenditures on account of railways, canals and public works; (3) special expenditures consisting chiefly of expenditures designed to relieve unemployment and agricultural distress, etc.; and (4) Government-owned enterprises, representing losses of, or non-active advances to, Government-owned enterprises which are operated as separate corporations. Previous to the fiscal year 1935-36, this latter type of expenditure was shown under special expenditures or loans and advances (non-active).

The public revenues increased by \$81,558,000 in 1936-37 as compared with the previous year, substantial increases being registered in the receipts from customs duties, excise duties, income tax, and sales tax.

Total receipts from taxation for the year 1936-37 amounted to \$386,551,000 as compared with \$317,312,000 in the previous year, \$304,444,000 in 1934-35 and \$271,851,000 in 1933-34. Summary figures of receipts and expenditures follow:—

Summary of Total Receipts, fiscal years 1934-37

Item	1933-34	1934-35	1935-36	1936-37
	\$'000	\$'000	\$'000	\$'000
Customs Import Duties.....	66,305	76,562	74,005	83,771
Excise Duties.....	35,494	43,190	44,410	45,957
War Tax Revenue—				
Banks.....	1,336	1,368	1,281	1,210
Insurance companies.....	742	750	761	775
Income tax.....	61,399	66,808	82,710	102,365
Sales tax.....	61,391	72,447	77,552	112,832
Tax on cheques, excise taxes, etc.....	45,184	39,745	35,181	39,641
Tax on gold.....	—	3,574	1,412	—
Totals, Receipts from Taxation.....	271,851	304,444	317,312	386,551
Non-tax Revenues.....	52,220	54,031	54,910	58,478
Total Consolidated Fund Receipts.....	324,071	358,475	372,222	445,029
Special Receipts and Other Credits.....	590	3,499	374	9,125
Grand Totals	324,661	361,974	372,596	454,154

Summary of Total Expenditures, fiscal years 1934-37

Item	1933-34	1934-35	1935-36	1936-37
	\$'000	\$'000	\$'000	\$'000
Ordinary Expenditure.....	351,771	359,701	372,539	387,112
Capital Expenditure.....	6,580	7,107	6,544	3,492
Special Expenditure ¹	35,899	60,660	102,047	78,004
Government-owned Enterprises ²	61,051	50,137	50,941	44,218
Other Charges.....	2,857	502	515	19,179
Grand Totals	458,158	478,107	532,586	532,005

¹ Includes \$35,899,000 for unemployment relief in 1933-34, \$51,987,000 in 1934-35, \$49,836,000 in 1935-36, and \$69,253,000 grants-in-aid to provinces and relief projects and \$8,751,000 special drought area relief in 1936-37.

² Includes net income deficit of the Canadian National Railways (including Eastern Lines deficit) incurred in the calendar years 1933 to 1936 as follows: \$58,955,000, \$48,408,000, \$47,421,000, and \$43,303,000, taken into the accounts of the Dominion in the fiscal year after the close of the calendar year.

It will be seen from the above tables that, for the fiscal year ended Mar. 31, 1937, total receipts of \$454,154,000 compared with total expenditures of \$532,005,000, including net income deficit of the Canadian National Railways amounting to \$43,303,000, \$69,253,000 for grants and relief, and \$8,751,000 special drought area relief. Thus the total deficit for that year was \$77,851,000. This is substantially less than the deficit of \$159,990,000 shown in the preceding year and substantially less than the deficits for 1934-35 and 1933-34 which amounted to \$116,132,000 and \$133,497,000, respectively.

Tariff Changes in 1937.—The most numerous and most important tariff changes of 1937 resulted from the revised Trade Agreement between Canada and the United Kingdom, signed at Ottawa on February 23rd. Canada's commitments under the Agreement were implemented by amendments to the Customs Tariff introduced during the course of the regular Budget Speech on February 25th.

The Agreement resulted in reduction of the British preferential rate of duty under 179 tariff items. The concessions included reduced rates, or free entry, on textiles, including those of wool, cotton, silk and artificial silk, as well as on clothing and wearing apparel, knitted goods of all kinds, blankets and carpets; on glass tableware and cut glass; on various primary forms of iron and steel, and on a wide range of processed steel goods, including machinery, vacuum cleaners and sewing machines, enamelled ware and electrical goods; on leather and leather products; on boots and shoes; on numerous paper products; and on paints and varnishes, earthenware, canned fish, soaps, brushes and silverware.

The 1937 Budget Speech also introduced a considerable number of tariff amendments not directly related to the Trade Agreement. Certain of these were merely technical in character, but others provided for reductions under all tariffs on fumigants, plastic materials, seamless well-casing, and other articles, and for reductions of the Intermediate or both Intermediate and General rates on a number of products of which plate glass and cotton clothing were among the most important.

There were no increases in duty under the British Preferential Tariff. The Intermediate rate on furniture was raised from 30 p.c. to 37½ p.c., in each case less a discount of 10 p.c. to most-favoured-nations, as the result of a Tariff Board Report received while the House was in committee. Other increases of the Intermediate or General Tariff were few in number and of minor importance.

As a result of commercial arrangements with other countries, Canada, during 1937, extended her Intermediate Tariff to the Panama Canal Zone and accorded Brazil most-favoured-nation treatment. All non-self-governing British colonies and specified mandated territories were given most-favoured-nation treatment, and the list of countries entitled to the British Preferential Tariff was expanded by the addition of a number of non-self-governing colonies not already receiving its benefits. And, finally, the Trade Agreements with Australia and New Zealand were revised and extended. Canada granted some additional concessions to Australia and New Zealand, of which probably the most important was a reduction of the rate on lamb and mutton from 3 cents per lb. to ½ cent per lb. The reduced rates went into effect on Oct. 1, 1937.

Provincial and Municipal Finance

Provincial Finance

Provincial Governments in Canada are in the position, under Section 118 of the British North America Act, 1867 (30 and 31 Vict., c. 3), and the British North America Act, 1907 (7 Edw. VII, c. 11), of having a considerable assured income in subsidies from the Dominion Treasury. In addition, through the ownership of their lands, minerals and other natural resources, the provinces are in a position to raise considerable revenues through land sales, sales of timber, mining royalties, leases of water powers, etc. Further, under Section 92 of the British North America Act, provincial legislatures are given authority to impose direct taxation within the province for provincial purposes and to borrow money on the sole credit of the province.

Among the chief methods of taxation to be employed has been the taxation of corporations and estates. Prominent among the objects of increased expenditure are education, public buildings, public works (especially roads and highways), labour protection, charities, hospitals, and places of correction.

The Growth of Provincial Taxation.—Whereas in earlier years the Dominion subsidies, together with the revenues arising out of the natural resources of the provinces and from fees for specific services rendered to the citizens, nearly sufficed to cover the whole expense of government and rendered a resort to taxation for provincial purposes practically unnecessary in most of the provinces, the great increase in the functions of government since the commencement of the present century has put an end to this state of affairs. Ordinary provincial taxation (covering taxation of corporations, lands, succession duties and amusements) increased from \$12,575,159 in 1916 to \$42,593,417 in 1929 and to \$51,621,242 in 1930, but there was a reduction to \$48,738,796 in 1931, \$44,313,514 in 1932, \$48,383,044 in 1933 and \$46,741,293 in 1934. In addition to this ordinary taxation, provincial revenues have been augmented by the control of the liquor traffic, the issuance of licences and permits for motor vehicles, and by the imposition of taxes on gasoline sales. In recent years the revenues collected from these sources alone have far exceeded those from ordinary taxation, the figures being: Liquor traffic control, 1929, \$27,599,687; 1930, \$33,248,056; 1931, \$32,128,693; 1932, \$24,832,427; 1933, \$16,160,980; 1934, \$12,814,120. Motor vehicles (including licences and permits), 1929, \$21,735,827; 1930, \$20,321,307; 1931, \$19,952,575; 1932, \$20,164,291; 1933, \$20,050,667; 1934, \$20,840,513. Gasoline tax, 1929, \$17,237,017; 1930, \$20,956,590; 1931, \$23,859,067; 1932, \$24,987,273; 1933, \$25,931,480; 1934, \$26,812,275. Returns for 1935 are not available at the time of going to press.

The increasing use of automobiles for both commercial purposes and pleasure is clearly demonstrated by the revenue figures for motor vehicles and gasoline taxes shown above. The fact that the gasoline tax revenue increased in 1931 whereas the figures for motor vehicle licences and permits showed a decline from the previous year, is not altogether attributable to a greater average mileage run per car but largely to an increased use of the gasoline tax as a source of provincial revenue. The rate of gasoline

tax has been increased repeatedly in all provinces since its inception and many of these increases were made in the period of the depression from 1930 to 1934.

Bonded Indebtedness of the Provinces.—The bonded indebtedness of the provinces amounts to about 77.5 p.c. of their total direct liabilities. In recent years, the aggregate bonded indebtedness of the provinces has steadily increased. The total for the nine provinces was \$704,225,134 in 1925, \$708,677,426 in 1926, \$742,388,684 in 1927, \$769,260,373 in 1928, \$817,940,202 in 1929, \$919,142,905 in 1930, \$1,016,647,165 in 1931, \$1,148,323,084 in 1932, \$1,224,372,822 in 1933, \$1,329,684,651 in 1934, \$1,373,321,604 in 1935, and \$1,426,293,679 in 1936. This bonded indebtedness for 1936 was divided by provinces as follows: P.E.I., \$6,029,000; N.S., \$86,974,113; N.B., \$74,049,920; Que., \$164,747,607; Ont., \$602,027,288; Man., \$95,480,881; Sask., \$124,446,374; Alta., \$128,140,260; B.C., \$144,398,236. The development of the principle of public ownership is largely responsible for the high bonded indebtedness in certain provinces, particularly in Ontario where the hydro-electric system and the provincially-owned Temiskaming and Northern Ontario Railway largely account for the bonded indebtedness of the province. The larger of these public utilities, the hydro-electric system, is, however, meeting from its revenues the interest on the indebtedness incurred in its construction.

The expansion in the ordinary revenues and expenditures and the increase in direct liabilities of all Provincial Governments are shown for certain years 1873-1936 and for individual provinces for 1936 below:—

Aggregate Provincial Revenues and Expenditures

Fiscal Year	Ordinary Revenue	Ordinary Expenditure	Direct Liabilities ¹
	\$	\$	\$
1873	6,960,922	6,868,884	"
1881	7,858,698	8,119,701	"
1891	10,693,815	11,628,353	"
1901	14,074,991	14,146,059	"
1911	40,706,948	38,144,511	138,662,442
1921	102,030,458	102,569,515	565,470,552
1926	146,450,904	144,183,178	893,499,812
1929	183,598,024	177,542,192	1,034,071,264
1930	188,154,910	184,804,203	1,140,953,696
1933	184,868,471	200,527,219	1,440,317,863 ¹
1934	175,867,349	229,483,726	1,558,601,636 ¹
1935 ²	139,054,717	159,513,105	1,717,370,436
1936 ²	196,994,377	212,734,955	1,839,322,142
Prince Edward Island	1,705,493	1,730,147	7,705,459
Nova Scotia	11,104,797	10,953,079	94,901,163
New Brunswick	6,845,983	7,270,953	78,284,224
Quebec	38,066,299	40,589,475	238,510,609
Ontario	65,726,985	79,069,690	697,472,847
Manitoba	14,560,573	14,536,598	136,542,126
Saskatchewan	16,124,659	17,054,663	214,099,853
Alberta	16,636,652	18,287,450	174,925,719
British Columbia	25,622,906	23,242,902	199,880,142

¹ In addition, there were trust account liabilities amounting to \$41,946,386 in 1933 and \$47,920,235 in 1934. There were corresponding offsetting trust account assets amounting to \$37,684,406 in 1933 and \$47,920,235 in 1934.

² Figures of ordinary revenue and expenditure for 1935 and 1936 are subject to revision.

³ Not available.

⁴ Sinking funds are not deducted.

Municipal Finance

Under the provisions of the British North America Act, the municipalities are the creations of the Provincial Governments. Their organization and their powers differ in different provinces, but almost everywhere they have very considerable powers of local self-government. If we include the local government districts of Saskatchewan and Alberta, there are 4,299 municipal governments in Canada. These 4,299 municipal governments have together probably 20,000 members described as mayors, reeves, controllers, councillors, etc., the experience training them for the wider duties of public life in the Dominion and in the provinces. Certain of the larger municipalities, indeed, are larger spenders of public money than are some of the provinces.

The cost of municipal government, like the cost of provincial and Dominion government, has greatly increased since the pre-war period, principally due to the increased services demanded from municipal bodies. Among such public services which play a large part in municipal expenditures may be mentioned education, roads and highways, sanitation, fire and police protection, and charities and social relief. The cost of these services is almost entirely met by municipal governments through local taxation. In the province of Prince Edward Island there is no municipal system outside of the city of Charlottetown and seven small incorporated towns. With regard to New Brunswick, this province has not published statistics which show the municipal revenues throughout the province. The following table shows the tax imposition and the tax receipts of municipalities in each of the other provinces for the earliest available year as compared with similar returns for the year 1935.

Municipal Tax Imposition and Receipts by Provinces

Province	Taxes Imposed			Tax Receipts		
	Earliest Available Year		1935	Earliest Available Year		1935
	Year	Amount		Year	Amount	
		\$	\$		\$	\$
Nova Scotia.....	1	1	1	1918	3,462,587	7,073,053
Quebec.....	1	1	1	1915	33,288,115	59,729,973 ¹
Ontario.....	1913	34,231,214	117,016,375	1924	94,526,271	122,108,912
Manitoba.....	1913	7,730,122	18,012,135	1932	17,290,889	16,622,464
Saskatchewan.....	1913	12,399,657	21,012,062	1921	22,278,621	16,769,993
Alberta.....	1914	9,791,846	13,286,661	1924	10,706,183	10,900,409
British Columbia.....	1918	11,688,125	18,129,920	1917	9,382,099	17,185,917

¹ Statistics not available.

² Revenue for municipalities plus receipts for school corporations for 1934. Latest available information.

Municipal System of Taxation.—Throughout the Dominion, the chief basis of municipal tax revenue is the real estate within the limits of the municipalities; though in certain provinces personal property, income and business carried on are also taxed. General taxes are normally assessed at the rate of so many mills on the dollar of the assessed valuations, although the basis of assessment varies widely in different provinces and in municipalities within the same province. In some provinces Equalization Boards have placed a more equitable valuation on lands as among the various rural municipalities.

The period of depression was responsible for a very considerable delinquency in tax payments, while the burden of unemployment relief since 1930, which has been carried by the municipalities with help from the Provincial and Dominion Governments, has been increasingly heavy. The resulting heavy taxation upon real estate has tended to curtail new building for commercial and industrial as well as residential purposes and is responsible in no small measure for the slow recovery of the construction industry (p. 107) in spite of the encouragement of residential construction by the Dominion Housing Act (p. 103).

The Parliament Buildings, Ottawa, viewed from in front of the East Block. The East Block is the home of the Department of Finance.



Bonded Indebtedness of Municipalities.—

Like other Canadian governing bodies, the municipalities of the greater part of Canada borrowed rather too freely during the years between 1917 and 1930. The following table shows the total municipal bonded debt outstanding in each province for the years 1919 and 1935. It also shows the amount of sinking funds held by municipal governments in each province in 1935 offsetting the bonded debt of that year.

Municipal Bonded Debt for 1919 and 1935 and Sinking Funds for 1935, by Provinces

Province	Total Gross Bonded Indebtedness of Municipalities		Sinking Funds Offsetting Gross Bonded Indebtedness
	1919	1935	1935
	\$	\$	\$
Prince Edward Island.....	970,100	2,479,550	522,843
Nova Scotia.....	17,863,881	33,866,913	12,367,142
New Brunswick.....	11,188,467	27,538,898	7,142,948
Quebec.....	199,705,568	574,883,119	76,652,767 ¹
Ontario.....	243,226,877	461,653,182	56,833,480
Manitoba.....	55,562,788	95,357,149	42,435,152
Saskatchewan.....	39,585,388	55,519,672	16,522,383
Alberta.....	66,870,464	67,251,233	23,022,739
British Columbia.....	94,741,615	127,370,560	32,209,466
Totals.....	729,715,148	1,446,129,276	267,708,920

¹ Including \$14,164,589 reserve for depreciation.

CHAPTER XVI

CURRENCY AND BANKING—INSURANCE—LOAN AND TRUST COMPANIES—MISCELLANEOUS

Currency



Multiple Pantograph Machine with nine diamond points all ruling and reducing at the same time from the master matrix. This machine is used for engraving title and denominational tints on bank notes, cheques and securities.

Courtesy, Canadian Bank Note Company.

Early trade in Canada was carried on largely by barter. Beads, blankets, beaver and other furs, tobacco and wheat have been, at various times, used for currency. Further, under the French *régime*, playing cards stamped with a value and redeemable yearly on the receipt of bills of exchange on Paris, came into circulation. In the early years of the British period, the Spanish dollar and the English shilling were the chief mediums of exchange, together with such paper money as the army bills issued by the Government for supplies during the War of 1812. In 1853 a measure was passed providing for the adoption of decimal currency with a dollar equivalent to the United States dollar, and from

Jan. 1, 1858, the accounts of the Province of Canada were kept in terms of dollars. The use of the dollar as a monetary unit was extended throughout the new Dominion by the Uniform Currency Act of 1871.

The Canadian gold dollar weighs 25.8 grains, nine-tenths fine gold, and thus contains 23.22 grains of gold. Only very limited issues of gold coin have ever been made. British and United States gold coin are legal tender in Canada. Subsidiary silver coin is legal tender up to \$10; the 5-cent piece (now made of nickel) is legal tender up to \$5; and the 1-cent bronze coin, up to 25 cents. Since 1931, the Government has permitted the

export of gold only under licences issued by the Department of Finance, thus conserving the gold resources of the nation for meeting external obligations, and Canadian mines now dispose of their gold through the Royal Canadian Mint according to definite conditions of purchase.

Bank Notes.—Canadians early became accustomed to the free circulation of paper money, either in the form of notes of the chartered banks or of notes issued by the Government.

Under the Bank Act the chartered banks may issue notes of the denominations of \$5 and multiples thereof to the amount of their paid-up capital. This amount is to be reduced by 5 p.c. per annum for a period of five years from Jan. 1, 1936, and by 10 p.c. per annum for a period of five years from Jan. 1, 1941. In case of insolvency, bank notes are a first lien on assets and for over fifty-five years no note holder has lost a dollar.

In addition to notes of the chartered banks, there are also now in circulation notes of the Bank of Canada. These notes may be issued to any amount as long as the Bank maintains a reserve in gold equal to at least 25 p.c. of its note and deposit liabilities. Prior to the establishment of the Bank of Canada, the Government issued notes under certain statutory authorities, backed in part by gold and securities. The Dominion's liability in respect of these notes was assumed by the Bank of Canada on Mar. 11, 1935. The following statement shows the average amount of bank notes and Dominion (or Bank of Canada) notes outstanding in various years.

Notes Outstanding, 1900-37¹

(Yearly Averages)

Year	Dominion or Bank of Canada Notes Outstanding	Bank Notes Outstanding	Year	Dominion or Bank of Canada Notes Outstanding	Bank Notes Outstanding
	\$	\$		\$	\$
1900.....	26,550,465	46,574,780	1932.....	165,878,510	132,165,942
1910.....	89,628,569	82,120,303	1933.....	179,217,446	130,362,488
1920.....	305,806,288	288,800,379	1934.....	190,261,981	135,537,793
1929.....	204,381,409	178,291,030	1935.....	127,335,340 ²	125,644,102
1930.....	174,616,019	159,341,085	1936.....	105,275,223 ²	119,507,306
1931.....	153,079,362	141,969,350	1937 ²	137,099,170 ²	111,464,553 ²

¹ Since Mar. 11, 1935, the figures used represent Bank of Canada notes.
ten months.

² Average for

Banking

The Canadian banking system is a product of evolution, having grown up gradually with changes made from time to time as experience directed. Its most distinctive feature, the branch bank system, is well adapted to the needs of a country of wide area and scattered population.

Banking in Canada began to develop some of the features of a central bank system soon after Confederation. These in chronological order have been:—

(1) *Central Note Issue*, permanently established with the issue of Dominion notes under legislation of 1868.

(2) *The Canadian Bankers' Association*, established in 1900 to effect greater co-operation in the issue of notes, in credit control, and in various other ways.

(3) *Central Gold Reserves*, established in 1913.

(4) *Re-discount Facilities*, made a permanent feature of the system in 1923, provided the banks with a means of increasing their legal tender cash reserves at will.

(5) *The Bank of Canada*, established in 1935.

The Bank of Canada.—Established as the central bank of the Dominion and commencing business on Mar. 11, 1935, the Bank of Canada assumed the liability of the Dominion notes then in circulation in return for gold and silver held by the Government as security for Dominion notes and 3 p.c. five-year Dominion of Canada bonds. The chartered banks also surrendered to the Bank of Canada the gold held by them in Canada at the currency value (\$20·67 per fine ounce). An allowance was made to the banks in respect of 40 p.c. of the gold held by them, which proportion of their gold was considered as being held against foreign liabilities. For this gold they received the market price.



Architect's Drawing of the new Bank of Canada now being built at Ottawa.
(See also p. 103.)

Courtesy, Bank of Canada.

The Bank is empowered to buy and sell securities in the open market; to discount securities and commercial bills; to fix minimum rates at which it will discount; to buy and sell bullion and foreign exchange. It is the main issuer of paper money in Canada and will become increasingly so as the chartered banks gradually reduce their issues to 25 p.c. of their

paid-up capital (see p. 153). The Bank may issue notes to any amount so long as it maintains a reserve of gold coin and bullion equal to not less than 25 p.c. of its note and deposit liability in Canada. The reserve in addition to the gold coin and bullion may include silver bullion, foreign exchange, securities of the United Kingdom and the United States having a maturity not exceeding three months and bills of exchange having a maturity not exceeding ninety days, payable in the United Kingdom, the United States or a gold standard country.

The chartered banks are required to maintain a reserve by way of deposit with the Bank and Bank of Canada notes of not less than 5 p.c. of their deposit liabilities in Canada.

THE ROYAL CANADIAN MINT



Cutting Blanks and Striking Coin at the Royal Canadian Mint.—*Upper Picture:* Rolling metal bars into fillets. *To left:* Blank cutting machine showing fillet passing through. *Lower Picture:* Coining presses. Blanks are struck at the rate of 100 per minute, dies being interchangeable.

Courtesy, Royal Canadian Mint and Canadian Government Motion Picture Bureau.

The Bank acts as the fiscal agent of the Dominion of Canada and may, by agreement, act as banker or fiscal agent for any province. The Bank does not accept deposits from individuals and thus does not compete with the chartered banks in the commercial banking field.

The following statement gives the main items of assets and liabilities of the Bank of Canada at Oct. 31, 1936, and Oct. 31, 1937.

**STATEMENT OF ASSETS AND LIABILITIES OF THE BANK OF CANADA
AT OCT. 31, 1936, AND OCT. 31, 1937**

	1936	1937
Notes in circulation.....	\$129,883,439	160,356,048
Dominion Government deposits.....	22,160,789	31,550,913
Chartered banks' deposits.....	182,876,698	198,572,328
Gold coin and bullion.....	179,368,973	179,578,886
Investments.....	153,419,082	191,471,672
Total assets and liabilities.....	348,237,739	405,029,452

Commercial Banking.—The number of chartered banks, which was 36 in 1881 and 34 in 1901, decreased to 25 in 1913 and is now only 10. This lessening of the number of banks has been accompanied by a great increase in the number of branches. In 1868 there were only 123 branch banks in Canada. By 1902 the number, including sub-agencies, had grown to 747, by 1916 to 3,198 and by 1929 to 4,069, but by the beginning of 1937 the number had decreased to 3,398. From 1867 to October, 1937, the total assets have grown from \$78,000,000 to \$3,299,000,000.

Of late years the banks of Canada have extended their business outside of the country itself and at the beginning of 1936 had among them 147 branches, not including sub-agencies, in foreign countries, mainly in New foundland, the West Indies, Central and South America and in the great centres of international finance, London, Paris, and New York.

The number of branches, assets, liabilities, loans and deposits of the Canadian chartered banks as at Oct. 31, 1937, by banks, together with totals (yearly averages) for certain years are shown in the following table.

**Statistics of Individual Chartered Banks as at Oct. 31, 1937,
with Totals for Certain Years, 1900-36**

Bank	Branches in Canada and Abroad ¹	Total Assets	Liabilities to Shareholders	Liabilities to the Public	Total Liabilities	Loans and Discounts	Deposits by the Public
	No.	\$ '000,000	\$ '000,000	\$ '000,000	\$ '000,000	\$ '000,000	\$ '000,000
Bank of Montreal.....	496	830	75	753	828	232	706
Bank of Nova Scotia.....	303	297	36	260	296	117	240
Bank of Toronto.....	172	137	15	120	135	49	111
Banque Provinciale du Canada.....	135	56	5	51	56	19	47
Canadian Bank of Commerce.....	692	649	50	595	645	233	538
Royal Bank of Canada.....	719	867	55	809	863	352	741
Dominion Bank.....	131	135	14	121	135	63	108
Banque Canadienne Nationale.....	224	149	12	136	148	69	127
Imperial Bank of Canada.....	187	160	15	144	159	74	132
Barclay's Bank (Canada) ²	2	19	2	17	19	2	9
Totals, Oct. 1937.....	—	3,299	279	3,065	3,284	1,210	2,759
Totals, 1936³.....	2,961	3,145	278	2,856	3,134	1,141	2,615
Totals, 1935⁴.....	2,978	2,957	278	2,668	2,946	1,276	2,427
Totals, 1930⁴.....	3,598	3,237	305	2,910	3,215	2,065	2,517
Totals, 1920⁴.....	4,876	3,064	252	2,784	3,036	1,935	2,438
Totals, 1910⁴.....	2,621¹	1,211	179	1,019	1,198	870	910
Totals, 1900⁴.....	641	460	98	356	454	279	303

¹ As at Dec. 31, 1936. Does not include sub-agencies.
operations in Canada in September, 1929.

² 1911.

³ Barclay's Bank commenced operations in Canada in September, 1929.
⁴ Totals are averages from the respective monthly statements, except in the case of the numbers of branches in Canada and abroad which are as at Dec. 31.

Bank Clearings and Bank Debits.—Through the clearing houses, inter-bank transactions have been recorded since 1889; they form a valuable indication of the trend of business. They, however, do not tell the whole

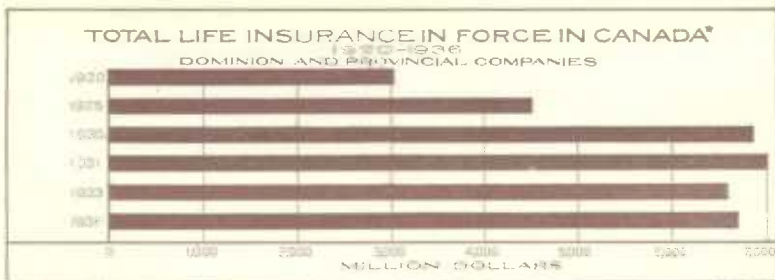
story, since numerous transactions between persons who carry their accounts in the same bank are not recorded in bank clearings; also, every amalgamation of banks lessens, in so far, the volume of clearings. Again, head office clearings have been effected through the Bank of Canada since Mar. 11, 1935, and this has tended to increase exchanges compared with previous years. For these reasons, a record of cheques debited to accounts at all branches at clearing-house centres is considered to possess greater reliability as a barometer of economic conditions and such a record was instituted in 1924; between that date and 1929 the grand total of bank debits for Canada increased from \$27,157,000,000 to \$46,670,000,000. Since 1929 there was a steady decline to the 1932 levels of \$25,844,000,000, but since then the movement was generally upward, being \$35,928,000,000 in 1936.

**Bank Debits at the Clearing-House Centres, by Economic Areas,
calendar years 1932-36**

Economic Area	1932	1933	1934	1935	1936
	\$	\$	\$	\$	\$
Maritime Provinces...	519,170,814	481,013,532	534,251,057	574,052,860	630,402,014
Quebec.....	7,766,200,564	8,567,070,260	9,449,709,866	8,977,529,023	10,938,647,731
Ontario.....	11,258,872,279	13,027,437,905	14,919,504,095	13,876,626,476	15,778,679,837
Prairie Provinces.....	4,797,205,735	6,414,353,624	6,337,239,720	6,445,395,764	6,505,518,677
British Columbia.....	1,502,838,901	1,491,590,173	1,625,968,184	1,672,462,218	2,075,358,484
Totals.....	25,844,288,293	29,981,465,494	32,866,672,922	31,546,066,341	35,928,606,743

Insurance

Life Insurance.—The life insurance business was introduced into Canada by companies from the British Isles and the United States about the middle of the nineteenth century. By 1875 there were at least 26 companies, and possibly several more, competing for the available business in Canada, as against 42 active companies registered by the Dominion and a few provincial companies in 1936. Of the 42 companies registered by the Dominion, 28 were Canadian, 6 British and 8 foreign.



* In 1936, 95.6 per cent of life insurance in force was underwritten by Dominion Life Companies, 2.5 per cent by Dominion Fraternal Companies, 0.8 per cent by Provincial Life Companies and 1.1 per cent by Provincial Fraternal Companies.

The development of life insurance in Canada, as in other English-speaking countries at least, has been marked by an increased service to the individual policyholder. The benefits which may now be obtained under a life insurance policy are calculated to meet the needs of the policy-

holder and of his dependants, whether in event of old age or in event of death or of disability. In 1919 there was introduced what is known as "group insurance", a plan whereby a group of persons, usually employees, are insured by their employer, for a uniform amount or a varying amount determined by a formula, under one policy, generally on the term plan, the employer paying the premium or a substantial part thereof. Each employee usually has the right to obtain an individual policy at ordinary normal rates, without medical examination, on termination of employment.

As a result of the adaptation of life insurance policies to the needs of the public, and of the growing wealth of the community, the increase in the amount of life insurance in force has been remarkable. In 1869 the total life insurance in force in Canada, by Dominion companies, was only \$35,680,000 as compared with approximately \$6,407,000,000 at the end of 1936. This latter figure was equal to \$581 per head of population. In addition there was \$169,000,000 of fraternal insurance in force by Dominion licensees and \$128,000,000 of insurance in force by provincial licensees. Thus the total life insurance in force in the Dominion at the end of 1936 was approximately \$6,704,000,000. The premium income from Canadian business of all Dominion registered companies (not including fraternal benefit societies) increased from \$90,000,000 in 1920 to \$221,000,000 in 1930 but decreased to \$200,000,000 in 1935, increasing to \$200,500,000 in 1936.

The following table shows the sales of life insurance month by month in recent years. The statistics are not complete but represent approximately 85 p.c. of the total business transacted in Canada.

Sales of Life Insurance in Canada, by Months, 1935-37

NOTE.—The figures in this table are those published by the Hartford Research Bureau except that totals for Newfoundland, included therein, have been deducted.

Month	1935	1936	1937	Month	1935	1936	1937
	\$'000	\$'000	\$'000		\$'000	\$'000	\$'000
January.....	31,669	33,166	27,492	July.....	30,551	31,148	32,043
February.....	27,265	28,673	30,402	August.....	25,109	23,260	27,891
March.....	30,408	30,404	31,741	September.....	25,340	25,913	27,214
April.....	27,691	28,601	32,577	October.....	28,615	29,150	33,365
May.....	27,042	28,189	31,559	November.....	31,824	36,437	-
June.....	29,956	30,903	37,316	December.....	33,300	33,883	-

Fire Insurance.—Fire insurance in Canada began with the establishment, by British fire insurance companies, of agencies usually situated in the seaports and operated by local merchants. The oldest existing agency of a British company is that of the Phoenix Fire Office of London, now the Phoenix Assurance Co., Ltd., which opened in Montreal in 1804.

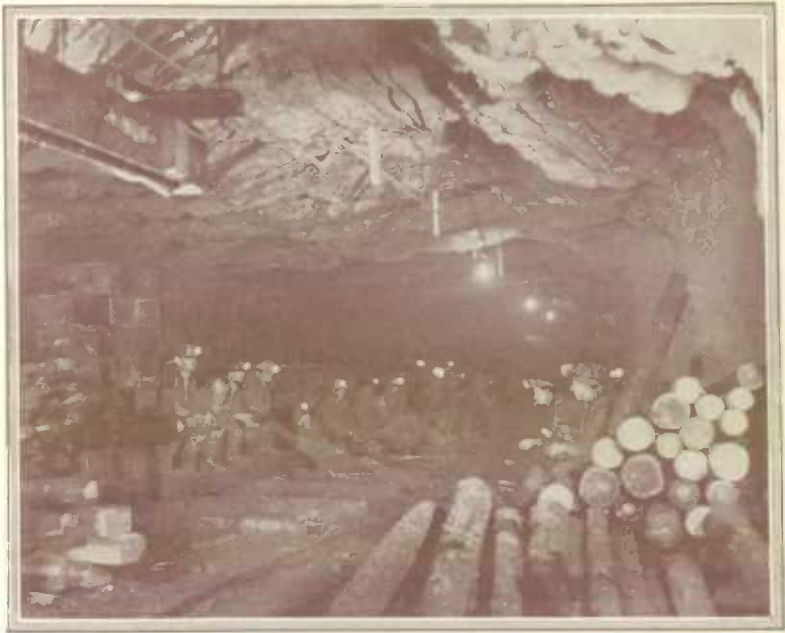
The Halifax Fire Insurance Co. is the first purely Canadian company of which any record is obtainable. Founded in 1809 as the Nova Scotia Fire Association, it was chartered in 1819 and operated in the province of Nova Scotia until 1919, when it was granted a Dominion licence.

The report of the Superintendent of Insurance for the year ended Dec. 31, 1936, shows that at that date there were 269 fire insurance companies doing business in Canada under Dominion licences, of which 50 were Canadian, 68 were British and 151 were foreign companies, whereas in

CHAPTER XVII

LABOUR

Dominion Department of Labour.—The steady growth of industry and labour organization in Canada has been accompanied on an increasing scale by governmental consideration of labour problems. The Dominion Department of Labour was established in 1900. Its duties are to aid in the prevention and settlement of labour disputes, to collect and disseminate information relative to labour conditions, to administer the Government's fair wages policy in regard to wages and hours of labour on government contracts, and, in general, to deal with problems involving the interests of workers. Under the first-mentioned of these functions, the Industrial



Miners having Lunch in the Main Level of an Ontario Gold Mine.

Courtesy, Canadian Government Motion Picture Bureau.

Disputes Investigation Act, enacted in 1907 to promote the settlement of disputes in mines and certain public utility industries, has attracted favourable comment throughout the world. Up to Mar. 31, 1937, 557 threatened disputes had been referred to Boards of Conciliation and Investigation established under its provisions and open breaks had been averted in all but 39 cases. Under a separate statute, entitled the Conciliation and Labour Act, conciliation officers are available to assist in the settlement of labour disputes arising from time to time, and their services have been widely utilized to this end. The administration of the fair wages policy in regard to government building and construction works is carried out

\$133,000,000 remained for railway issues. As a result of the Dominion Government refunding operations and the increase in railway and corporation issues, the total of bond sales during 1936 was about \$265,568,411 over that of 1935 and \$644,113,483 over 1934.

Canadian investors purchased over 93 p.c. of the total offerings, while in 1935 the corresponding proportion was 84 p.c. The London market handled 0.08 p.c. of the 1936 offerings as compared with 6.71 for New York.

Sales of Canadian Bonds, 1928-36

Year	Class of Bonds		Distribution of Sales			Total
	Government and Municipal	Railway and Corporation	Sold in Canada	Sold in the United States	Sold in the United Kingdom	
	\$	\$	\$	\$	\$	\$
1928.....	120,113,088	333,479,000	278,080,088	159,512,000	16,000,000	453,592,088
1929.....	218,628,309	442,530,600	378,395,009	263,654,000	10,109,000	661,158,909
1930.....	109,652,063	357,573,000	368,868,063	393,632,000	4,745,000	767,245,063
1931.....	1,069,638,571	181,182,000	1,090,800,571	155,920,000	4,100,000	1,250,820,571
1932.....	450,067,632	23,050,000	377,752,632	81,015,000	14,350,000	473,117,632
1933.....	504,171,513	5,385,000	434,556,513	60,000,000	75,000,000	569,556,513
1934.....	564,558,132	73,402,696	529,630,828	50,000,000	58,330,000	637,960,828
1935.....	907,500,200	109,005,700	853,940,900	162,065,000	500,000	1,016,505,900
1936.....	946,191,087	335,983,224	1,194,824,311	86,000,000	1,250,000	1,282,074,311

Interest Rates.—There does not exist in Canada as yet a market for money in the same sense as in great financial centres such as London and New York. However, since the War, the growing importance of Dominion financing in the domestic market has made it possible to compile a Dominion index of bond yields which is representative of interest rates in Canada. Fluctuations in the Dominion of Canada long-term bond yields for the past 8 years are shown below.

Index Numbers of Dominion of Canada Long-Term Bond Yields, 1930-37

(1926 = 100)

Month	1930	1931	1932	1933	1934	1935	1936	1937
January.....	102.1	93.9	112.7	96.3	93.2	70.9	72.4	64.6
February.....	101.4	93.6	112.2	96.0	91.0	73.2	70.8	68.4
March.....	101.1	91.9	109.1	97.7	86.1	71.4	69.9	72.7
April.....	99.3	90.0	106.8	96.6	83.8	72.2	69.5	73.2
May.....	98.4	89.3	109.3	95.0	81.6	71.4	68.8	71.0
June.....	98.2	88.3	111.7	93.3	82.1	73.4	66.9	69.3
July.....	98.0	88.3	107.5	93.5	80.1	72.1	65.1	69.0
August.....	95.9	88.3	100.5	92.2	77.8	71.6	63.2	68.1
September.....	93.9	95.5	98.7	92.4	77.2	79.8	63.1	68.3
October.....	93.6	105.2	96.2	93.5	79.3	78.9	66.2	69.7
November.....	93.6	107.7	98.5	94.3	77.2	74.5	65.1	68.8
December.....	93.9	111.7	99.4	95.1	71.3	75.5	64.1	-

paid-up capital of \$2,110,403 and deposits of \$577,299. Rapid increases in the number of companies and total volume of business resulted from subsequent legislation. In 1899, 102 companies made returns showing capital stock paid up of \$47,337,544, reserve funds of \$9,923,728 and deposits of \$19,466,676; total liabilities had increased from \$3,233,985 to \$148,143,496 between 1867 and 1899. After slight decreases in the number of loan companies in operation through amalgamations and absorptions, shortly after the turn of the century, further growth was recorded. As a result of the revision of the laws relating to loan and trust companies in 1914, statistics of provincially incorporated loan and trust companies ceased to be collected, but of late years these have made voluntary returns so that all-Canadian totals are again available.

There have been incorporated in recent years, by the Parliament of Canada, a number of companies which make small loans, usually not exceeding five hundred dollars each, on the promissory notes of the borrowers additionally secured in most cases by endorsements or chattel mortgages. The figures relating to the three companies of this class which have commenced operations are shown separately below. Prior to 1934 they have been combined with those of the other loan companies.

The paid capital stock of all real estate mortgage loan companies at the end of 1936 was \$37,374,347 (Dominion companies \$19,361,368 and provincial companies \$18,012,979); reserve funds \$25,880,312 (Dominion companies, \$15,270,085 and provincial companies \$10,610,227); liabilities to the public, \$130,566,901 (Dominion companies, \$101,240,172 and provincial companies, \$29,326,729); and liabilities to shareholders, \$65,441,342 (Dominion companies, \$36,005,549 and provincial companies, \$29,435,793).

The paid capital of Dominion small loan companies at the end of 1936 was \$976,750; reserve funds, \$446,658; liabilities to the public, \$2,934,947; liabilities to shareholders, \$1,426,179.

Trust companies act as executors, trustees and administrators under wills or by appointment, as trustees under marriage or other settlements, as agents or attorneys in the management of the estates of the living, as guardians of minors or incapable persons, as financial agents for municipalities and companies and, where so appointed, as authorized trustees in bankruptcy. Some companies receive deposits but the lending of actual trust funds is restricted by law. Trust companies are principally provincial institutions, since their original main functions were connected with probate, which lies within the sole jurisdiction of the provinces.

The aggregate total assets of the trust companies of Canada at the end of 1936 were \$2,777,106,240 as compared with \$805,000,000 in 1922 (the earliest year for which figures are available). The bulk of these assets (\$2,540,164,222 in 1936) was represented by estates, trusts and agency funds. The assets of Dominion companies in 1936 amounted to \$279,442,052 and of provincial companies to \$249,664,188.

Canadian Bond Financing.—The declining trend in sales of railway and corporation bond issues, so clearly in evidence for 1933, was reversed in 1934, and showed substantial improvement in 1935 and 1936.

In the latter year, sales under this head were valued at \$335,983,224. Corporation bond financing accounted for \$202,983,224 of this, so that

1875, the first year for which authentic records were collected by the Insurance Department, 27 companies operated in Canada—11 Canadian, 13 British and 3 United States. The proportionate increase in the number of British and foreign companies from 59 to 79 p.c. of the total number is a very marked point of difference between fire and life insurance in Canada, the latter being carried on very largely by Canadian companies.

The enormous increase since 1869 (the earliest year for which statistics are available) in the fire insurance in force, is no doubt partly due to the growth of the practice of insurance; but it is also important as an indication of the growth of the value of insurable property in the country, and thus throws light upon the expansion of the national wealth of Canada. By 1880, companies with Dominion licences had fire insurance in force totalling \$411,564,271; by 1900, the one billion-dollar mark had about been reached and, by 1930, the total stood at \$9,672,997,000. At the end of 1936, besides \$9,248,273,260 of fire insurance in force in companies with Dominion licences, there was also \$1,184,852,046 in force in companies with provincial licences, or about \$10,433,125,306 in force with companies, associations, or underwriters licensed to transact business in Canada.

Miscellaneous Insurance.—Miscellaneous insurance now includes among other classes in Canada: accident (including personal accident, employers' and property liability, and accidental damage to personal property), sickness, falling aircraft, earthquake, automobile, burglary, explosion, forgery, credit, guarantee, hail, inland transportation, aviation, machinery, personal property, plate glass, property, rain, sprinkler-leakage, steam boiler, title, tornado, and live-stock insurance, etc. Whereas, in 1880, 18 companies were licensed for such insurance, in 1936 there were 235 companies, of which 51 were Canadian, 63 British and 121 foreign.

The total net premium income for 1936 was \$29,060,032 and the most important class of miscellaneous insurance, according to the amount of premiums received, was automobile insurance, which has greatly increased during the past twenty years; although a decrease had been shown for a few years prior to 1935, there has been an increase in 1935 and 1936. As recently as 1910, the premium income of companies doing an automobile insurance business was only \$80,466; in 1916 it was \$909,503 and in 1936 \$13,510,431. The premium income of personal accident insurance came second with \$3,013,065. Combined accident and sickness insurance was third in 1936 with \$1,845,491. The premium income of all accident and sickness insurance combined totalled \$8,414,326.

Loan, Small Loan and Trust Companies

The principal function of loan companies is the lending of funds on first mortgages on real estate, 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. Of the loan companies under provincial charters, the majority operate largely in the more prosperous farming communities.

The number of loan and savings societies in operation and making returns to the Government at Confederation was 19, with an aggregate

under an Act of Parliament entitled the Fair Wages and Hours of Labour Act, 1935, and, in regard to government contracts for various classes of supplies and equipment, under the provisions of an Order in Council. The monthly *Labour Gazette* has, since 1900, provided a comprehensive survey of labour conditions in Canada, and is supplemented by various special publications dealing with wages and hours of work, labour organizations, labour laws, etc. The Department also administers the Employment Offices Co-ordination Act, the Technical Education Act, the Government Annuities Act, the Combines Investigation Act, the National Employment Commission Act, and the Dominion relief legislation, and is charged with certain duties arising out of the relations of Canada with the International Labour Organization of the League of Nations.

Provincial Departments of Labour.—Each of the provinces except Alberta and Prince Edward Island has a department or bureau of labour charged with the administration of provincial labour laws. The principal objects of provincial labour legislation in Canada include the regulation of employment conditions in factories, shops and other workplaces, the maintenance of employment offices, the establishment of minimum wages and maximum hours of work, the formulation of collective labour agreements, and the enactment of workmen's compensation laws. Provincial factory and shop legislation embodies the regulation of child labour, hours of work for women and young persons, and provisions for safety and sanitation in the workplace. The provincial employment offices are operated with the assistance of the Employment Service of Canada. Minimum wage legislation applying to both male and female workers has been enacted in all the provinces except Prince Edward Island and is administered by special boards which, in most provinces, are linked with, or form part of, the labour department. In Alberta the minimum wage and maximum hours laws, as well as other labour legislation, are administered by the Department of Trade and Industry. The collective agreements statutes in Alberta, Saskatchewan, Ontario, Quebec, and Nova Scotia (covering only the building trades in Halifax and Dartmouth) provide that any agreement as to wages and hours of labour between a representative number of employers and employees may be extended to the whole industry within the district concerned. Workmen's compensation laws are administered in most of the provinces by independent bodies, but in Alberta the Workmen's Compensation Board administers the Factory Act under the Minister of Trade and Industry and the New Brunswick Board functions similarly under the Minister of Health and Labour.

Occupations of the People*

At the Census of 1931, 3,927,230 persons, out of a population of 10,382,833 in the nine provinces, reported gainful occupations. Males with gainful occupations numbered 3,261,371 and represented 83.05 p.c. of the total, while the number of females was 665,859 or 16.95 p.c. of the total.

The largest single occupation group, so far as males are concerned, was agriculture, with 38 p.c. of the total males in all occupations, although

* Volumes V and VII of the Report of the Seventh Census of Canada, 1931, give details on earnings of wage-earners and on occupations of the people, respectively.

its importance was relatively less in 1931 than at the previous census; manufacturing was second with 12 p.c., if the broad general class "labourers" is disregarded. Females are chiefly found in the services, over 50 p.c. of all occupied females being so reported—18 p.c. in professional service, and 34 p.c. in personal service.

Out of a total number of 3,927,230 persons reporting a gainful occupation at the 1931 Census, 2,570,097 or 65.44 p.c. stated that they were employed on a wage or salary basis; the remainder was composed of (a) employers, (b) persons carrying on a trade or profession on their own account, and (c) unpaid workers, mainly farmers' sons. The number of male "wage-earners" in 1931 was 2,022,260, or 78.68 p.c. of the total of both sexes, while female "wage-earners" numbered 547,837, or 21.32 p.c. of the total. Of these 2,022,260 males, 1,947,957 reported earnings aggregating \$1,804,942,500 for the census year ended June 1, 1931, while the 528,457 females whose earnings were stated earned \$295,610,200 over the same period.

Organized Labour in Canada

Until the middle of the nineteenth century only a small number of independent trade unions, for the most part consisting of workmen of a single craft in one locality, had been formed in Canada. From 1850 to 1870 unionism in Canada was still in the stage of unconcerted action, but during that period its sporadic growth was greatly stimulated by the marked progress of the trade union movement in Great Britain and in the United States. The Dominion's basic trade union legislation, passed in 1872, was patterned closely after the British statutes of the previous year. At the same time the United States was furnishing Canada with the model for the actual machinery of labour organization, and in this period most of the existing Canadian local unions affiliated with the American central organizations of their respective crafts. The Trades and Labour Congress of Canada, the oldest federated labour organization in the Dominion, has been functioning continuously for over half a century as the recognized head and legislative mouthpiece of the internationally organized Canadian workers.

Beginning in 1901 a number of "national" unions, later known as National Catholic Unions, were organized in the province of Quebec, and in 1921 a central organization of these unions, known as the Confederation of Catholic Workers of Canada, was established. The Canadian Federation of Labour, formed in 1902, continued as a separate entity for a quarter of a century; recently it was revived, after having merged for a decade with the All-Canadian Congress of Labour, which has been in existence since 1927.

The total number of organized workers in Canada at the end of 1936 was 322,473, as compared with 280,704 in 1935. International unions had 1,896 branches in the Dominion, with a combined membership of 174,769. Unions operating only in Canada had 990 locals, with a combined membership of 147,704.

Industrial Disputes

During the eleven months (January to November inclusive) of 1937 there were 275 strikes and lockouts which involved 70,300 workers and caused a loss of 904,000 man working days. During the twelve months of

1936 there were 156 disputes, involving 34,812 workers and a time loss of 276,997 working days, and, in 1935, 120 disputes involving 33,269 workers and 284,028 working days. The minimum loss in working days since the record was commenced in 1901 was in 1930, when 91,797 working days were lost in 67 disputes involving 13,768 workers. The maximum loss was in 1919, when 336 disputes involved 148,915 workers and caused a time loss of 3,400,942 working days.

Dominion Unemployment and Agricultural Assistance Measures, 1937

Grants-in-Aid.—Under the provisions of the Unemployment and Agricultural Assistance Act, 1937, the administration of which is vested in the Minister of Labour, the Dominion is continuing throughout the fiscal year 1937-38 to assist the provinces in discharging their responsibilities in connection with the granting of aid to necessitous persons by way of a monthly grant-in-aid. During the first quarter of the fiscal year (April, May, and June, 1937) the amounts of the monthly grants-in-aid to the provinces were: Prince Edward Island, \$2,000; Nova Scotia, \$30,000; Quebec, \$500,000; Ontario, \$600,000; Manitoba, \$175,000; Saskatchewan, \$230,000; Alberta, \$130,000; and British Columbia, \$150,000. As a result of representations made by the province of New Brunswick to the effect that it had discontinued the granting of material aid, substituting therefor an enlarged works program, the monthly grant-in-aid to that province has been replaced by Dominion contribution towards the cost of the province's relief works expenditures of an additional amount equal to that which would have been paid to the province by way of grant-in-aid had such been necessary. The amounts of the monthly grants-in-aid paid to the provinces of Prince Edward Island, Nova Scotia, Quebec, Ontario, and British Columbia for the second quarter of the fiscal year (July, August and September, 1937) were reduced after consideration had been given to the improved conditions in those provinces, the monthly grant to each of the provinces for the second quarter being: Prince Edward Island, \$1,300; Nova Scotia, \$20,000; Quebec, \$410,000; Ontario, \$480,000; Manitoba, \$175,000; Saskatchewan, \$230,000; Alberta, \$130,000; and British Columbia, \$120,000. The amounts to be paid the provinces by way of monthly grants-in-aid for the third quarter of the fiscal year had not been determined at the date of preparation of this summary, namely, Oct. 1, 1937, but conferences were being held between officials of the provinces and of the Dominion with a view to determining particular needs.

Relief Works.—In addition to the payment of the aforementioned monthly grants-in-aid, agreements with all the provinces have been authorized under the provisions of the Unemployment and Agricultural Assistance Act, 1937, providing for Dominion contribution towards the cost of works, consisting in the main of Trans-Canada Highway and provincial highway works, provincial works, and, in some provinces, municipal works. The Dominion contribution to a province's works program is generally 50 p.c. of the cost.

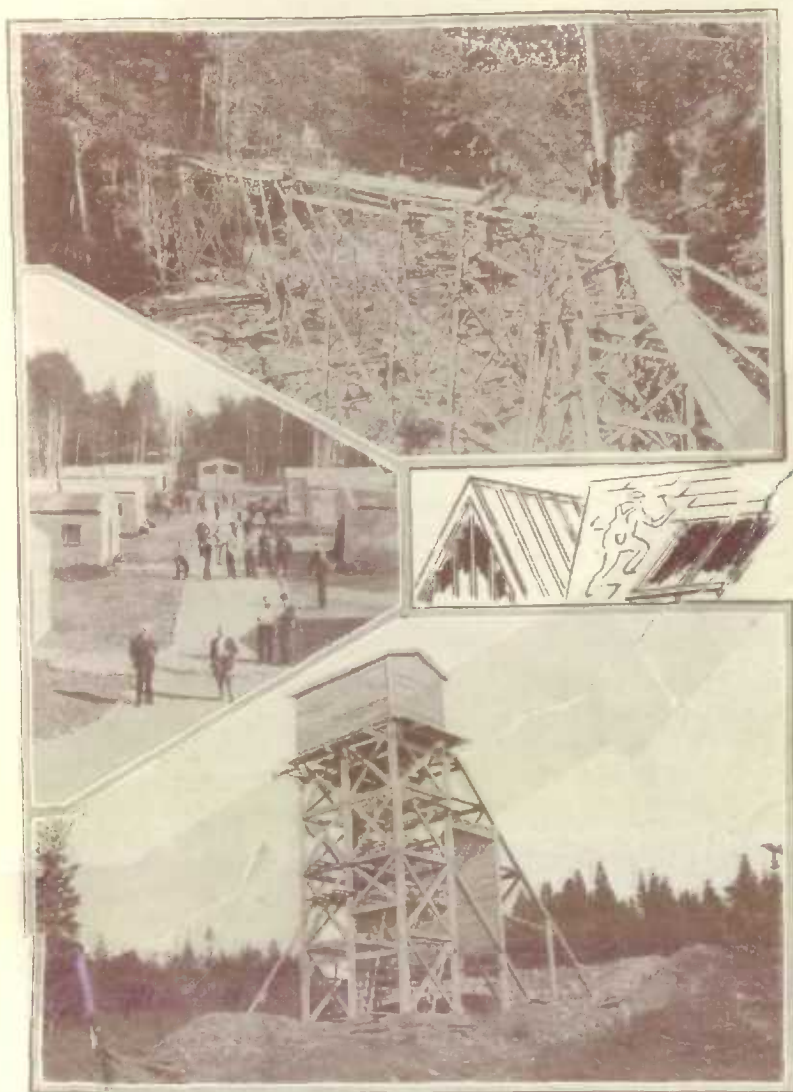
Farm Placements.—The agreements entered into with the provinces of Prince Edward Island, New Brunswick, Quebec, Manitoba, Saskatchewan, Alberta, and British Columbia under the Unemployment Relief and

Assistance Act, 1936, respecting the placement on farms of unemployed persons who would otherwise be in receipt of aid, necessarily expired on Mar. 31, 1937, together with the legislation under which they were executed. Under the provisions of the Unemployment and Agricultural Assistance Act, 1937, these agreements were, at the request of the provinces, extended to April 30, 1937. At the date of writing, namely, Oct. 1, 1937, agreements with the four western provinces, effective from Oct. 1, 1937, to Mar. 31, 1938, were in course of negotiation, providing for the continuance of the Farm Improvement and Employment Plan along the same lines as provided by the 1936 agreements, that is, payment of \$5 per month to the farmer and payment to the individual placed on the farm of a rate equal at the end of the period to \$7.50 per month. Provision is also made for the purchase of suitable work clothing at a cost not in excess of \$3 for each individual placed, while the necessary costs of transportation of workers from the point of employment to the home of the employing farmer is also to be contributed to by the Dominion under the terms of the agreements. The basis of the Dominion's contribution to the provinces under the provisions of the Farm Improvement and Employment agreements is to be the same as under the 1936 agreements, namely, 50 p.c., the provinces bearing all necessary administration expenses. The largest number of placements during any one month under the 1936 agreements was effected during January, 1937, when 43,915 persons were placed. This number was made up as follows: Quebec, 6,182; Manitoba, 7,980; Saskatchewan, 26,426; Alberta, 3,114; and British Columbia, 213.

Drought Relief.—As the serious drought conditions prevalent during 1936 in certain large agricultural areas of the three Prairie Provinces were still existent at Mar. 31, 1937, the date of the expiration of the agreements entered into under the Unemployment Relief and Assistance Act, 1936, for aid in these areas, provision was made for the extension of the agreements to Aug. 31, 1937. These agreements provide for Dominion contribution of 100 p.c. of the costs, exclusive of administration expenses, incurred by the Prairie Provinces for food, fuel, clothing and necessary shelter, to all permanent residents of the defined areas in need of material aid, excepting those located in cities or towns within the areas. The latter are cared for by the provinces and municipalities, with the assistance of the Dominion grants-in-aid. Provision is made in the agreements that the measure of aid granted pursuant to the arrangement should not exceed that given to similar needy in other rural sections of the provinces. Effective from Sept. 1, 1937, the administration of aid in the drought areas was, in conformity with the recommendations of the National Employment Commission, transferred to the Department of Agriculture in order that the different groups of relief recipients might be segregated, and that agricultural assistance might be distinguished as far as possible from unemployment aid.

Youth Training.—To help meet the situation caused by the volume of unemployment among young people which existed concurrently with an increasing measure of industrial recovery and with a growing demand for skilled workers, Parliament voted to the Department of Labour the sum of \$1,000,000 to be used, during 1937-38, for training and development projects for "unemployed young people" between the ages of 18

YOUTH-TRAINING PROJECTS



Youth Training.—The Government of Canada, through the Department of Labour, is meeting unemployment among young people between 18 and 30 years of age by numerous training and development projects. A few of these are illustrated here. *Above:* A wooden pipe line in course of construction across a canyon in British Columbia. *Centre:* A general view of the camp at Duck Mountain Forest Project, Manitoba. *Below:* A mine-apprentice project in Nova Scotia. The headframe was constructed by youths in training under the supervision of an instructor.

Courtesy, Department of Labour.

and 30. This fund was established to provide for: (a) training projects of an occupational nature devised to increase the skill and employability of young people; (b) industrial 'learnership' courses devised to provide theoretical training concurrent with employment; (c) work projects devised to conserve natural resources, as well as train and recondition the young people participating; and (d) training projects of a physical nature to assist in the maintenance of health and morale. Agreements are being entered into with the provinces covering training projects suitable to their individual conditions. Some of the projects undertaken are as follows: forestry work; training in hard-rock and placer mining; industrial apprenticeship and learnership; practical and technical training in agriculture; women's courses in household work, handicrafts, and other specialized services; and various forms of urban occupational training. Provision has been made in the execution of these projects for vocational guidance, recreation, and instruction in physical education. It is hoped by these means to make available for the primary and secondary industries a more adequate supply of skilled workers, and also to give an opportunity of training to those young people who, having been unemployed for some years, have lost the advantage of their education and the opportunity to acquire industrial skill. The cost of these youth-training projects is being shared by the Dominion and the provinces on an equal basis, the provinces bearing all expenses of administration.

Relief Settlement.—The Dominion is continuing to assist the provinces of Quebec, Manitoba, and Alberta in placing on the land, under the Relief Settlement Agreements outlined at pp. 169-171 of *Canada 1937*, selected families who would otherwise be in receipt of material aid. Since the publication of *Canada 1937* an agreement has been entered into with the province of Saskatchewan providing for a non-recoverable expenditure of one-third of an amount not to exceed \$1,000 per family for placing selected families on the land and assisting them to become self-supporting. This agreement, which was entered into on June 1, 1937, expires on Mar. 31, 1941. The number of settler families and individuals approved and settled under the various agreements entered into with the provinces since 1932 respecting Relief Settlement are set forth below:—

Number of Settler Families and Individuals Approved and Settled under the Relief Acts' Agreements to Oct. 31, 1937

Province	Settler Families	Total Individuals	Province	Settler Families	Total Individuals
	No.	No.		No.	No.
Nova Scotia.....	343	2,154	Saskatchewan.....	939	4,604
Quebec.....	1,423	8,858	Alberta.....	720	3,374
Ontario.....	605	2,990	British Columbia....	52	285
Manitoba.....	1,080	5,251	Totals	5,163	27,516

Dominion Relief Disbursements.—The table on p. 169 sets forth the Dominion's disbursements to Oct. 1, 1937, for assistance provided under relief legislation since 1930.

The summary of loans to the western provinces and the C.P.R. outstanding as at the same date is: Manitoba, \$21,928,044 (inclusive of \$804,897 written down to non-active asset); Saskatchewan, \$56,427,581

(inclusive of \$17,682,158 non-active asset); Alberta, \$25,886,198; British Columbia, \$31,271,716; C.P.R., \$2,447,000; total, \$137,960,739.

Total Disbursements by the Dominion for Assistance Provided under Relief Legislation, 1930-37

Item	1930 Act	1931 Act	1932 Act	1933 Act	1934 Act	1935 Act	1936 Act	1937 Act ¹	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Disbursements to Provinces—									
Prince Edward Island.	95	129	25	99	147	287	291	10	1,083
Nova Scotia.	834	1,070	580	1,261	574	1,295	1,110	163	6,887
New Brunswick.	504	763	220	503	425	1,090	910	—	4,475
Quebec.	3,292	5,437	4,253	8,297	6,345	7,503	10,750	2,741	48,618
Ontario.	4,092	11,101	7,987	12,914	11,015	16,208	13,927	3,240	81,114
Manitoba.	1,008	3,348	1,746	2,372	2,120	3,563	4,390	1,172	20,319
Saskatchewan.	1,689	8,225	5,612	2,715	7,610 ²	7,097 ²	9,248	3,108	45,304
Alberta.	1,281	3,038	1,301	1,572	1,469	1,781	2,572	932	13,946
British Columbia.	1,376	3,940	3,228	3,448	2,301	2,283	3,495	810	20,881
Yukon and N.W.T.	20	10	3	5	—	10	—	—	48
Disbursements through Dom. Govt. Depts.	57	4,596	1,033	7,614	8,393	8,233	127	3	30,056
Other Disbursements—									
Board of Railway Commissioners.	500	500	—	—	—	—	—	—	1,000
C.P.R.	884	209	—	—	—	—	—	—	1,073
C.N.R.	882	—	—	—	—	—	—	—	882
Administration expenses.	43	85	68	87	89	140	179	120	811
Miscellaneous.	—	1	3	—	5	21	8	5	43
Totals	17,737	42,452	26,059	40,977	40,523	49,481	47,007	12,384	276,549

¹To Oct. 1, 1937.

²Includes \$5,000,000 advanced to the province for relief in the drought area.

³Includes \$4,000,000 advanced to the province for relief in the drought area.

Employment and Unemployment

Unemployment in Trade Unions.—Monthly statistics are tabulated in the Department of Labour from reports furnished by trade unions showing the unemployment existing among their members. In the first ten months of 1937, 1,834 organizations reported an average membership of 197,735, of whom 20,641 were, on the average, unemployed; this was a percentage of unemployment of 10.4 compared with 13.2, 15.7, and 18.3 for the first ten months of 1936, 1935, and 1934, respectively.

Applications, Vacancies and Placements of the Employment Service of Canada.—Since the Employment Offices Co-ordination Act was passed in 1918 the Dominion Department of Labour, in co-operation with the provinces, has maintained local employment offices in a number of centres throughout the Dominion; the volume of business transacted by these bureaus is regarded as indicative of current labour conditions. Up to Oct. 31, 1937, 584,652 applications for work and 346,561 vacancies were registered at the 69 existing offices, while the placements effected numbered 321,318. In the same period of 1936, 558,446 applications for work, 288,570 vacancies and 268,692 placements were recorded.

National Employment Commission.—During 1937 the Commission continued its effort to obtain unemployment facts through national registration of Dominion aid recipients. By registration the problem has been "broken down" into its various parts, with the result that it can now be viewed in proper perspective. The Commission's anticipations in regard to a rapidly improving level of employment in all branches of industrial life were justified in 1937.

Publication and circulation of the Commission's interim report, and regular issue of a monthly information bulletin have helped to familiarize the public with remedial activities and recommendations. Youth-training projects recommended to the Government took practical form with the granting by Parliament last session of \$1,000,000 for this purpose. These projects are well advanced. The Home Improvement Plan, sponsored by the Commission to stimulate employment in the building trades, has progressed satisfactorily. The Farm Placement Scheme, which proved successful during the winter of 1936-37, is again being put into operation. Negotiations have been undertaken with the provinces designed to produce changes in the system governing grants-in-aid so that moneys appropriated will be directed to specific categories of aid.

The Commission has continued to emphasize the importance of a national employment service, not only as an efficient placement office but as an essential focal point for all phases of employment planning. It is in such a service, assisted as it would be by advisory councils, that youth-training and other plans aimed at re-training and restoring the skill, physique, and morale of those in middle and upper age groups could best be initiated. Attention has repeatedly been drawn by the Commission to the urgent need for such training and rehabilitation plans.

Employment, 1936 and 1937.—The Dominion Bureau of Statistics makes monthly surveys of the employment afforded by employers of fifteen persons or over in the following industries: manufacturing, logging, mining, transportation, communications, construction and maintenance, services and trade; these cover a large proportion of the total working population in Canada. In the first eleven months of 1937, statistics were received from an average of 10,187 firms, whose staffs averaged 1,079,094, compared with returns from 9,682 employers of 973,811 persons in the same period of 1936. Widespread improvement in the employment situation in recent months continues the generally upward movement in evidence since the low point of the depression was reached in 1933. From the 1937 low of 102.8 on Mar. 1, the index (based on the 1926 average as 100), rose to 125.7 at Oct. 1, when the maximum for the year was recorded. The trend was seasonally downward at Nov. 1, 1937, but the index for that month was 20.6 p.c. higher than at the opening of the year, an increase that considerably exceeded the average gain recorded in the first eleven months of the years since 1920. The average for the period, January-November, 1937, stood at 113.4, compared with 103.1 in 1936, an advance of 10 p.c.

Industrial activity during 1937 showed general improvement, both geographically and industrially, the situation being better, on the whole, than in any other year since 1929.

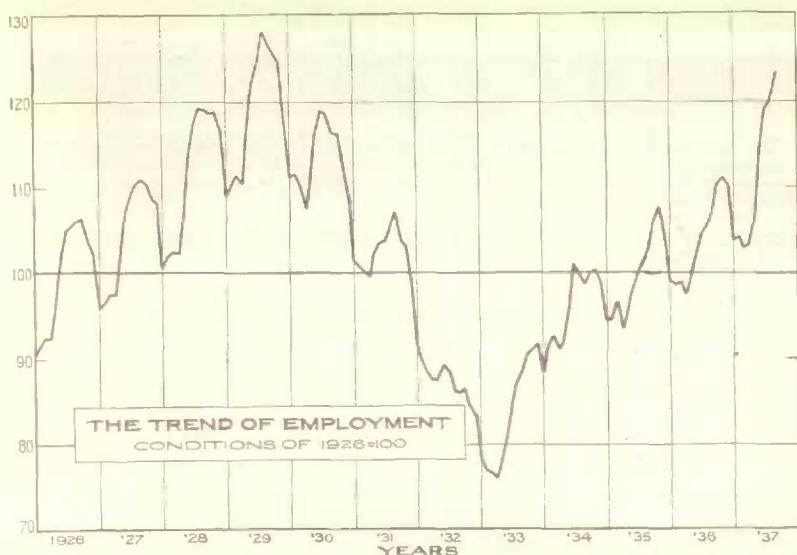
Employment by Economic Areas.—The accompanying table gives monthly indexes of employment in the five economic areas during 1937, with annual averages since 1929. The figures for recent months show a high level of activity in most of the provinces, the exception being the prairie area where the unfavourable crop conditions last season exercised a depressing effect upon the general industrial situation.

Index Numbers of Employment as Reported by Employers, by Economic Areas, as at the first of each month, November, 1936, to November, 1937, with Yearly Averages since 1929.

NOTE.—These indexes are calculated upon the average for the calendar year 1926 as 100. The relative weight shows the proportion of employees reported in the indicated economic area to the total reported by all employers making returns in Canada at Nov. 1, 1937.

Year and Month	Maritime Provinces	Quebec	Ontario	Prairie Provinces	British Columbia	Canada
1929—Averages	114.8	113.4	123.1	126.3	111.5	119.0
1930—Averages	118.3	110.3	114.6	117.1	107.9	113.4
1931—Averages	108.1	100.9	101.2	111.5	95.6	102.5
1932—Averages	92.2	85.5	88.7	90.0	80.5	87.5
1933—Averages	85.3	82.0	84.2	86.2	78.0	83.4
1934—Averages	101.0	91.7	101.3	90.0	90.4	96.0
1935—Averages	103.7	95.4	103.3	95.2	97.7	99.4
1936—						
Nov. 1.	119.4	110.3	112.8	106.0	105.4	111.0
Dec. 1.	115.3	112.6	112.9	98.6	101.5	110.1
Averages, 12 mos.	109.4	100.7	106.7	99.3	101.1	103.7
1937—						
Jan. 1.	109.5	104.0	107.5	94.2	95.4	103.8
Feb. 1.	107.5	106.7	108.4	91.4	91.3	104.1
Mar. 1.	106.6	102.5	108.9	91.3	89.2	102.8
April 1.	105.4	102.2	108.8	89.4	97.5	103.0
May 1.	110.7	105.2	111.2	93.2	103.4	106.3
June 1.	122.0	113.6	118.8	99.3	112.2	114.3
July 1.	135.8	118.0	122.2	104.0	117.1	119.1
Aug. 1.	134.3	120.8	122.2	105.6	116.9	120.0
Sept. 1.	135.4	124.5	125.0	109.4	121.2	123.2
Oct. 1.	134.9	127.3	130.4	107.6	117.9	125.7
Nov. 1.	127.3	130.6	130.4	106.2	111.5	125.2
Averages, 11 mos.	120.9	114.1	117.6	99.2	106.7	113.4
Relative Weight by Economic Areas as at Nov. 1, 1937.	7.7	30.4	42.6	11.4	7.9	100.0

Employment by Cities.—Employment in the larger industrial cities, generally, has not yet shown the same degree of recovery as has been indicated in the Dominion as a whole. Nevertheless, activity in Montreal.



Quebec, Toronto, Ottawa, Hamilton, Windsor, Winnipeg, and Vancouver was greater in 1937 than in any of the preceding five or six years. Most industries in these centres shared in the improvement reported in the year just passed, but the advances in manufacturing were especially pronounced, while in most cases, employment in construction continued in less than normal volume.

Employment by Industries.—The upward movement indicated in most of the main industrial groups in recent years continued in evidence during 1937. Employment in manufacturing, logging, mining, services, and trade reached unusually high levels, surpassed in some cases only by those of 1929, when the all-time high was recorded. Improvement over recent years was also recorded in communications, transportation, and construction and maintenance, but the gains in these divisions were not so pronounced as in the first-named industries.

Index Numbers of Employment as Reported by Employers, by Industries, as at the first of each month, November, 1936, to November, 1937, with Yearly Averages since 1929.

Year and Month	Manu- factur- ing	Log- ging	Mining	Com- muni- cations	Trans- porta- tion	Con- struc- tion and Main- tenance	Service	Trade	All Indus- tries
1929—Averages...	117.1	125.8	120.1	120.6	109.7	129.7	130.3	126.2	119.0
1930—Averages...	108.9	108.0	117.8	119.8	104.6	129.8	131.6	127.7	113.4
1931—Averages...	95.3	60.1	107.7	104.7	95.8	131.4	124.7	123.6	102.5
1932—Averages...	84.4	42.6	99.2	93.5	84.7	86.0	113.6	116.1	87.5
1933—Averages...	80.9	66.5	97.5	83.9	79.0	74.6	106.7	112.1	83.4
1934—Averages...	90.2	124.7	110.8	79.1	80.3	100.3	115.1	117.9	96.0
1935—Averages...	97.1	126.9	123.3	79.8	81.2	97.8	118.2	122.1	99.4
1936—									
Nov. 1.....	107.7	206.9	151.8	53.1	87.1	99.6	124.9	132.0	111.0
Dec. 1.....	107.0	265.7	150.3	81.7	86.5	80.1	122.4	136.0	110.1
Averages, 12 mos.	103.4	138.7	136.5	81.9	84.1	88.2	124.5	127.4	103.7
1937—									
Jan. 1.....	102.4	242.1	145.6	80.7	81.4	61.2	124.8	136.9	103.8
Feb. 1.....	105.3	244.4	147.6	79.8	80.7	57.2	119.1	128.4	104.1
Mar. 1.....	107.6	193.3	145.8	80.8	79.6	52.8	118.9	126.1	102.8
April 1.....	110.8	132.5	146.0	81.4	79.5	53.7	122.7	127.5	103.0
May 1.....	113.8	86.7	147.4	82.9	85.1	71.4	125.2	128.4	106.3
June 1.....	117.9	109.1	151.9	85.6	86.7	105.2	129.0	131.5	114.3
July 1.....	110.0	125.0	153.6	88.0	89.4	128.5	137.5	133.4	119.1
Aug. 1.....	118.1	124.7	153.7	89.9	89.1	139.8	141.7	132.2	120.0
Sept. 1.....	121.2	143.4	159.1	90.9	89.7	144.5	146.6	130.9	123.2
Oct. 1.....	121.7	208.5	163.9	90.5	90.4	144.3	135.4	133.4	125.7
Nov. 1.....	119.0	306.3	161.1	88.9	87.2	131.7	131.0	137.0	125.2
Averages, 11 mos.	114.3	174.2	152.3	85.4	85.3	99.1	130.2	131.4	113.4
Relative Weight by Industries as at Nov. 1, 1937 ¹	50.7	7.4	6.2	2.0	8.8	13.1	2.4	9.4	100.0

¹ See headnote to table on page 171.

Old Age Pensions and Pensions for Blind Persons

The Old Age Pensions Act, 1927.—The Act provides for a Dominion-Provincial system of non-contributory old age pensions in such provinces as have enacted and given effect to special legislation for this purpose. The provinces are charged with the payment of pensions, the Dominion reimbursing each province, quarterly, to the extent of 75 p.c.* of the net

*The proportion to be paid by the Dominion as set forth in the Act of 1927 was one-half, but this was increased at the second session of the Seventeenth Parliament to 75 p.c., which increase was made effective from Nov. 1, 1931.

cost of its payments on account of old age pensions. All the provinces are now operating under such agreements. Payment of pensions in New Brunswick commenced July 1, 1936. The province of Quebec entered into an agreement with the Dominion for payment of pensions commencing Aug. 1, 1936. Old age pensions are also payable in the Northwest Territories. Authority was given to the Gold Commissioner of Yukon in 1927 to enter into an agreement with the Dominion Government for the purpose of obtaining the benefit of the Old Age Pensions Act, but no scheme has as yet been formulated.

The following table gives the contributions by the Dominion Government under the Act, the numbers of pensioners and average pension as at June 30, 1937, and the effective date of legislation in each province:—

Summary Statement of Old Age Pensions in Canada, as at June 30, 1937

Province	Effective Date	Number of Pensioners	Average Monthly Pension	Dominion Government Contributions, April 1 to June 30, 1937	Dominion Government Contributions from Inception of Act
			\$	\$	\$
Prince Edward Island.....	July 1, 1933....	1,761	10.50	41,143 ¹	553,659
Nova Scotia.....	Mar. 1, 1934....	13,537	14.56	449,021	5,424,208
New Brunswick.....	July 1, 1936....	10,363	13.49	320,412	1,188,720
Quebec.....	Aug. 1, 1936....	37,453	18.29	2,597,525 ²	4,942,632
Ontario.....	Nov. 1, 1929....	56,358	18.25	2,482,072 ²	51,803,964
Manitoba.....	Sept. 1, 1928....	11,730	18.67	496,105	11,200,604
Saskatchewan.....	May 1, 1928....	11,552	16.52	440,200	10,124,015
Alberta.....	Aug. 1, 1929....	9,278	18.21	375,778	6,870,348
British Columbia.....	Sept. 1, 1927....	11,066	19.44	474,961	10,432,036
Northwest Territories.....	Jan. 25, 1929....	6	18.80	425	11,753
Totals.....	-	162,103	-	7,677,642	102,551,939

¹ Includes adjustment of payment made in previous quarter.
Aug. 1, 1936, for additional pensions granted during quarter.

² Includes payments from
Includes part of March payment

Pensions for Blind Persons.—By an amendment to the Old Age Pensions Act, assented to Mar. 31, 1937, provision is made for the payment of pensions, under certain conditions, to blind persons who have attained the age of forty years. The maximum pension payable to blind persons is \$240 a year which is subject to reduction by the amount of the pensioner's income in excess of \$200 a year in the case of an applicant who is unmarried or is a widower or a widow without a child or children, and by the amount of income in excess of \$400 a year in the case of an applicant who is married or a widower or widow with a child or children. The Act also provides for the payment of a reduced pension to a blind person who marries another blind person subsequent to the date on which the Act came into force.

Pensions for blind persons are administered by the provincial authorities under agreements made by the Lieutenant-Governors of the provinces with the Governor in Council. The Dominion Government assumes responsibility for 75 p.c. of the net sum paid out by the provinces for pensions to blind persons.

CHAPTER XVIII

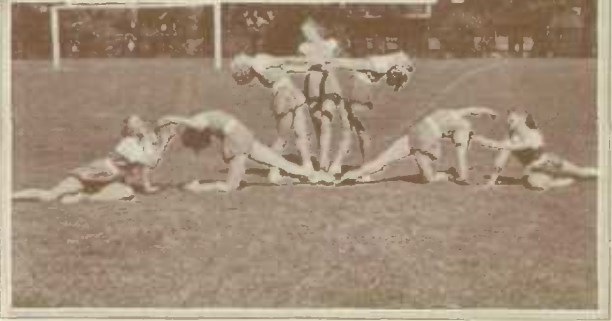
EDUCATION

Canada's constitution assigns public education, except in the case of the native Indian population, to the jurisdiction of the Provincial Governments. A system of public elementary and secondary education, financed mainly by local school authorities (of which there are about 23,500), but assisted by provincial grants, has developed in each province. Since 1913 the Dominion Government has provided certain grants to the provinces for education, first in aid of agricultural instruction, later technical education, and in 1937 for the training of unemployed youth. Yet, in spite of provincial and Dominion assistance, more than 80 p.c. of the cost of running the schools is met by local school authorities, the source of revenue being almost entirely taxation on real estate.



Waltz of the Hearts, an outstanding performance at the provincial mass demonstration of 1937.

Natural dancing and posing on the lawn.



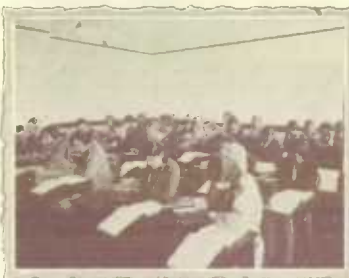
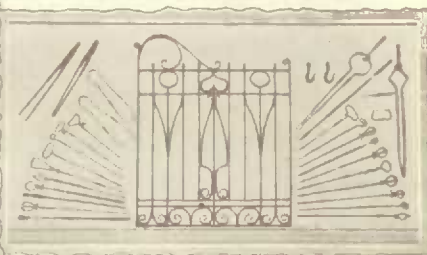
The British Columbia program of physical and recreational education demonstrates that the æsthetic side is not neglected.

Courtesy, Ian Eisenhardt.

There are some private schools in all provinces, i.e., schools that are not conducted by publicly-elected or publicly-appointed boards, and not financed out of public money, but their enrolment amounts to only about



PUBLIC SCHOOL ACTIVITIES — *continued.*



Interesting Features of Public School Activities in Canada

On Reverse Side.—The three pictures across the top of the double page illustrate one of the ways in which schooling is brought to scattered families in the Canadian north. Six railway cars (left), each moving on regular schedule in a certain area, of Northern Ontario are fitted with classroom (centre) and teacher's living quarters (right). The latest report of the Ontario Department of Education says: "Despite a winter temperature of sometimes 55° below zero, the school cars functioned fully every day with almost 100 p.c. attendance".

The two pictures at right centre show the work of special classes for retarded children in the elementary schools. There are about 6,000 children in these classes in Ontario and 3,000 in other provinces.

At left centre girls in a rural school of Nova Scotia are shown taking notes on a radio lesson, while the teacher is engaged with a junior class. The other two views of this group were taken on field days at Nova Scotia schools; one shows children dramatizing Canadian history, and the other folk-dancing on the lawn.

The three pictures at the bottom are taken at evening technical classes in diesel engineering, oxyacetylene welding, and radio servicing. About 60,000 adults, including young persons recently out of day school, attend evening classes at the technical schools in Canada.

Left-Hand Page.—At the top of the page, three manual training exhibits in British Columbia are shown—a prize float from a rural school, bird houses with their junior builders, and metal work by a high school class.

The other four pictures are from Saskatchewan: two are from a technical high school—one showing a class in drafting, the other household science practice—and two from a commercial high school showing boys and girls acquiring skill on the adding machine and typewriter.

INTERESTING FEATURES
OF
PUBLIC SCHOOL
ACTIVITIES
IN
CANADA



4 p.c. of the total. In the realm of higher education six provinces have each a provincially-supported university, and the remaining three have each one or more colleges supported by provincial funds, but in most of them there is a considerable number of students in private, endowed, or denominational colleges.

With nine distinct provincial systems of education there are many opportunities for each province to benefit from the educational experience of others. Several Dominion-wide educational associations exist through which it is possible for exchange of experience to take place: the Canadian Education Association, the Canadian Teachers' Federation, the National Conference of Canadian Universities, the Canadian Federation of Home and School Associations, the Canadian Association for Adult Education, etc. The discussions conducted at their recent meetings indicate some of the problems currently receiving most attention in Canadian education.

For several years there has been scarcely a single major meeting that has not given some consideration to the inequality of educational opportunity in different areas, and the wide local variations in the weight of school support resulting from the situation wherein each rural community of a few families is, in most provinces, responsible for the greater part of its school costs. Some communities, it is claimed, are unable to find money with which to keep their schools up to any reasonable minimum standard, even though their school taxes may represent a higher proportion of income than in other communities with the best of school services. The remedy lies in the direction of equalizing school costs over larger areas, regional or provincial; some progress in the formation of larger areas for school finance has been made in Alberta and British Columbia during the past two or three years.

Another problem receiving a good deal of attention is the re-organization of post-elementary instruction that has become necessary as the proportion of young persons remaining in school beyond the elementary years has so conspicuously increased. Space does not permit of an account of the changes that are taking place, but the Annual Survey of Education in Canada, published by the Dominion Bureau of Statistics,* includes a bibliography of Canadian studies in education, and an index of contents of the education periodicals published in Canada; these record the literature to be consulted for the extended study of this and other problems.

A factor that has emphasized the problem of adjustments between elementary and secondary schooling is the decreasing number of younger children. The child population of the country has, for some years, ceased to increase. There are fewer children under the age of ten than in the 10-year group aged 10-19, and this situation has contributed to the relative disproportion in post-elementary schools. It has also contributed to the over-supply of teachers that accumulated in recent years, but has not been, by any means, entirely responsible for it.

Fewer girls left teaching for other positions, or to be married, during the depression years, and former teachers came back to the profession after spending some time at other work. This is reflected in the proportions of male and female teachers; in four years men teachers increased by

* Obtainable from the King's Printer, price 50 cents.

about 3,500 while women teachers decreased by 800. Fewer new teachers have been training since 1933, however, and the surplus is being gradually reduced.

An increasing interest in the newer means of instruction, such as the radio and motion picture, is beginning to characterize Canadian instruction. The Dominion Bureau of Statistics in 1937 canvassed the extent to which these were used in schools, and found that, although they were much less used than in certain other countries, a growing interest is now definitely shown.

The publicly-controlled schools own altogether about 200 radio receiving sets, and a further 300, owned by teachers, are kept in the schools. City schools alone have about 100 as compared with 11,500 in city schools of the United States. Most of the broadcasting of Departments of Education takes place outside of school hours and is intended particularly to help children taking high school studies in small schools where the teacher's time is mainly occupied with elementary pupils. This is the situation in Manitoba and Saskatchewan. In Nova Scotia the Department of Education broadcasts for reception in the schools. Previously this was undertaken once a week, but has been carried on daily since the fall of 1937. In all of Canada, fourteen city school systems and 100 schools outside of cities receive radio programs regularly in school—a rather small number in comparison with 6,500 listening schools in Great Britain. Phonographs outnumber radios in Canadian schools nearly ten to one; there are about 4,500, and more than 80 p.c. of them are owned by the schools. Both phonographs and radios are relatively much more numerous in the schools of the Prairie Provinces than elsewhere.

Canadian schools own about 260 motion picture projectors, and a further 100, owned mainly by teachers, are used in the schools. Fewer than 200 motion picture projectors in the schools of cities alone are to be compared with more than 10,000 in the city schools of the United States. Allowing for population differences they are about four times as numerous in the United States as in Canada, and in France they are seven or eight times as numerous. Difficulty in obtaining access to a satisfactory supply of films is mentioned by many school authorities as an obstacle to greater use of motion pictures in Canadian schools. To help in overcoming this obstacle, the Departments of Education in Nova Scotia and Quebec are establishing libraries of films for loaning to schools.

Another special service offered by the Departments of Education in six of the nine provinces is correspondence courses for children living in remote areas out of reach of a school. In Saskatchewan more than 6,000 children taking high school studies in small rural schools are helped by correspondence lessons from the Department. Ontario conducts a unique type of school, illustrated on another page, for children in northern areas. The correspondence courses are in some cases followed by children physically handicapped who are unable to attend school. The larger cities in most of the provinces conduct special classes in the ordinary schools for mentally retarded children, and in some cases for children with defective hearing, sight, and other physical handicaps. This side of the educational system is particularly well developed in Ontario, where it has been extended

into rural communities. Children in all provinces who are blind or deaf are educated in special residential schools at provincial expense. Institutions for feeble-minded and delinquent children are also provincially conducted.

Native Indian children are educated in special schools administered by the Dominion Government, at which attendance is compulsory to the age of 16 years. Practically half of the 18,000 Indian children are enrolled in boarding schools operated by church organizations, at which attendance can be more regular and training more thorough than in small day schools. Training for occupations is particularly stressed in the larger schools.



New Anglian Residential School at Aklavik.—This school replaces one that was maintained principally for Eskimo pupils, at Shingle Point on the Arctic Coast, and accommodates white, Eskimo, and Indian children.

Courtesy, Department of Mines and Resources.

Technical and vocational training continues to receive emphasis in most of the larger cities, but three provinces—Manitoba, Nova Scotia, and Prince Edward Island—are still without any day technical schools at the secondary level. There are increasing indications, too, of a conviction among educators that it is not enough to offer technical courses, but that there should be a closer linking together of the schools and industry, with vocational guidance for the young people as they go through school. In the past twenty years Canadian industry has absorbed only the youth who have come of age in eighteen years, and in the past ten years only those who have come of age in nine years. In other words, it has been 10 p.c. short of absorbing the biological supply; this 10 p.c. have remained in the schools. In addition to those staying in school is the further large number who have fallen into idleness between school and their first job, or by reason of having made a mistaken or unfortunate start in employment; these are the young people who will be helped by the youth-training projects being undertaken jointly by the Dominion and Provincial Governments.

At the university level there has been practically no change in total attendance for several years. This is in marked contrast with earlier post-war years when the increase was very rapid. Nearly 3 p.c. of the young people growing up in Canada to-day become graduates of a university—about 4 p.c. of the young men and 1½ p.c. of the young women. The proportion receiving a degree in Arts or Science is nearly double what it was fifteen years ago, but in several of the professions the increases have not kept pace with the increase in population, and in a few the annual number of graduates has definitely fallen. The population is larger per doctor or clergyman now than it was a generation ago, and is nearly double in some provinces what it is in others: the number of veterinarians has actually fallen while live stock has become much more numerous.

Some of the most rapid increases in professional workers have been in the several branches of engineering. Native-born Canadians have met little more than half of the demand for mining, mechanical or electrical engineers, designers, draughtsmen and architects, and only about two-thirds of the demand for civil engineers, surveyors, chemists, assayers, and metallurgists. Much the greatest outside source of supply has been the British Isles, while the United States has supplied larger numbers than the continent of Europe. Europe has contributed its greatest proportions to Canadian professionals among clergymen, artists, and musicians, and only in these fields has its contribution exceeded that of the United States. Yet, by racial origins, music and art are two of the most "English" of the professions in Canada, and theology one of the most "French". Journalism is one of the most "British", in the sense that persons of English, Irish, and Scottish origins occupy a considerably greater share of positions in journalism than in other occupations. Considering all the professions together, persons born in the British Isles occupy more than their share of positions, i.e., considerably higher percentages of the total than in other occupations, while the opposite holds for immigrants from Europe. A general survey of the occupational fields for which the universities train was published by the Dominion Bureau of Statistics in 1937 under the title "Supply and Demand in the Professions in Canada".

In the field of adult education notable advances were made in 1935 and 1937. A full-time director was engaged for the Canadian Association for Adult Education, and classes of the Workers' Educational Association, formerly confined to Ontario, were organized in all but two of the other provinces. Attendance at evening classes in technical schools showed considerable gains after falling off in the earlier 1930's. An Adult Education League was formed in Prince Edward Island in close conjunction with the provincial library system, its methods of operation resembling those of the now well-established system of study groups of Nova Scotia centering in St. Francis Xavier University. The same scheme of adult study made substantial beginnings in New Brunswick. The established work of University Extension Departments was maintained and certain new services tried, such as a summer school of rural life in Alberta.

CHAPTER XIX

MISCELLANEOUS STATISTICS

The National Research Council

In Canada the organization of research as a function of Government dates back to the Great War. In 1916, Canada, following the example of Great Britain, established an Honorary Advisory Council for Scientific and Industrial Research. It was not contemplated at that time that this Council should set up laboratories of its own; it was to direct and assist important researches and to act as an agency for promoting collaboration between those already carrying on research in the established laboratories of the several departments of the Dominion and Provincial Governments, in the universities, and in industry.

Even with the limited facilities at its disposal in the earlier years, the Council made a substantial contribution to the development of research in Canada, but it was soon realized that further provision was essential if satisfactory progress was to be made. The matter was repeatedly considered in Parliament and eventually the Research Council Act was passed in 1924; the construction of laboratories followed. The new building was opened in 1932.

The National Research Council to-day consists of 15 members selected for terms of three years from among men prominent in scientific work in Canadian universities or in Canadian industry. The Council is required by statute to meet at least four times annually in Ottawa. There is a President appointed by the Governor in Council for a term of years, who reports directly to the Committee of the Privy Council on Scientific and Industrial Research, of which the Minister of Trade and Commerce is the Chairman. The Council's membership is broadly representative of all parts of Canada and includes persons qualified to speak authoritatively on points of science, industry, business, and finance.

The staff of the Council is grouped in a number of divisions including: Research Information, Biology and Agriculture, Chemistry, Physics and Electrical Engineering, and Mechanical Engineering (including hydraulics and aeronautics).

The Council has also developed a system of assisted researches in order to make use of the facilities for research which exist in a number of Canadian universities. By this means, projects of importance which otherwise could not be undertaken are carried on under the competent direction of members of a university staff.

Encouragement of postgraduate training in scientific research is given chiefly in the graduate schools of Canadian universities through a system of scholarships provided annually by the Council. For the year 1937-38, 47 scholarships were awarded.

Accounts of the several researches in progress in the various divisions of the laboratories at Ottawa and projects, to which financial aid is given, are to be found in the report of its activities issued annually by the Council.

Public Health, Hospitals and Charitable Institutions

In Canada, generally speaking, the administration of public health activities and the establishment and maintenance of such institutions is in the hands of the various Provincial Governments, under the powers given them in Sec. 92 of the British North America Act of 1867.

Exercising particular jurisdiction over some phases of the general health of the people of the Dominion is the Department of Pensions and National Health of the Dominion Government, while the Dominion Council of Health acts as a clearing house on many important questions. The public health activities of the Dominion Government include the following divisions: Quarantine, Immigration, Leprosy, Marine Hospitals, Sanitary Engineering, Proprietary or Patent Medicine, Laboratory of Hygiene, Food and Drugs.

In classifying the various types of social service in Canada, certain broad and well-established groups manifest themselves. These divisions are: (1) Hospitals, Dispensaries and Out-patient Departments; (2) Mental Hospitals and Institutions for the Feeble-minded and Epileptic; (3) Institutions for the Blind, Deaf and Dumb; (4) Homes for Adults, and Homes for Adults and Children; (5) Orphanages, Child-caring Institution, Day Nurseries, Child-placing Agencies, and voluntary organizations.



The Interior of a Roman Catholic Hospital in the Northwest Territories.

Courtesy, Rt. Rev. Bishop Breynat, Fort Smith, N.W.T.

The most familiar of all public institutions established to administer and foster the general health of the community is the general public hospital common to all cities and towns and prosperous rural communities. Where public hospitals cannot be maintained in remote districts, private

hospitals and maternity homes and Red Cross out-post hospitals or rural clinics in charge of district nurses are established. These services are further supplemented by the work of the Victorian Order of Nurses, a national visiting nursing association with 90 branches in Canada. In 1936 the Victorian Order of Nurses paid 727,400 visits to 82,021 cases, of which 12,309 were obstetrical cases.

Numbers and Bed Capacities of Hospitals and Charitable Institutions in Canada, by Provinces, 1936

Type of Institution	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Canada
Population ('000's omitted).....	92	537	435	3,096	3,690	711	931	772	750	11,028
HOSPITALS										
Public Hospitals—										
General..... No.	4	23	16	52	110	33	74	76	68	463 ¹
Beds	220	1,469	1,240	8,944	11,279	2,512	3,161	3,560	4,639	37,222 ¹
Women's (only)..... No.	—	2	1	5	4	—	3	2	1	18
Beds	—	64	20	805	313	—	104	125	55	1,486
Pædiatric..... No.	—	1	—	3	2	1	1	1	—	11
Beds	—	80	—	446	475	125	28	38	100	1,292
Isolation..... No.	—	1	—	4	7	2	1	3	—	18
Beds	—	54	—	744	675	315	6	99	—	1,893
Convalescent..... No.	—	—	—	3	1	1	—	—	—	5
Beds	—	—	—	259	35	50	—	—	—	344
Tuberculosis..... No.	1	2	3	8	13	4	3	1	1	36
Beds	60	359	410	1,313	3,254	712	723	215	332	7,378
Red Cross..... No.	—	—	—	—	27	—	6	—	1	34
Beds	—	—	—	—	311	—	64	—	4	379
Incurable..... No.	—	—	1	1	7	1	2	5	1	18
Beds	—	—	33	574	1,028	330	165	233	170	2,533
Other..... No.	—	—	—	5	1	—	—	—	—	6
Beds	—	—	—	1,012	25	—	—	—	—	1,037
Totals, Public..... No.	5	29	21	81	172	42	90	88	74	609 ¹
Beds	280	2,026	1,703	14,097	17,395	4,044	4,251	4,270	5,300	53,564 ¹
Private Hospitals..... No.	—	4	7	33	68	7	63	50	27	259
Beds	—	255	96	692	845	69	339	240	324	2,560
Dominion..... No.	—	4	3	5	7	3	1	5	4	32
Hospitals..... Beds	—	398	152	414	809	304	56	234	267	2,634
Mental Hospitals..... No.	1	16	1	9	16	4	2	4	4	57
Beds	275	2,126	1,025	11,469	13,050	2,272	2,600	2,092	2,455	37,364
Totals, All Hospitals..... No.	6	53	32	128	263	56	156	147	109	957 ¹
Beds	555	4,805	2,976	26,672	32,999	6,689	7,246	6,836	8,346	96,422 ¹
CHARITABLE AND BENEVOLENT INSTITUTIONS										
No.	6	48	28	126	173	30	10	12	21	454 ²
Beds	411	2,897	1,715	19,896	10,585	1,570	430	431	1,136	39,071 ²

¹ Includes 7 hospitals in Yukon and N.W.T. with 198 beds, but does not include 3 hospitals in Que., 1 in Man., and 3 in Yukon and N.W.T. which did not report. ² Does not include 5 institutions which did not report.

There were in operation in Canada in 1936, 900 hospitals for the sick, of which 609 were public, 259 private, and 32 Dominion. Public and private hospitals reported a total of 56,424 set up beds and cribs, 70·5 p.c. of which were occupied during the year. The total personnel of all public and private hospitals was 38,293. During the year 1936, 779,697 adults and children received a total of 14,574,180 days' care, an average stay of 18·6 days; there were 81,730 new-born infants under care for 1,024,415 days, an average stay of 12·5 days. Forty-one hospitals with organized out-patient departments reported 212,377 patients receiving 767,730 treatments; 11 reported treating 107,397 patients but did not report treatment; and 18 reported only treatments (861,388) given.



A Public Surgical Ward in the Vancouver General Hospital.—The hangings will effectively screen the beds, when required. The black bulbs are signal lights operated by a switch at the bed's head; a corresponding signal shows simultaneously in the nurses' office. At the far end is a sun porch accommodating 4 beds. This particular ward holds 30 beds.

Courtesy, Vancouver General Hospital.

Second to general hospitals are the institutions for persons suffering from mental diseases. The public hospitals for the insane, feeble-minded and epileptic are assisted in their care of indigent patients by provincial and municipal grants. In addition there are county and municipal institutions, psychopathic hospitals and a few Dominion and private institutions. The 57 mental hospitals have a normal capacity of 37,364 beds. On Dec. 31, 1936, these institutions reported 39,833 inmates. The total receipts for 1935, including government grants and fees from patients, were \$10,940,797 and the total expenditures \$9,206,970.

Homes or hospitals for incurables provide maintenance, nursing, medical and surgical aid to persons suffering from chronic and incurable diseases and the nature of the services given is such as to call for special reference. Many hospitals for incurables care not only for those suffering from incurable diseases but also for the aged, indigent, feeble-minded and epileptic. There are 18 of these institutions in operation. The average number of patients per day during 1936 was 2,230, the bed capacity 2,533, and the total number under treatment 3,427.

The number of charitable and benevolent institutions in Canada on June 1, 1936, was 459 (454 reported). Of the 459 institutions, 137 were for adults, 88 for adults and children, 118 were orphanages, 95 were children's aid societies, 6 juvenile immigration societies and 15 day nurseries. These institutions had under care on this date 14,681 adults and 33,413 children. The expenditures in connection with these institutions totalled \$9,224,205 and receipts amounted to \$8,860,547. The total number in care during the year 1935 was 65,899.

Royal Canadian Mounted Police

The Royal Canadian Mounted Police is a Dominion Government constabulary. It was organized in 1873 as the North West Mounted Police. In 1904, it became known as the Royal North West Mounted Police, and in 1920, the name of the Force was again changed to the Royal Canadian Mounted Police, and to it was assigned the duty of the enforcement of Dominion legislation in the whole of Canada. The former Dominion Police, with headquarters at Ottawa, was absorbed at that time.



The Honourable Vincent Massey, High Commissioner for Canada, Reviewing the R.C.M.P. Coronation Contingent, May, 1937.—Canadians will remember the splendid impression which the "Mounties" made in the Coronation procession.

Courtesy, Royal Canadian Mounted Police.

At the present time, the R.C.M. Police is responsible throughout Canada for the enforcement of the laws against smuggling by land, sea, and air. It enforces the provisions of the Excise Act, is responsible for the suppression of the traffic in narcotic drugs, enforcement of the Migratory Birds Convention Act, and assists the Indian and Immigration Branches of the Department of Mines and Resources, the Fisheries Department and numerous other Dominion departments in executing the provisions of their respective Acts, and in some cases in administrative duties. The Force is responsible for the protection of government buildings and dockyards. It is the sole police force in the Yukon and the Northwest Territories.

The Marine Section of the Force, which, in conjunction with the land force, is engaged in the prevention of smuggling, had, on Mar. 31, 1937, a

strength of 220 officers and men, distributed among twenty-three cruisers and patrol boats on the Atlantic and Pacific coasts and inland waters.

The Force is controlled and administered by a Minister of the Crown (at present the Minister of Justice), and it may be employed anywhere in Canada. From a Force of 300 in 1873, it had a strength on Mar. 31, 1937, of 2,573. Means of transport at the latter date consisted of 209 horses, 512 motor vehicles and 397 sleigh dogs.

Under the R.C.M. Police Act any province may enter into an agreement with the Dominion Government for the services of the Royal Canadian Mounted Police to enforce provincial laws and the Criminal Code upon payment for its services, and at the present time such agreements are in force with the provinces of Prince Edward Island, Nova Scotia, New Brunswick, Manitoba, Saskatchewan, and Alberta.

The Force is divided into 14 Divisions of varying strength distributed over the entire country. The term of engagement is five years for recruits, with re-enlistment for one year or three years. The officers are commissioned by the Crown. Recruits are trained at Regina, Sask. The course of training covers six months, and consists of drill, both mounted and on foot, physical training, including instruction in wrestling, boxing and jiu-jitsu. Special attention is paid to police duties, both Dominion and provincial, and detailed lectures are given in these, including court procedure. Instructional courses for promotion are held, and, where practicable, an annual refresher course of training is given.

In 1937, a "Reserve" strength of 300 men was authorized by Parliament, and during the months of July and August, 1937, 300 "Reservists" were given training at Fredericton, N.B., Ottawa, Ont., Regina, Sask., Vancouver, B.C., and other points, and in future these "Reservists" will be the principal source from which recruits for the Force will be drawn.

National Defence

Militia.—Canada is organized into 11 military districts, each under a Commander and his District Staff.

The Militia of Canada is classified as active and reserve, and the active is subdivided into permanent and non-permanent forces. The Permanent Force consists of 14 regiments and corps of all arms of the service,



The New Bren .303-inch Light Machine Gun which has been Approved for Service in the Canadian Militia.

Courtesy, Department of National Defence.

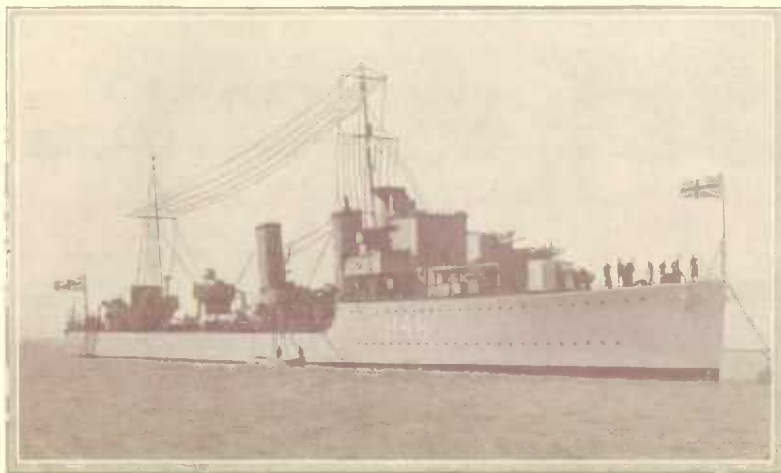
with an authorized establishment limited to 10,000, but at present the strength is about 4,000. The Non-Permanent Active Militia is made up of cavalry, artillery, engineer, machine-gun, signalling, infantry, and other corps. The total establishment of the Canadian Non-Permanent Active Militia totals 7,015 officers and 78,967 other ranks.

The Reserve Militia consists of such units as may be named by the Governor in Council.

All male inhabitants of Canada, of the age of eighteen years and upwards, and under sixty, not exempt or disqualified by law, and being British subjects, are liable to service in the Militia.

The reserve of the Active Militia consists of: (1) reserve regimental depots; (2) corps reserves and corps reserve lists of the Non-Permanent Active Militia; (3) reserve of officers.

The appropriation for the Militia for the year ending Mar. 31, 1938, is \$18,690,928, as compared with an appropriation of \$12,018,926 for 1936-37.



H.M.C.S. *Fraser*, Commissioned in the Royal Canadian Navy in February, 1937. H.M.C.S. *St. Laurent*, a sister ship, was commissioned at the same time.

Navy.—The Royal Canadian Navy was established in 1910. The authorized complements are: 117 officers and 1,222 men of the Permanent Force (Royal Canadian Navy); 70 officers and 430 men of the Royal Canadian Naval Reserve; and 97 officers, 19 P.O. instructors, and 1,096 men of the Royal Canadian Naval Volunteer Reserve. Ten appointments of officers of the Royal Canadian Naval Volunteer Reserve are reserved for graduates of the Royal Military College who have had naval training during their Royal Military College course. The vessels at present maintained in commission are: the destroyers *Saguenay* and *St. Laurent*, based on Halifax, N.S.; the destroyers *Skeena* and *Fraser** and the mine-sweeper *Armentières*, based on Esquimalt, B.C. H.M.C. Dockyards are at Halifax and Esquimalt. Naval depots are maintained at both bases, and are used as training headquarters for the personnel of the R.C.N., R.C.N.R., and the R.C.N.V.R.

The appropriation for naval services for 1937-38 was \$4,486,810.

* On Dec. 1, 1938, the destroyers *Champlain* and *Vancouver* were paid off and dismantled under the provisions of the London Naval Treaty of April 22, 1930. The ships were sold for breaking up.

Air Force.—The Royal Canadian Air Force is classified as active and reserve, the active Air Force being subdivided into permanent and non-permanent. The Force controls and administers all Air Force training and operations, and carries out certain operations on behalf of other Government Departments.

The strength of the Royal Canadian Air Force on Sept. 1, 1937, was: officers (permanent) 166, (non-permanent) 74, (reserve) 166; airmen (permanent) 1,423, (non-permanent) 495; aircraft 165.

The appropriation for the Royal Canadian Air Force (including money for civil government operations) for the year 1937-38 was \$11,752,650. The total flying time for the year 1936-37 was 16,927 hours, 15 minutes.

The appropriation for out-of-pocket expenses incurred by the Royal Canadian Air Force in connection with civil government air operations totalled \$361,000 for the fiscal year 1937-38. This expenditure was mainly for photography, and in the year 1936-37, 30,000 square miles were covered with oblique, and 8,350 square miles with vertical photography.

Administration of Aborigines and Dominion Lands

Indians.—Indians are minors under the law and their affairs are now administered by the Indian Affairs Branch of the Department of Mines and Resources under the authority of the Indian Act. The system of reserves, whereby particular areas of land have been set apart solely for the use of Indians, has been established in Canada from the earliest times. It was designed to protect the Indians from encroachment, and to provide a sort of sanctuary where they could develop unmolested until advancing civilization had made possible their absorption into the general body of the citizens. Reserves have been set aside for the various bands of Indians throughout the Dominion, and the Indians located thereon are under the supervision of the local agents of the Branch. The activities of the Branch, as guardian of the Indians, include the control of Indian education, the care of health, etc., the development of agriculture and other pursuits among them, the administration of their funds and legal transactions and the general supervision of their welfare. The local administration of the Indian bands on the reserves is conducted through the Branch's agencies, of which there are well over 100.

The Indian Act provides for the enfranchisement of Indians. When an Indian is enfranchised he ceases to be an Indian under the law. In the older provinces, where the Indians have been longer in contact with civilization, many are becoming enfranchised. Great discretion, however, is exercised by the Government in dealing with this problem. Indians who become enfranchised lose the special protection attached to their wardship, so that premature enfranchisement must be avoided.

Eskimos.—The Eskimos of Canada are found principally on the northern fringe of the mainland and on islands in the Arctic Archipelago and in Hudson bay, although in the Baker Lake-Chesterfield Inlet area on the west side of Hudson bay there are bands of Eskimos who are essentially an inland people, and subsist chiefly on caribou. The diet of the coast Eskimos is largely marine mammals and fish, varied at times by caribou obtained from the interior during the seasonal migrations of these animals. The skins of the caribou are used for winter clothing.

The administrative care of Eskimos outside of the organized provinces devolves upon the Lands, Parks and Forests Branch of the Department of Mines and Resources, which, by regulative measures (including the setting aside of game preserves where only natives may hunt), conserves the natural resources necessary to their subsistence. To augment these resources the Branch imported in 1935 a substantial herd of reindeer. Contact with the Eskimos is maintained through permanent stations in the Eastern, Central, and Western Arctic, at a number of which medical



Eskimos Unloading Supplies from the Hudson's Bay Company's Supply Ship, S.S. *Nascopi*, at Wolstenholme, P.Q.—Advantage is taken of the annual voyage of the *Nascopi* to relieve personnel and furnish supplies to Government posts in the Eastern Arctic Archipelago. The ship sails as far north as Ellesmere Island for this purpose.

Courtesy, Hudson's Bay Company.

officers are located, and by means of the annual Canadian Eastern Arctic Patrol by steamship. Law and order in all regions in Canada inhabited by Eskimos is maintained by the Royal Canadian Mounted Police.

Northwest Territories.—The Northwest Territories Act (c. 142 R.S.C. 1927) provides for a territorial government composed of the Commissioner of the Northwest Territories, the Deputy Commissioner, and five Councillors appointed by the Governor General in Council. The Commissioner in Council has power to make ordinances for the Government of the Territories under instructions from the Governor General in Council or the Minister of Mines and Resources.

The administration of the various Acts, Ordinances, and Regulations pertaining to the Northwest Territories is supervised by the Director of



Moraine Lake, Glacier National Park.

the Lands, Parks and Forests Branch, Department of Mines and Resources. A Departmental Agent who is also Superintendent of Wood Buffalo National Park, Dominion Lands Agent and Mining Recorder, and Stipendiary

Magistrate for the Mackenzie District is stationed at Fort Smith. A Medical Officer at Aklavik acts as Departmental Agent for the lower Mackenzie and the Western Arctic, and a member of the Royal Canadian Mounted Police at Port Radium is Dominion Lands Agent and Mining Recorder for the Great Bear Lake Mining District. Medical Officers are stationed at Fort Smith, Resolution, Simpson, Good Hope, Aklavik, Port Radium (part time), Chesterfield, and Pangnirtung (Baffin Island).

National Parks.—Among Canada's greatest tourist attractions are her National Parks, areas of outstanding scenic beauty which have been set aside for the use and enjoyment of the people. These national reservations which cover an area of approximately 12,525 square miles differ widely in character and vary in purpose. They conserve the wild life of Canada under natural conditions, preserve in its primitive state the grandeur of our scenic regions and commemorate persons and events of outstanding importance in the nation's history. They may be divided into four groups: the large scenic and recreational parks of the Rockies, Selkirks and the prairies; the smaller recreational parks of Eastern Canada; the wild animal parks; and the national historic parks.

The first group includes Banff, Jasper, and Waterton Lakes Parks in Alberta; Kootenay, Yoho, Glacier, and Mount Revelstoke Parks in British Columbia; Prince Albert Park in Saskatchewan; and Riding Mountain Park in Manitoba. In Ontario there are three smaller recreational parks, Point Pelee, Georgian Bay Islands, and the St. Lawrence Islands Parks. Recent additions to the system of recreational parks are the Cape Breton Highlands Park in Nova Scotia and a shore-line park area on the northern coast of Prince Edward Island.

The wild animal parks are the Buffalo and Elk Island Parks in Alberta, noted for their herds of buffalo, and the Nemiskam and Wawaskey Parks, also in Alberta, which are sanctuaries for prong-horned antelope. Fort Anne Park in Nova Scotia and Fort Beauséjour in New Brunswick are the outstanding historic parks.

Further information concerning the National Parks of Canada may be obtained from the Lands, Parks and Forests Branch, Department of Mines and Resources, Ottawa, Canada.

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