Published by Authority of the Rt. Hon. C. D. Howe, M.P.,
Minister of Trade and Commerce

A FACT A DAY ABOUT CANADA

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FROM THE

DOMINION BUREAU OF STATISTICS

FIFTEENTH SERIES

1949

CANADA

Number 1

25 cents the series

C O N T E N T S

No. 1 - Newfoundland: Our Newest Province

Fifteenth series
Issue No. 1.

Newfoundland -- Canada's newest province -- consists of 42,734 square miles on the Island of Newfoundland itself, and an additonal 112,000 square miles of rugged terrain on the mainland of the North American continent. The latter territory is known as Labrador and its precise boundaries were defined by a Privy Council decision of 1927. The new province thus has a total area of 154,734 square miles and ranks seventh in size in the Dominion, being larger than any of the original three Maritime Provinces and smaller than any of the others.

The Island is roughly in the shape of an equilateral triangle with each of the three sides measuring approximately three hundred miles in length. The Island's coast line measures approximately 6,000 miles and is dotted with no less than 1,300 small settlements each containing as a rule from 10 to 50 families. These hamlets are accessible only by water and are dependent on the fishing industry for their existence. A census taken in 1945 placed the population at the time at 321,819, of whom only a handful inhabit the Labrador mainland.

No. 2 - Newfoundland: Some Salient Facts

Prior to confederation with Canada, Newfoundland to a greater extent than any other country in the world depended for her very existence on foreign trade. With very little agriculture and with only a very small manufacturing industry, she imported nearly all the consumer goods used by her people, paying for them through the export of the products of her three great primary industries, fishing, forestry and mining.

Neither the climate nor the soil lend themselves to intensive agricultural operations and what farming there is, is chiefly of the subsistence type. No less than 16,000 of the 36,000 persons, who in the most recent census reported themselves as cultivators of soil, farm less than one acre of ground each. These are, of course, persons engaged principally in some other occupation, usually fishing or logging, who grow a few vegetables to augment their purchases of staple foodstuffs, a step made necessary by the comparatively high cost of foods, nearly all of which are imported either from Canada or from the United States.

Confederation with Canada involves Newfoundland in no currency difficulties since the Canadian dollar has been the sole legal tender since 1894. Four of the largest Canadian banks already maintain 35 branches throughout the island.

No. 3 - Newfoundland: Population by Age and Sex

Since the turn of the century, the population of Newfoundland (including Labrador) has grown from 220,984 in 1901 to 321,819 in 1945, an increase of 100,835 or over 45 per cent. From 1935 to 1945 it increased by 32,000 or 11 per cent. The 1945 total was approximately three and one-half times that of Prince Edward Island, about one-half that of Nova Scotia, and about one-tenth that of Quebec.

In the 10-year period since the taking of the 1935 Census the districts of Newfoundland showing the largest increases in population were Grand Falls, Humber and St. George's - Port-au-Port, each of which increased by more than one-third.

Eight centres in 1945 had a population of over 2,500. The population within the incorporated limits of St. John's City numbered 44,603, as compared with 39,886 in 1935. However, if several adjoining settlements and sections are included, the population of the Greater St. John's area numbered 57,496 in 1945. The populations of

the remaining centres of over 2,500 in 1945, with 1935 figures in brackets, were as follows: Bell Island, 8,171 (6,157); Bishop's Falls, 2,522 (1,882); Botwood, 2,744 (1,090); Carbonear, 3,472 (3,367); Corner Brook, 8,711 (6,374); Grand Falls, 4,552 (4,244); and Windsor, 2,772 (1,447).

Figures on the sex distribution of the population show that the males have outnumbered the females by a slight margin, the proportion remaining almost constant since the start of the century. There were 164,595 males compared with 157,224 females in 1945, 148,721 as against 140,867 in 1935, and 112,697 males compared with 106,910 females in 1901. The proportion of males to females was 51.1 to 48.9 in 1945, 51.4 to 48.6 in 1935, 51.0 to 49.0 in 1921, and 51.0 to 48.4 in 1901.

No. 4 - Newfoundland: Households and Families

There were approximately 62,000 households in Newfoundland and Labrador at the time of the 1945 Census. Of these, 82 per cent consisted of single families with or without relatives, lodgers, servants, etc. Thirteen per cent consisted of households where two or more families were living together while the remaining five per cent were classified as non-family households. The average number of persons per household was 5.1 for Newfoundland as a whole, although the most common household size was four persons.

The number of households and the average number of persons per household in the four largest centres of population were as follows: St. John's City -- 8,095, 5.3; Corner Brook -- 1,531, 5.6; Bell Island -- 1,435, 5.7; Grand Falls and Windsor -- 1.247, 5.8.

In 1945 there were 68,000 families in Newfoundland and Labrador averaging 4.4 persons per family. This compares with 60,569 families averaging 4.7 persons per family at the time of the 1935 Census. Among the four largest centres, the 1945 figures for total families and average size of family are as follows: St. John's City -- 9,259, 4.1; Corner Brook -- 1,720, 4.8; Bell Island -- 1,547; 5.1; Grand Falls and Windsor -- 1,436, 4.8.

Approximately 156,000 children under 25 years of age were living at home with their families in 1945. Of these, 110,581 were under 15 years of age, and 45,694 were in the age group 15-24 years. Of this latter group 17 per cent were attending school, 59 per cent were gainfully employed, and the remaining 24 per cent were neither at school nor gainfully occupied.

No. 5 - Newfoundland: Religious Denominations

Nearly nine-tenths of the population of Newfoundland are adherents of three religious denominations, the Roman Catholic Church, the Church of England and the United Church. Thirty-three per cent in that year were Roman Catholic, 31 per cent adherents of the Church of England, and 25 per cent of the United Church.

The numbers of adherents of the six numerically largest religious denominations in 1945, with 1935 figures in brackets, were as follows: Roman Catholic, 106,006 (93,925); Church of England, 100,878 (92,709); United Church, 80,094 (76,134); Salvation Army, 22,571 (18,054); Pentecostal, 7,558 (3,721); Congregational and

Presbyterian, 1,548 (2,384); and other denominations, 2,886 (2,613).

In the quarter of a century since the taking of the 1921 Census, the number of persons reporting adherence to the Church of England increased from 84,665 in 1921 to 100,878 in 1945, Roman Catholic from 86,576 to 106,006, Salvation Army from 13,023 to 22,571, and the United Church (classed as Methodist in 1921) from 74,205 to 80,094.

Church of England followers were relatively most numerous in the Districts of Burgeo La Poile where they comprised 84 per cent of the population; St. Barbe, 70 per cent; Fortune Bay and Hermitage, 65 per cent; and Harbour Grace, 64 per cent. Roman Catholics comprised 98 per cent of the population in the District of Ferryland; 92 per cent in Placentia and St. Mary's; 77 per cent in St. George-Port-au-Port; 56 per cent in Harbour Main - Bell Island and in Placentia West. Adherents to the United Church comprised 58 per cent of the population in Carbonear-Bay de Verde and 52 per cent in Twillingate.

No. 6 - Newfoundland: Gainfully Occupied Population

Newfoundland had a gainfully occupied population, 14 years of age and over, totalling 112,508 at October 1, 1945. There were 96,000 males reported as gainfully occupied as compared with 77,730 in 1935, representing an increase of 23.5 per cent over the 10 years. The number of gainfully occupied females of the same age classification was 16,508 in 1945, showing an increase of 50.3 per cent as compared with 10,980 in 1935.

Of the gainfully occupied males, 38,063 or 39.6 per cent of the 1945 total were engaged in an employer or own account capacity. This includes persons who owned or operated a farm, mine, fishing gear, or other business such as a store, repair shop, restaurant, etc., or who were engaged in a trade or profession such as carpenter, plumber, doctor, dentist, etc., with or without paid assistance. The majority of gainfully occupied males, numbering 56,071 or 58.4 per cent, however, were wage-earners, i.e., employed by others on a wage, salary, commission, or piece-rate form of payment. On the other hand, 14,939 or 90.5 per cent of the gainfully occupied females were reported as wage-earners at the 1945 census. Only 1,866 males who assisted in the operation of a farm, store, etc., received no stipulated money payment for their services.

Primary industries absorbed 46,483 or 48.4 per cent of the gainfully occupied males at the 1945 census date. Fishing was, of course, the chief primary industry and accounted for 31,527 or almost one-third of the total gainfully occupied males. Another 11,347 males were employed in services, chiefly the armed forces; 9,293 in manufacturing, chiefly pulp and paper mills; 8,065 in transportation and communication, mainly in water transportation; and 5,278 in trade and finance.

Over 63 per cent of the gainfully occupied females were found in service industries. Of the 10,509 thus employed, 4,650 were in domestic service and 3,469 in professional service industries. Trade and finance industries provided employment for 2,946 females and manufacturing for 1,295. The remaining gainfully occupied females were found in transportation and communication, fishing, etc. industries, none of which accounted for any significant number.

No. 7 - Newfoundland: Educational Facilities

Educational facilities in Newfoundland were first provided by the various religious denominations and education is still, with few exceptions, based on the denominational system, although today it is largely financed from public funds.

The children, in the majority of cases, attend schools of their own denomination. There is a uniform and common teacher-training programme, a common curriculum, and, with few exceptions, common text books. The system of external examinations is common to all schools and a uniform Government scale regulates the grand allocation to school boards and the minimum salaries paid to teachers. Some of the largest schools in the country are interdenominational and are known as common or amalgamated schools. In 1942, an Act was passed providing for the free and compulsory education of children between the ages of 7 and 14.

Teacher training is provided at Memorial University College, a state and non-sectarian institution. This college also provides for the first two years of the degree course in arts and science, and for three years in engineering.

Great progress has been made in recent years in raising educational standards in Newfoundland, particularly during the war years when improved public finances enabled the government to make larger contributions. Since 1935, the annual cost of maintaining the educational services has more than quadrupled.

No. 8. - Newfoundland; Fishing Industry

Traditionally, the chief means of livelihood of the people of Newfoundland has been the fisheries. Until the end of the 19th century, the Island's economy was based exclusively upon the export of fish and fish products. Since then, following the construction of a railway across the Island and the increased accessibility of forest and mineral resources, considerable economic diversification has taken place and the export value of newsprint now approximates that of the fisheries. Exports of fishery products comprised 43 p.c. of Newfoundland's exports in the fiscal year 1946-47 and 36 p.c. in the fiscal year 1947-48.

The paramount importance of the fishery in Newfoundland's economic life lies in the numbers of the population dependent upon it, some 28 p.c. of all gainfully occupied Newfoundlanders being employed in the fishing industry as compared with 7 p.c. in forestry and 3 p.c. in mining.

Cod, and particularly dried salt cod, which holds first place in the fishing industry, has steadily improved in quality in recent years due in large measure to improved standards of packing and inspection introduced by the Newfoundland Fisheries Board which was set up by the Government in 1936. Competitive selling was replaced by a group marketing procedure under the supervision of the Board, which led to the establishment, in 1947, of the Newfoundland Associated Fish Exporters Limited (NAFEL) which is now the sole selling agency for Newfoundland salt cod. The principal market for salt cod is the West Indies.

Modern refrigeration facilities have, in the past ten years, given rise to a growing recognition of the United States and Canada as markets for fresh frozen fish, and currency exchange difficulties have fostered this trend by restricting the markets for salt cod. Other products of the Newfoundland fishing industry are seals, salmon, lobster, halibut, herring and whales. Fish meals and oils are produced in considerable quantity and there is a growing canning industry.

No. 9 - Newfoundland: Her Forests

The forests of Newfoundland, comprising some 17,000 square miles, or about 46 p.c. of the land area (excluding Labrador), are one of her most important resources, supporting an industry which enjoys second place (after fisheries) in the economy. It is estimated that about 17 p.c. of the forested area, however, is not of present marketable value, due to inaccessibility and the unsuitability of some stands.

Woods operations and forest products manufactures give employment to about 12 p.c. of all gainfully occupied males, and exports of forestry products account for about 40 p.c. of Newfoundland's total, surpassing, in the fiscal year 1947-48, the export value of fishery products. The chief markets are the United States and the United Kingdom.

Pulp and paper (newsprint) is Newfoundland's most important forest industry. Large areas of forest are held on long-term lease by two pulp and paper companies which operate mills, one at Grand Falls and one at Corner Brook. These two towns have, as a consequence, developed into thriving communities supporting satellite industries.

Some 2,000 square miles of forest area is taken up by small operators of nearly 900 sawmills which produce lumber chiefly for local use. The Government has reserved a three-mile strip as a source of fuel and lumber for the inhabitants of the fishing settlements. Much of the coast is bare and rocky and there has been considerable depletion of this forest.

No. 10 - Newfoundland: Her Mining Industries

Mining ranks third (after fishery and forestry products) among Newfoundland's basic industries. The value of mineral production in 1948 reached an all-time high of $20,000,000 as compared with the previous record of $15,711,000 established in 1947. This industry provides a living for some 4,000 workers whose wages and salaries in 1948 amounted to $7,253,000. Except for a small amount of limestone, all minerals produced are exported and accounted, in the year 1948, for 20 p.c. of total exports.

The chief minerals are iron ore at Bell Island on the east coast and lead, copper and zinc concentrates at Buchans in the interior. The Bell Island deposits are of good quality but relatively costly as a source of high grade steel, due to phosphorus content. Buchans' operations have been carried on since 1927 and have contributed materially to the industrial growth of that part of the Island.

Fluorspar, which is used as a flux in the manufacture of steel and aluminum, is produced at St. Lawrence on the Burin Peninsula, and a large limestone deposit is located at Aguathuna, on the west coast. The principal market for both these minerals, as well as for the iron ore produced at Bell Island, is the steel mill at Sydney, Nova Scotia, whilst practically all lead, copper, and zinc concentrates are exported to the United States.

Recent discoveries of large additional deposits of concentrates in the Buchans area, and of a very extensive body of iron ore in Quebec boundary region of Labrador, indicate that the mining industry will continue to play an important part in the Island's economy.

No. 11 - Newfoundland: Her Agriculture

Agriculture plays a relatively minor part in Newfoundland's economy, rating fourth place (after fisheries, forestry, and mining) among the Island's basic industries. The climate is not well suited to the production of any but the hardier crops, and the amount of arable soil and pasture land is limited. Most food is imported, comprising about a third of the Island's total imports annually. Two-thirds of the food imports are from Canada and most of the remainder from the United States.

In the past fifteen years, an active policy of encouragement of agriculture has been carried on making use of field advisors, soil surveys and subsidization of livestock improvement. A laboratory and a demonstration farm are maintained in the St. John's area and a personnel training scheme for general and fur farming has been introduced.

About a third of the Island's improved acreage, including pasture, is to be found on the west coast, the southern part of which is better suited than any other region for agriculture. The largest and steadiest market, however, is the St. John's area on the east coast, which supports a neighbouring farming community of some size, mostly of small holdings.

In the rest of the Island, cultivation is mainly on a part-time family-plot basis by fishermen and loggers. The 1945 Census of Newfoundland discloses that only 8 p.c. of persons cultivating the land were full-time farmers, the remainder being fishermen and others.

No. 12 - Newfoundland: Railways and Shipping

In the centuries while Newfoundland remained a fishing colony, the sea provided a natural highway and the only means of transportation for the inhabitants living in settlements along the coast. Towards the end of the 19th century, however, the exploitation of other resources in the interior began to assume greater importance. The construction of a trans-insular railway by a private company was begun in 1881 and completed in 1896. In 1923, being in financial difficulties, the railway was taken over by the Government.

The railway connects St. John's with various parts of the Island. The main line runs from St. John's to Port-aux-Basques and there are four branch lines, three of which are operating. In addition, there are several company-operated spur lines. The total railway mileage is approximately 700. The railway operates, in addition, several steamships which are used in coastal services carrying mail, freight, and passengers between points in the Island, as well as in Labrador. Service is also maintained between Port-aux-Basques and North Sydney and between Corner Brook and North Sydney.

Climatic conditions and the nature of the terrain create special difficulties for railway operation in Newfoundland; the provision of rail and steamship services for the widely scattered settlements is costly and deficits have been common. During several of the war years there were substantial surpluses but these were more than offset by capital outlays.

Canadian steamship companies maintain freight and passenger services between various Canadian points and St. John's. A number of small locally-owned vessels engage in the carrying trade along the coast and also between Newfoundland and points on the mainland. The regular steamship services between Newfoundland and the British Isles have usually been combined with services between the British Isles and Canadian or Canadian and United States ports. With the exception of St. John's and ports along the southern coast, shipping closes for several months in the winter.

No. 13 - Newfoundland: Her Roads

Newfoundland has some 2,000 miles of motorable roads, nearly one-half of which are in the Avalon Peninsula. Approximately 100 miles are paved, the rest, gravel surfaced. There are, in addition, some 3,000 miles of local roads within or around the settlements.

Road construction policy has aimed primarily at connecting the more isolated districts with St. John's or the nearest large settlements. Various sections constructed to serve local needs, however, will eventually be linked up to form a trans-insular highway running from St. John's to Port-aux-Basques -- approximately 625 miles.

The expenditure provided for roads and bridges in the 1948-1949 estimates was $3,395,000. Of this amount $1,100,000 was for maintenance of roads and bridges and $1,120,000 for construction of new roads.

No. 14 - Newfoundland: Civil Air Transportation

Newfoundland occupies a unique position in respect of trans-Atlantic aviation, being the most easterly part of North America and on the great circle route between the most densely populated areas of North America and Western Europe. Gander Airport, constructed originally by the British Air Ministry in the late 1930's, is one of the largest airports in the world.

As a result of World War II, Newfoundland's facilities for aviation were greatly improved. Both Canada and the United States were given the right to construct air bases and to establish extensive wire, radio communication, and weather services. These facilities were for defence purposes, and only such rights of civil use as were incidental to the prosecution of the war were granted. After the war certain of the bases were re-transferred to Newfoundland and civil use of the various airfields was put on a more permanent basis by means of various agreements.

The principal air fields in Newfoundland are Gander, and Goose Bay in Labrador. Two air fields built by the United States Government are located at Stephenville and Argentia. Torbay is the eastern terminus of Trans-Canada Air Lines. Buchans is near the mining development of the same name and Botwood is a seaplane base in the mid-north.

Canada has provided the meteorological service in Newfoundland for civil aviation. Existing United States services are linked with the system.

No. 15 - Newfoundland: Posts and Telegraphs

The postal service and domestic telegraph service in Newfoundland are operated by the Department of Posts and Telegraphs. In addition, some local telephone services are provided as incidentals in certain outlying districts.

There are some 550 regular post offices in Newfoundland, including 55 in Labrador. Of these, 170 in the Island and 2 in Labrador are also telegraph offices. There are some 13 seasonal offices established yearly in transient fishing settlements. In addition, there are several courier routes, aggregating more than 160,000 miles in the Island and more than 7,000 miles in Labrador.

The topography of the country, the lack of roads in many areas, and the small and scattered settlements along some 6,000 miles of coast militate against a frequent postal service for much of Newfoundland and make for high costs. The rates are slightly higher than in Canada and the United States. Direct airmail services between Newfoundland and Canada, the United States, the United Kingdom, and several other countries are now in operation.

As regards telegraph services, the Department maintains a trunk wire circuit along the railway, and more remote settlements are served by wireless from distribution points on the wire system. Many of the post offices are also telegraph offices. Modernization of this system is under way. The use of teletype circuits has been tested and extended recently and linked with telephone circuits in certain areas.

Newfoundland has played an historic part in the development of speedy communication between Europe and North America. The first trans-Atlantic cable was laid to Newfoundland in 1866. The oldest now operating, from Heart's Content, dates back to 1873. At the present time, Newfoundland is the landing place for 14 trans-Atlantic cables operated by four commercial companies. There are 9 submarine cables between Newfoundland and the mainland.

No. 16 - Newfoundland: Facts About Her Foreign Trade

During the fiscal year ended March 31, 1948, imports into Newfoundland were valued at approximately $105 million, while exports were placed at $78 million. Total foreign trade was therefore at the rate of about $570 per capita. As comparative data it should be observed that Canada, which also depends to a very large extent on her foreign trade, had a corresponding turnover amounting to $397 per capita during the calendar year 1948. Newfoundland's figures for the fiscal year ended March 31, 1947, were; imports $75 million and exports $69 million, a turnover of $449 per capita.

The yearly averages for the five-year period immediately prior to the outbreak of war were; imports $23 million and exports $30 million; per capita turnover of $183. The adverse trade balances encountered since the beginning of the war have been offset by Canadian and American expenditures in dollars in connection with military operations and by expenditures by the U.S. on both capital and current accounts in connection with bases leased by that country for future defense purposes.

During the fiscal year ended March 31, 1948, the last for which figures are yet available, Canada supplied Newfoundland with $55 million worth of goods, while the United States supplied a further $40 million worth. Thus the two together met more than 90 per cent of Newfoundland's need. Foodstuffs accounted for 32 per cent of the value of all goods imported into the island and textiles and clothing accounted for a further 11 per cent. Newfoundland's recent prosperity and expanding economy is highlighted by the fact that during the last fiscal year more than $25 million worth of machinery and vehicles were imported.

No. 17 - Canada's Forest Area

The forested area of Canada is estimated at 1,299,960 square miles, or 37 per cent of the total land area, but a considerable part of these vast forests is not suitable for commercial operations, either because it is too difficult and expensive to reach or because the tree growth is not of satisfactory size and quality.

The present accessible productive portion of the forest covers 435,000 square miles and it is from this area that the whole output of sawlogs, pulpwood, fuelwood and other primary products is obtained. About 378,000 square miles of forest, classed as productive but not at present accessible, form a reserve for the future when transportation systems may be more highly developed.

By far the larger part of the world demand for wood is for softwood, or coniferous species. Canada possesses the principal reserves of softwoods within the Commonwealth, and these include large supplies of the most desirable varieties -- spruces, Douglas fir, western hemlock, western red cedar and white, red and other pines. In addition, the Eastern Provinces furnish hardwoods, such as birches, maples and elms, which are particularly useful for special purposes.

No. 18 - Administration of Forest Resources

Generally speaking, the forest resources are under the control of the provinces. Forests of the National Parks, forest experiment stations and the Northwest Territories and Yukon, however, are administered by the Dominion Government. One of the interesting aspects of Canada's forests is that they are very largely owned by the Crown -- that is, the people of Canada. Privately-owned forests cover less than one-tenth of the wooded area.

The general policy of both the Dominion Government and the Provincial Governments has been to dispose of the timber by means of licences to cut, rather than to sell timber-land outright. Under this system, the state retains ownership of the land and control of the cutting operations. Revenue is received in the form of Crown dues on stumpage (either in lump sums or in payments made as the timber is cut); ground-rents and fire-protection taxes are collected annually. Both ground-rent and Crown dues may be adjusted at the discretion of the governments.

The Maritime Provinces did not adopt this policy to the same extent as did the rest of Canada. In Prince Edward Island practically all the forest land has been alienated and is in small holdings, chiefly farmers' woodlots. In Nova Scotia 71 per cent of the forest land is privately-owned; nearly one-half of this is in holdings exceeding 1,000 acres. In New Brunswick nearly 50 per cent is under private ownership. The proportions of privately owned forest land in the other provinces are as follows: Quebec, 7.2 per cent; Ontario, 6.0 per cent; Manitoba, 12.7 per cent; Saskatchewan, 11.9 per cent; Alberta, 7.7 per cent; and British Columbia, 3.4 per cent.

No. 19 - Scientific Forestry

The great forestry problem is the management of Crown forests, first under provisional and later under more intensive working plans, so as to ensure a sustained yield. Forest research activities in this direction are now assuming great importance. The Dominion Forest Service operates five forest experimental stations with a total area of 227 square miles. Here investigations of the underlying principles governing the growth of forests are made and practical methods of management are tested.

About 600 technically trained foresters are employed by the Dominion and provincial forest services and pulp, paper, and lumber companies. A number of foresters are actively engaged in commercial logging operations and, in addition to administrative work, these men carry on forest surveys either for the estimation of timber-stands and making of maps, or to determine natural growth and reproduction conditions and factors.

Through the use of air photographs taken by the Royal Canadian Air Force and base maps prepared by the mapping organizations of the Department of Mines and Resources and National Defence, the Dominion Forest Services has taken a leading part in the development of methods for the interpretation of air photographs for forestry purposes. Most of the provincial forest services and many timber-owning companies are also making extensive use of aerial photographs.

It is now possible not only to map the areas occupied by the different forest types but to estimate the volume of standing timber with an accuracy that compares favourably with ground surveys. Aerial photographs drawn to scales suitable for mapping purposes and covering about 1,000,000 square miles are now available in the National Air Photographic Library of the Department of Mines and Resources, and about 123,000 square miles of forest have been mapped and classified from the photographs. Still greater use of air photographs for forestry purposes is expected in future.

No. 20 - Forest Loss from Fire

Fires take a heavy toll of Canada's forest resources every year, and the deplorable fact is that most of these could be prevented if adequate care were exercised. Official figures indicate this quite forcefully.

Take the year 1946 as an example. In that year only 16 per cent of the 5,900 forest fires, which laid waste to many thousands of acres of our forest, were caused by lightning -- the only unpreventable cause. Forty per cent were caused by carelessness with fires on the part of campers, an increase of six per cent over the 10-year average, and an additional 22 per cent were attributed to smokers, both campers and others. Settlers accounted for 11 per cent and railways for 12 per cent.

Although the number of forest fires in 1946 was slightly greater than the average for the previous ten years, the total area burned and estimated values destroyed were less than half the average figures. The estimated value of the forest growth lost during the year was $1,825,000, down from the 10-year average figure of $4,319,000 while the area burned was 1,017,000 acres compared with the 10-year average of 2,429,000 acres.

Forest-fire losses in the Maritimes were somewhat higher than normal in 1946, although not so serious as in the exceptionally severe fire season of 1944. Elsewhere in Canada the damage caused by forest fires was well below the average.

No. 21 - Forest Losses from Insects

The losses sustained in Canada, as a result of insect depredations, although they cannot be accurately computed, are no doubt appalling. Some years ago an outbreak of the European larch sawfly destroyed practically all commercial larch stands in Eastern Canada. The eastern spruce bark-beetle, the hemlock looper, the jack pine sawfly, the black-headed budworm, the balsam woolly aphid, and several other species have all, at one time or another, appeared in destructive numbers over large areas.

In some cases the changes brought about in the composition of the forest by insect outbreaks have been distinctly prejudicial to the commercial value of succeeding stands -- more useful species having been replaced by less valuable ones. When fire follows in the wake of such outbreaks it may take centuries to repair the damage. At best, a merchantable forest crop, once lost, cannot be replaced in less than 50 to 100 years.

A sound appreciation of the losses caused by forest insects over a given period of time cannot be based only on an estimate of damage to productive forests because insect outbreaks in inaccessible stands may have an important bearing on the fate of commercial forests. A common but erroneous practice is to evaluate insect damage by a measure of dead or dying stands and to ignore the depreciation entailed by the ravages of insects which actually do not kill the timber but merely render it unfit for profitable utilization.

Loss of increment resulting from repeated attacks of defoliators is rarely, if ever, taken into consideration. The same may be said of loss of vitality, the effects of forest depletion on the so-called forest influences, the deterioration of fire-killed timber and of logs left in the woods. Increased fire risk in insect-killed stands, damage to stored stock, and even to manufactured articles, as well as a number of other factors, must be taken into account to obtain a true idea of the destructive role played by insects affecting forests and forest products.

No. 22 - Rate of Timber Depletion

The total stand of timber in Canada of merchantable size is estimated to be in the neighborhood of 311,201,000,000 cubic feet, of which 191,347,000,000 is considered to be accessible to commercial operations. This accessible timber consists of 250,250,000,000 feet board measure of saw timber -- trees large enough to produce sawlogs -- and 1,685,000,000 cords of smaller material suitable for pulpwood, fuelwood, posts, and mining timbers.

The average annual rate of depletion of Canada's forests during the 10 years preceding 1946 was 3,296,772,000 cubic feet, of which 74 per cent was utilized, 11 per cent was destroyed by fire, and 15 per cent destroyed by insects and disease.

Of the 2,443,225,000 cubic feet utilized, 38 per cent took the form of logs and bolts, 29 per cent was pulpwood, 29 per cent fuelwood and the remaining four per cent miscellaneous products.

No. 23 - Primary Forest Products

Canada's forests provide a steady flow of wealth which runs into hundreds of millions of dollars every year. Some idea of its magnitude may be gained from the fact that in 1946 alone Canada's forests yielded logs, pulpwood, firewood, posts, mining timbers, fence rails and many other products which had a value of over $413,-269,000.

But this is only the first phase of operations, the first link in an almost endless chain of manufacturing processes. The logs are sawn into lumber and timber for the construction of homes and factories, the pulpwood processed into woodpulp which in turn becomes paper, and so on in a great variety of operations which add new wealth, employment and general well-being for Canadians.

From the value standpoint, pulpwood was the most important forest product taken from Canada's forests in 1946, with a total of over $183,000,000. Logs and bolts came second with a total value exceeding $150,000,000 and firewood third on the value list with more than $49,000,000. Round mining timber, poles and piling, posts and hewn railway ties were next in order on the value list.

No. 24 - Forest Output of Provinces

The Province of Quebec headed the Dominion in the list for volume of forest production in 1946, leading quantity production of pulpwood, firewood and fence rails and being second among the provinces for quantity production of logs and bolts, round mining timber and fence posts.

Ontario, the second most important province in volume of forest production, headed the list for wood distillation, came second for pulpwood, firewood and hewn ties, and was third for logs and bolts, poles and piling and round mining timber.

British Columbia headed the list for logs and bolts, hewn ties and poles and piling, and held third place for fence posts. New Brunswick came first for round mining timber and third for pulpwood and hewn ties. Saskatchewan came third for firewood. Alberta was the most important producer of posts, and came second with regard to fence rails.

In Manitoba, firewood, logs and bolts, pulpwood and poles were the most important items. Finally, in Prince Edward Island, the greatest volume of forest production consisted of firewood and logs and bolts.

No. 25 - Wood and Paper Industries

Out of a total of 2,812,718,000 cubic feet of merchantable timber cut in Canada in 1946, close to 92 per cent was retained in the country for immediate use or as raw material for further manufacture in some Canadian industry, and about eight per cent was exported in a more or less unmanufactured form.

Manufactures of commodities whose chief component material is wood or paper depend on the products of the forest for their principal raw material group of wood and paper-using industries in Canada ranked first among similar groups of industries in 1946 in number of establishments and value of products. It was second to manufactures of iron and its products in respect to number of employees and salaries and wages paid, and third to the vegetable and iron products in regard to cost of materials.

In 1946 the number of establishments in the wood and paper group of industries was 11,994. The employees numbered 224,121 and were paid $360,049,562 in wages and salaries. The net value of production was $749,055,000 and the gross value, $1,484,-436,000.

No. 26-Use of Primary Forest Products - 1

The logs and bolts cut in 1946 were converted into 5,083,280,000 feet board measure of sawn lumber and into sawmill products with a total net value of $129,408-000. Less than one per cent of the logs and bolts cut in 1946 were exported unmanufactured.

Of the sawn lumber manufactured, about 41 per cent was exported but a large part of this was planed or matched after being sawn and considerable value added to it in this way before being exported. The remainder of the sawn lumber was used in the rough for structural work in Canada or went into Canadian wood-using industries as the raw material in the manufacture of sash, doors and planing mill products, furniture, boxes, etc.

About 17.6 per cent of the pulpwood cut in 1946 was exported before being manufactured into pulp but over 46 per cent of this exported material was rossed or barked pulpwood whose value was considerably increased by this preparation before exportation.

No. 27 - Use of Primary Forest Products - 2

About 82 per cent of the pulpwood cut in Canada in 1946 was used as the principal raw material in the pulp and paper industry, one of our most important manufacturing industries. In pulp-making, the first stage in this industry, the value added to the raw pulpwood amounted to over $133,000,000 in 1946. About 21 per cent of this pulp was exported and the remainder was made into paper and paper board in Canada.

In the last few years, more round mining timber has been produced for export than for home consumption. The wood cut for distillation and charcoal burning is all consumed in Canada. The firewood, hewn ties, poles, posts and rails are largely used locally and if exported they are used in the form in which they leave the woods and would not receive further manufacturing if they were retained in Canada.

A point of interest lies in the fact that 2,585,000,000 cubic feet of home-grown and imported forest products, valued at $365,538,000, was consumed in Canada in 1946, including wood used in the form in which it was taken from the woods and wood used as raw material in Canadian industry. Of the total quantity used in Canada, less than one-half of one per cent was imported.

No. 28 - Saw-Mill Production

Sawmilling in Canada has had a long history that goes back to the closing years of the 18th century at least. The first sawmills were local enterprises like the milling of flour, cutting supplies for local consumption, and being often linked with the grist mill in the use of the same water power. A second type were the mills cutting deals -- planks three or more inches thick -- for the British market, located at points that could be reached by shipping. Next stage of development were mills designed for commercial production of lumber, both for domestic consumption and export, chiefly to the United States.

Sawmilling had its greatest expansion in Eastern Canada during the second half of the 19th century under the stimulus of demand from the United States as settlement moved westward and the eastern cities grew in size, and as transportation facilities increased and improved. In British Columbia -- which now accounts for over half the Canadian production of sawn lumber -- the real expansion of sawmilling began after 1880, with railway construction, followed by the opening of markets with the rapid settlement of the Prairie Provinces.

Today there are upwards of 6,000 sawmills in operation in Canada. The great majority of these produce lumber. The remainder concentrate on turning out such products as shingles, lath, sawn ties, spoolwood, box shooks, staves and heading, and the cutting-up or rossing of pulpwood.

Canadian mills produced more sawn lumber in 1946 -- latest for which figures are available -- than in any year in history. The total amounted to 5,083,280 M feet board measure as compared with the previous peak of 4,941,084 M in 1941. The 1946 quantity was exceeded in 1947 and probably 1948, but details are not yet available for these two years.

No. 29 - Pulp Making

The production of pulp and its conversion into newsprint and other paper products is one of Canada's major manufacturing enterprises. Canada's extensive pulpwood resources and widely distributed water powers have been largely responsible for the remarkable development of the industry.

In 1866, Alexander Buntin installed at Valleyfield, Quebec, what is claimed to have been the first wood grinder in America and began the manufacture of wood pulp by the mechanical process. During the same year Angus Logan and Company built the first chemical wood pulp mill in Canada at Windsor Mills in Quebec.

During the next decade the use of wood pulp in paper-making was extensively developed and in 1887 Charles Riordon installed the first sulphite mill in Canada at Merriton in the Niagara Peninsula; by the beginning of the century the output of the industry had exceeded $8,000,000. In 1907 the Brompton Pulp and Paper Company built,

at East Angus in Quebec, the first mill in America to manufacture chemical pulp by the sulphate or kraft process.

There were, in 1947, three classes of mills in the pulp and paper industry of Canada: 29 making pulp only, 59 combined pulp and paper mills, and 27 making paper only. The 88 mills making pulp produced 7,254,000 tons valued at $403,853,000, representing increases of 10 per cent in quantity and 40 per cent in value over 1946. About 72 per cent by quantity was made in combined mills and used by them in paper-making and about 28 per cent was made for sale in Canada and for export.

No. 30 - Newsprint and Other Paper

Paper was first manufactured in Canada about a hundred years ago but prior to 1860 no wood pulp was used or produced. Rags, straw, esparto grass, cotton waste, and other substances were the raw materials used. The finest grades of paper in Canada, as elsewhere, are still made of a pulp made from rags. In quality, there is nothing superior to rag paper.

But the supply of rags was limited and manufacturers were forced to experiment with other raw materials. They discovered that excellent paper could be made from the spruce, balsam, fir and hemlock. So in 1866 the first wood grinder in America was installed at Valleyfield, Quebec, and the manufacture of wood pulp by the mechanical process began. The same year a chemical pulp mill was started at Windsor Mills, Quebec.

From these small beginnings, paper making in the Dominion has grown into a business of immense proportions and Canada has become the world's greatest producer and exporter of newsprint paper. In all, Canada produces some 600 varieties of paper. These include wallpaper, paper towels, napkins, and paper for bags, and the bags themselves. Canada's fine paper industry produces everything from blotting book, writing and tissue paper to the highest grades of rag paper, including bank-note paper.

Canada has a kraft paper industry which produces paper of great strength and wide utility. Kraft paper is largely used for wrapping purposes, and also in asphalt and laminated papers. It is in wide demand for bags and for multi-wall paper sacks for bulk products. Because of its strength, kraft paper also enters into specialized products of the pulp and paper industry, including clothes lines, carpets, and slip cover fabrics. As with paperboard, paper is used in a wide variety of building products.

There were 86 mills making paper in Canada in 1947 and they produced 5,775,000 tons of paper and paper boards valued at $507,101,000. Newsprint production amounted to 4,474,000 tons -- almost 78 per cent of the total reported tonnage of paper.
