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A FACT A DAY ABOUT CANADA

FROM THE

DOMINION BUREAU OF STATISTICS

JULY 1940

SIXTH SERIES

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Contents

- | | |
|---|---|
| 275. Dominion Day | 290. The Changing Population |
| 276. Rubber Tires on the Farm | 291. Yukon Gold |
| 277. Recent Advances in Food Industries | 292. Hail in the Wheat Belt |
| 278. More about Food Industries | 293. Industries for Canada |
| 279. Family Living Expenditures | 294. British and United States
Investments |
| 280. Wood Using Industries | 295. Canada Important |
| 281. Development of Wood Industries | 296. Appeal for British Industries |
| 282. Recent Development of Wood
Industries | 297. Patriotic Italian Canuck |
| 283. Wood as a Raw Material | 298. War Prisoners in Canada |
| 284. Depletion of our Forests | 299. Sleek Canadian Chaser |
| 285. Setting Hay Stacks | 300. Canada is Air Conscious |
| 286. Whaling Resumed | 301. Air Travel in Canada |
| 287. Eskimos of Canada | 302. Air Force Recruits |
| 288. Crystals in Canned Fish | 303. Hoodoos |
| 289. Fragile! Handle With Care! | 304. Rat a Fish Killer |
| | 305. Our Most Decorated Ace |

James Muir,

Editor.

1935
NATIONAL SURVEY
OF CANADA

from the

Dominion Bureau of Statistics

No. 275 -- Mon. July 1, 1940 -- Dominion Day

Canada as a Dominion is 73 years old today. Her swaddling clothes have been shed a long time. She is a full fledged nation of the British Commonwealth, her sword unsheathed to battle alongside her democratic Allies in the crusade to preserve human liberty. There are other British dominions -- Australia, New Zealand and South Africa.

How Canada came to be called a dominion is worth remembering. When the delegates from Canada, New Brunswick and Nova Scotia were discussing in London in December, 1866, the details of the British North America Act, there were differences of opinion as to the proper term to be used to describe the new federation. Sir John A. Macdonald, who was the leader of the Canadian delegation, wanted it to be called the Kingdom of Canada, but Lord Derby, the British foreign minister, thought that might wound the susceptibilities of the people of the United States Republic. All the Canadians firmly rejected the name Colony.

That night, Sir Leonard Tilley, the famous New Brunswick statesman, who was accustomed to read a chapter of the Bible each evening before retiring to rest, stumbled on the verse of the 72nd Psalm which reads: "He shall have dominion from sea to sea and from the river to the ends of the earth."

Next morning he suggested that the new federation should be called the Dominion of Canada, and this was adopted. The arms of Canada now bear, in allusion to the story, the legend: "A mari usque ad mare," which translated runs "From Sea to Sea."

At the time of Confederation the population of Canada was 3,463,000. The population, 73 years later, is now estimated at about 11,400,000. In that period of time the population has more than trebled. All the provinces, except Prince Edward Island, have shown an increase.

No. 276 -- Tues. July 2, 1940 -- Rubber Tires on the Farm

Here are some valuable notes on rubber tires which will be found very helpful not only to the farmers but to all persons whose business necessitates the constant use of these tires. Extensive tests of rubber tired equipment by the Government service show that weight and air pressure are two most important factors, in securing best results with rubber.

It has been definitely proven that the greater the weight the lower the slip-page on traction wheels at any given air pressure. The use of non-freezing liquid ballast in traction tires increases their draft ability in direct proportion to the weight used. This type of ballast or wheel weight is more effective than attached weights because of the reduction of bounce over rough ground and the fact that all pressure is exerted where the tire can best use it.

By increasing the weight on traction tires, a higher effective air pressure may be used with better tire life and satisfactory load pulling ability. Pressure of 12 and 13 pounds with weights are more satisfactory than 10 pounds air pressure without weights. Tractor front tires should be kept inflated to 30 to 35 pounds for best steering results. Tires on non-driving wheels do not require liquid ballast except where extra weight is necessary to the special design.

Implement tires should always carry the full air pressure recommended by the implement and tire manufacturer. Lower air pressure in implement tires increases the power required to pull them and greatly reduces their life. Keep all rubber tires high and dry when not in use, remove the weight by blocking if possible, and store them in a dry and dark place over winter.

Canada in 1938 manufactured 2,392,337 pneumatic tire casings and 2,155,412 inner tubes along with 456,731 pounds of solid tires.

No. 277 -- Wed. July 3, 1940 -- Recent Advances in Food Industries

Scientific progress in the food industries has been general although a great deal of interest and development has centered in the dairy industry in particular.

Processing methods have undergone many changes - Ottawa was the first City on this continent (1928) to introduce homogenised milk, which has now gained a very important position in daily life.

More recently a new method of pasteurization -- short time high temperature -- has been successful in destroying all pathogenic organisms in 15 seconds at a temperature of 160°F; this system is now recognized in certain states of the U.S.A. as an alternative method to that presently official of using a holding period of thirty minutes at a temperature of 145°F. On July 1, 1939, the American Public Health Association adopted a new method and published this as a standard for bacterial enumeration in all dairy products. This method has been officially used since that time in the various health centres of Canada. The general effect has been to greatly improve the efficiency of pasteurization by virtue of eliminating thermoduric types of bacteria in raw milk supplies.

The production of Ice Cream, Condensed Milk, Chocolate Drink and Homogenised Milk have been improved through the principles of physical chemistry. In the first two instances, the addition of cane sugar to a mixture containing lactose involves proper adjustment of ingredients to prevent sandiness; in chocolate drink the proper colloiding of fat and cocoa particles and in homogenization the optimum subdivision of fat particles and avoidance of sedimentary deposits -- leucocytes, etc.

The baking industry is now using larger quantities of milk powders due to promotional research in not only improving the loaf texture, crumb, and general appearance but also the yield.

Fur bearing animals are also consumers of milk powder greatly to the advantage of the rancher. Recent research in ribo-flavin determination and function has proved the value of milk powder in poultry raising -- improved fertility and hatchability.

Milk powder for use in canned soups must be comparatively free from thermophilic bacteria to which have been attributed "flat sours"; similarly, also it must be non-curdling by test of each lot.

No. 278 --- Thurs. July 4, 1940 --- More about Food Industries

Low temperature refrigeration is now undergoing a revolutionary change, thorough elimination of overhead and side wall piping in favor of a fin coil bunker, flooded with liquid ammonia and activated with electrically driven fans. The advantage is simplifying defrosting and attainment of very low temperatures with much less load on compression machinery; also less cost of installation. This system is now being used in sharp freezing of fruits, ice cream, vegetables and fish. Such a method contributes to quality in preserving the freshness of the food so frozen.

Human milk is now being preserved by freezing almost instantaneously in small pellets (0.2 oz.) and stored at low temperature in a modified ice cream cabinet and thus continually available for emergencies. This system has been established since 1936 at the Royal Victoria Maternity Hospital, Montreal. Bacteriological tests have proved an excellent state of preservation of specimens after two years storage by this system.

Roll-less Butter Churns -- a recent development of equipment manufacturers is a revolutionary design which effects a saving in power, produces a more uniform butter quality and reduces churning time with due regard to temperature considerations.

Packages are more than ever exerting a direct influence in foods distribution owing to the consumer acceptance of specialty packages -- pickles now appearing in transparent sealed bags encased in a protective window carton; ice cream in a cylindrical package with a piece of string for easy opening.

No. 279 --- Fri. July 5, 1940 --- Family Living Expenditures

A recent survey of urban wage-earner family living costs made by the Dominion Bureau of Statistics shows that many factors affect expenditures for living needs. The amount of family income is generally considered the dominant influence, but income in turn is related to the age of the principal breadwinner, and the numbers and ages of children also affect the character of family living expenditures. Despite this, there appeared to be no general tendency in urban wage-earner families of British origin for the number of children to increase in the higher family income groups, although in French families the average number of children was larger at higher income levels. In both racial origin groups, amounts spent per person declined as the number of children in the family increased. Average expenditures per person dropped from \$516 in British families with one child to \$212 in households with five children. Corresponding averages for French families were \$397 and \$219. All budget groups contributed to this decline, with food outlay per person falling from \$127 to \$74 for British families and from \$109 to \$75 for French families with one and five or more children respectively.

A different picture was obtained when expenditure records were classified according to the age of the father to examine relations between expenditures and

the lengthening life of the family. The number of children per family tended to increase until the father's age was somewhere between 45 and 54, and amounts spent per person on food and clothing increased slightly as the age of the father moved upward into that range. This was associated with a more rapid rise in income than in numbers of children at progressive age levels of the father. Among the British families in the survey, income rose from an average of \$1,319 in cases where the father's age was between 25 and 34 to \$1,541 where ages ranged from 45 to 54 years. In the next ten-year age period, average family income dropped back to \$1,451, and average numbers of children per family decreased from 2.5 to 2.3. Total expenditures per person declined slightly from \$378 in families where father's ages were between 25 and 34 to \$358 for families with fathers between 55 and 64 years of age.

Analyses of records for living expenditure tendencies related to numbers of children and the length of time the family had been formed, did not reveal the existence of a "typical" family. Families with one child under 13 years, or with two children from 4 to 12 years apparently possess some claim to this title, but contrary to popular opinion, families with three children form a definite minority. The tendency already noted, for income to increase as the family life span lengthened was apparent in family groups with the same number of children. The earnings of older children were partly responsible for this increase. For families with the same number of children, expenditures on food and clothing mounted as the family life span extended but not by the full amount of the income increase. Housing and household furnishing expenditures actually declined as the number of children increased. Most other budgetary outlays showed very little relation either to rising income or the lengthening family life span. Apparently a wide diversity in consumer tastes exists, which is scattered fairly evenly among "non-necessity" expenditures such as recreation, transportation, and savings.

No. 280 -- Sat. July 6, 1940 -- Wood Using Industries

The wood and paper group of products in Canada comes second in importance to agricultural and vegetable products in respect to gross value of production and third to non-ferrous metals and their products in respect to total value of exports. The annual increases in the last three years in the value of production and exportation of these products are shown in the following figures:--

	<u>Production</u>	<u>Exportation</u>
1933.....	\$342,155,077	\$131,359,211
1934.....	404,435,948	161,136,624
1935.....	441,160,387	175,870,831
1936.....	497,103,666	210,206,707

Wood and paper products in 1936 formed 16.5 per cent of the total value of manufactured products in Canada and 20.7 per cent of the total value of exports of all kinds of Canadian produce.

The primary step in production in the wood and paper group consists of operations in the woods. These operations produce certain commodities such as ties and poles which are used as such without further manufacture but the greater part is separated at this stage and goes either toward the ultimate production of finished commodities made of wood or toward those made of paper.

The pulpwood forms the raw material of the pulp and paper industry which in turn provides raw material for the paper-using industries. The logs and bolts pass into the sawmills and mills producing lath, shingles, staves, hoops, heading and veneer. In these mills it undergoes its second step in production which is covered by an annual report on the lumber industry. The rough lumber, lath, shingles, cooperage stock, veneer and other products of this group of mills are either used in rough construction or for building purposes in the form in which they leave the sawmill or are sold or transferred to the next group of industries where they are used as the raw material in the manufacture of sashes, doors, furniture, boxes, barrels, etc. These industries which might be considered as representing the third step in production of forest products are covered in the present report and are classed as wood-using industries. The class also includes certain mills which do not depend on the sawmill for their raw material but purchase it in the form of logs and bolts and carry out the second stage of its preparation themselves. In other mills such as those manufacturing excelsior there is no second stage comparable with the work done by sawmills but the finished product which is manufactured direct from the logs or bolts is considered to be of the same status as the other products of the wood-using group.

This wood-using group does not include every industry into which wood enters as a raw material but only those producing commodities whose chief component is wood. There are a number of industrial groups in which wood is an important raw material such as the manufacture of agricultural implements, musical instruments, etc., and others such as the manufacture of machinery in which wood is necessary but only in comparatively small proportions. There are also many cases where wood is used indirectly in the manufacture of all-metal products as for example in the use of wooden patterns and wooden foundry boxes in making metal castings. Wood in the form of barrels, boxes and other containers also enters into the distribution of commodities of all kinds.

Even if the almost universal use of paper made of wood is disregarded it is difficult to find any form of industrial activity in which wood is not used directly or indirectly.

No. 281 -- Sun. July 7, 1940 -- Development of Wood Industries

During early pioneering times in Canada the wood-using industries were represented by the labour of individual wood-workers. It consisted chiefly of house and building construction and the manufacture by hand of furniture, vehicles, cooperage, etc., carried on in farm buildings or small workshops. Only in the case of shipbuilding was there anything approaching the modern factory system where workers of the same trade are concentrated in large establishments.

The first shipbuilding in Canada was done by Pont-Gravé who built two vessels at Port Royal in 1606 when he believed himself to have been deserted by DeMonts. It was Talon however who gave shipbuilding in the Colony the status of an industry and in 1665 before he left New France 350 men out of a total population of less than 7,000 were engaged in constructing wooden vessels.

Under British rule the industry developed rapidly as the Canadian forests not only provided the material for the ships themselves but also the cargoes of timber that made shipbuilding profitable.

The building of wooden ships reached its maximum development about 1865. In 1852 Quebec alone had 25 shipyards and eight floating docks giving employment to five thousand workers.

With the advent of iron and steel hulls and the use of steam the building of wooden ships declined until it is at present largely confined to the construction of small coasting vessels, bank schooners, river and lake craft and pleasure boats. It is interesting to note that the Royal William, the first ship to cross the Atlantic propelled by steam alone was built of wood in a Canadian shipyard at Quebec in 1851.

During the early part of last century the manufacture of sashes and doors and the planing and other preparation of lumber for building purposes was done largely by hand during the construction of the building in which it was to be used. The carrying on of this preliminary work in factories was almost unknown. The carriage shop and the cooperage were among the first forms of wood-using industry carried on in separate establishments.

With the advent of wood-working machinery and the substitution of power for hand labour the factory system developed rapidly among these industries as wood was the cheapest and best material available for manufacturing purposes. The earliest Census of Upper and Lower Canada in which wood-using industries are mentioned was that of 1851: Flour mills, sawmills, distilleries, tanneries, foundries and breweries are dealt with to some length but mention is made of the existence only of 45 carriage and wagon factories, 37 sash and door factories and planing mills, 36 furniture factories and a few other factories producing pails, pumps, lasts and shoe pegs.

In the 1860 Census of the two Canadas there were 341 establishments classed as wood-using industries reporting a production of over a million dollars. Carriages and wagons again headed the list, with furniture second, and cooperage third.

No. 282 -- Mon. July 8, 1940 -- Recent Development of Wood Industries

In 1371 and subsequent Census years covering Canada as a Dominion the wood-using industries take a more prominent place and are dealt with in considerable detail. The manufacture of horse-drawn vehicles continued to head the lists until about 1890 when the sash and door factories and planing mills moved up to first place where they remained until 1929. While the manufacture of vehicles continued to increase for many years in volume of production it decreased in importance in relation to other wood-using industries. The manufacture of automobiles was started in Canada between 1905 and 1910 and automobiles were first mentioned in the Census of 1911. With the rapid development of this form of land transportation there was a reduction in the relative importance of carriage and wagon building. In 1911 the value of automobiles made in Canada was only a little over \$6 million while that of carriages and wagons was over \$11 million. In 1915, carriage production had increased to over \$7 million but automobile production reached more than \$24 million and has since increased its lead to a still greater extent. The carriage, sleigh and vehicle supply industry was twelfth among Canadian wood-using industries in 1936 with a production valued at \$815,293. However, there is still a certain demand for horse-drawn vehicles

in city delivery, logging, agriculture and construction work, and the manufacture of commercial bodies and boxes of trucks and automobiles is now being carried on by many manufacturers engaged previously in the manufacture of carriages and wagons.

The standardization of sizes and styles of doors, sashes and other preliminary factory work in connection with building construction, the development of machinery for mass production of these commodities and the activity of building in Canada up to 1929 resulted in enormous increases in the products of the sash and door industry. At the present time little or no fine carpentry or joinery is done "on the job" in building construction. It is now possible to secure from the mill practically all the wooden material used in building construction, cut to size, fitted and ready to be assembled. The greater height to which buildings can be constructed by the substitution of steel, cement and stone work for wood in the frames and outer walls, has had a tendency to increase the demand for wooden sashes, doors, flooring and the interior trim which are still used in this type of building.

The manufacture of furniture which was developed in the hardwood regions of southern Ontario and Quebec has spread to other parts of Canada but is still more or less centred in the southwestern peninsula of Ontario. The native supply of the more valuable furniture woods such as white oak, cherry and black walnut has been almost exhausted commercially but the reputation of Canadian-made furniture which was built up during the years of abundant local supply has persisted although much of the raw material for the industry to-day is imported from the United-States and tropical countries. Other Canadian hardwoods such as birch, maple and red oak are being used to a greater extent as their qualities are becoming better known. This industry has headed the list for gross value of production since 1930.

With a few minor exceptions the gross value of production in every one of the seventeen groups of wood-using industries has increased annually since 1933 when the last complete combined report was issued. Nevertheless, in most cases production as late as in 1936 was still considerably less than in 1929.

No. 283 -- Tues. July 9, 1940 -- Wood as a raw Material

During the early industrial development of Canada wood was used as a raw material for many purposes, not because of any particular quality or characteristic of the wood itself but merely because it was cheap and abundant. With the development of the use of metal and other materials in industry a certain amount of substitution has been inevitable and the use of wood has gradually been confined to those purposes to which it is particularly adapted. It has been found that for many purposes there is at present no satisfactory substitute for wood and that in some cases only a certain kind of wood will fill the requirements. In the building of horse-drawn vehicles as many as 30 different kinds of wood were used, each being selected for that part of the vehicle where full advantage could be taken of its peculiar qualities. The durability and the resistance to decay of the wood of certain trees under certain conditions of use was appreciated by even the earlier manufacturers. Later on, the physical and chemical qualities of the different woods in use were made the subject of scientific research and to-day manufacturers can secure accurate information concerning the suitability for any purpose of any of the kinds of wood on the market from such Government institutions as the Forest Products Laboratories of the Dominion Forest Service.

The increasing scarcity of wood and the possibility of using other materials in its place has led to considerable substitution but in many cases this is purely a matter of economy, wood being still used in the better classes of the products involved. There are many cases where no satisfactory substitute has ever been found for wood such as in the manufacture of high-class furniture, sporting goods, tool handles, small pleasure craft, certain classes of interior house decoration, etc. Even where the substitution has been extensive it has sometimes resulted in an increase in the general consumption of wood as a raw material.

The substitution of steel, concrete, brick and stone for wood in the framework and outer walls of buildings has resulted in more building construction and taller individual buildings. This has increased the demand for the sashes, doors, flooring, and the interior trim which is still used in buildings of this type and also the demand for lumber for concrete forms, templates and scaffolding used in their erection. There is to-day more wood used in building construction than was used when buildings were made almost entirely of wood.

Similarly with shipbuilding. The use of steel in place of wood in the hulls and other parts of a modern vessel has made it possible to build more and larger ships and more wood is used annually in the interior fitting of steel vessels to-day than was used in building wooden ships in the past. The manufacturers of automobiles in America to-day use more wood as a secondary material or in an indirect way than was used by the manufacturers of horse-drawn vehicles when these were the prevalent means of land transportation.

Owing to increased scarcity there has been an increase in economy in the use of wood by Canadian industry. Investigation showed that many manufacturers were discarding or using as fuel waste material which was suitable for the manufacture of other products or by-products. Waste in the process of manufacture has also been reduced.

No. 284 -- Wed. July 10, 1940 -- Depletion of our Forests

An attempt has been made to estimate the extent to which our forests are being depleted annually in the process of exploiting this material. For this purpose converting factors based on actual measurements have been used. Each of these factors represents in cubic feet the quantity of standing timber that must be cut in the forest in order to produce one unit of the material in question, based on the total cubic contents of the tree. By the use of these factors it has been estimated that the consumption of standing timber for use alone aggregated 2,702,766,000 cubic feet in 1936. Of this total about 91.3 per cent was retained in the country for immediate use or as raw material for Canadian industry and 8.7 per cent was exported in an unmanufactured or partly manufactured form. The logs and bolts were converted into almost four billion feet board measure of sawn lumber and into other sawmill products. Of the sawn lumber, about half was exported but a large part was planed or matched after leaving the sawmill and considerable value added to it in this way before being exported. The remaining lumber sawn was used in the rough for structural work in Canada or went into the Canadian wood-using industries.

During the last ten years fire has destroyed annually about 267,000,000 cubic feet of merchantable timber. The destruction occasioned by insects, fungi, wind-fall and other destructive agencies has been estimated at 700,000,000 cubic feet

per annum. It may be safely estimated that the forests of Canada were depleted in 1936 by more than 3,550,000,000 cubic feet.

However, a total depletion of 3,550,000,000 cubic feet in one year does not necessarily imply that our total resources of 273,656,000,000 cubic feet will be reduced by that amount every year and that the supply will therefore be exhausted in 77 years. Estimating the probable duration of our supply of forest products is not a matter of simple arithmetic. The rate of utilization depends to a large extent on industrial activity not only in Canada but in those countries to which Canadian forest products are usually exported and is far from constant. It tends to increase in the demand for forest products from other countries whose supplies have been reduced to a greater extent than our own. The rate of destruction from fires and other agencies is also very uncertain but tends to increase with the increase of population and the extension of settlement unless measures are taken to counteract this tendency.

On the other hand there is a steady increase in volume taking place in all healthy stands of timber due to annual growth. By the application of scientific forest management this annual growth can be stimulated and could be made to take place over our entire area of potential forest land. If all the land in Canada which is better suited for the growing of timber than for any other purpose were under intensive forest management on a sustained yield basis it would furnish enough timber and forest products annually in perpetuity to supply wood-using industries catering to the needs of a much larger population than we have at present with a sufficient surplus for profitable exportation.

There is reason to believe that in time the loss due to forest fires will be practically eliminated once the general public can be made to realize the necessity of precaution, as ninety per cent of forest fires are due to human carelessness. Scientific methods of controlling insect and fungus damage are being rapidly developed and in time the depletion will consist almost entirely of material cut for use.

No. 285 -- Thurs. July 11, 1940 -- Setting Hay Stacks

The average man, and quite possibly the average farmer, has not paid particular attention to the fact that dollars and cents are wrapped up in the direction in which hay stacks are set. In this year of war when every item counts in the pursuance of victory it is important to know something very definite about this seemingly -- to the amateur -- small matter.

An expert in the Department of Agriculture used to follow the rather common practice of building his haystacks east and west (or sometimes west by southwest and east by northeast) on account of wind. The west end would be built up first and would serve as a buffer for the handling of the remaining hay till it became time to top out. In winter the east end would usually be hauled first and again the worker would be sheltered from the prevailing winds. Providing the top be held snug with poles or hangers a stack built with its end to the wind is less likely to tip or to lose its head than a stack built broadside to the wind.

There is, however, a disadvantage in the east-west direction. During periods of prolonged wet weather the north side has scant chance to dry out and some waste of hay may result.

The Department of Agriculture's expert, therefore, has changed his practice and now builds his haystacks north and south so that the sun shines on both sides. When such a stack is built on a false bottom of crossed poles and the hearth is kept full from ground to top the stack will endure a great deal of bad weather without serious spoilage and if enough pairs of wire hangers are used to hold the top down, little trouble from uncapping by wind should be experienced in most climates.

The hay and clover crop of Canada last year was about 13,377,000 tons. What it will be this year is awaited with some concern by the interested parties.

No. 286 -- Fri. July 12, 1940 -- Whaling Resumed

Resumption of whaling operations on the Pacific coast after a year's lay off will put Canada back into the whaling picture this year. Market conditions, which made satisfactory returns unlikely, caused a curtailment of whaling in 1939 and Canadian operations which centre off Queen Charlotte Islands on the British Columbia coast were suspended.

Now with the world stocks of oil, bone meal, and other whale products reduced, and with war conditions increasing a demand for reduction products, the outlook for the industry is more favourable.

Some half dozen kinds of whales are taken off the British Columbia coast, ranging in size all the way up to the big 80 foot female sulphur whale which headed the size list in the catch of 1938. Canada's whaling catch of that year numbered 310 and they yielded oil, bone meal, and fertilizer having a marketed value of some \$184,000. Oil is the chief product of the whaling industry and the 1938 production, 545,000 gallons, was worth more than \$162,000. Under normal conditions most of Canada's whale oil production is exported to the United Kingdom and the United States.

Sperm and Finback whales are the most plentiful in the British Columbia catches, with Sulphurs and Humpbacks following in order. Sulphur whales are the largest of the species taken in Canadian whaling. Sei and Bottlenose whales, taken occasionally, are the other two species found in Canadian whaling waters. In the 1938 catch only four varieties were taken -- 252 Sperm, 50 Finbacks, 4 Sulphurs and 4 Humpbacks.

No. 287 -- Sat. July 13, 1940 -- Eskimos of Canada

The Eskimos of Canada are found principally on the northern and Hudson Bay coasts 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 who 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 wandering life of the Eskimos and the vast area over which they are scattered present great difficulties in ascertaining their exact numbers. The total for the entire Dominion, according to the latest returns, is about 6,000 located mainly in the Northwest Territories, with approximately 1,590 in Quebec, 85 in Yukon Territory, 62 in Manitoba, and 3 in Alberta.

The administrative care of Eskimos outside of the organized provinces devolves upon the Department of Mines and Resources which, by regulative measures (including the setting aside of game preserves where only natives may hunt and the establishment of a reindeer herd), conserves the natural resources necessary to their subsistence. Contact with the Eskimos is maintained through permanent stations (at a number of which medical officers are located), in the Eastern, Central, and Western Arctic, by patrols of the Royal Canadian Mounted Police, and by means of the annual Canadian Eastern Arctic Patrol by steamship.

No. 288 -- Sun. July 14, 1940 -- Crystals in Canned Fish

If some day on opening a can of lobster, salmon, chicken haddies, shrimp, or crab, you note a number of white crystals, do not be alarmed. These shiny white particles are not glass or any other dangerous substance but in all probability are crystals of magnesium ammonium phosphate. Under certain circumstances, according to the scientists of the Fisheries Research Board of Canada, these crystals occasionally form from the natural ingredients of fish flesh. Seasonal and local variations in the chemical composition of the fish flesh, variations in cooking the fish before they are packed in the cans, variations in processing the cans in the retorts and cooling conditions, and variations in storage temperature all are possible factors which may contribute to the development of such crystals. All the conditions under which they may be formed have not yet been investigated. But it has been definitely established that the crystals are harmless. In fact the chemical substances of which the crystals are formed are necessary in one form or another for normal health.

In order to allay any fear which a consumer may have on encountering such crystals and to make a test of the same, it is suggested that one of the crystals about the size of a pin head be placed in a teaspoon of vinegar or lemon juice and the liquid heated gently. If the crystals dissolve you may then be reasonably certain they are magnesium ammonium phosphate. In appearance the crystals are colourless, transparent, hard, and the edges are somewhat sharp. When placed in the mouth they dissolve so slowly they are tasteless. Sometimes they are so small that they merely impart grittiness to surface of the canned fish.

Fisheries scientists are continuing their study as to possible causes of the crystal development with a view toward ultimately eliminating them from the fish packs.

The marketed value of canned fish produced in Canada in 1939 was \$15,449,000.

No. 289 -- Mon. July 15, 1940 -- Fragile! Handle With Care!

People in glass houses can throw stones! This is the 1940 version of the ancient proverb, now rendered obsolete by the product of a rapidly growing industry that is being carried on right here in our own Dominion.

In 1905, safety-glass was discovered quite accidentally by a French scientist who let slip a flask containing a thin film of plastic. To his amazement, the vessel did not fly into a million bits, but each fragment adhered to the gummy plastic and, although shattered, the flask retained its shape.

From that time on scientists the world over concentrated their efforts on extending the development of this newly found product. Safety-glass consisted of two sheets of ordinary glass, bound together by a layer of transparent plastic, forming what is called a "sandwich". Although great improvements have been made in the plastics, the structure of safety-glass today remains essentially the same, the principle being that when shattered, the fragments of glass cling to the interlayer of plastic instead of flying around.

The plastics used in the early production of safety-glass were cellulose acetate. Finally the plastic resin called Butacite was discovered, and much of its development was due to the efforts expended by a well known Chemical Company in Eastern Canada. Safety-glass was thus rendered resistant to temperature changes, discoloration, and most important of all, toughened to the extent that deliberate collisions and fierce blows failed to pierce it.

How is this wonder-glass made? Well, it is a simple process, that gives little indication of the years of patient research and experimentation that have led to its development.

The plastic is first rid of all moisture and then cut into sizes desired. In chambers where the temperature and humidity are carefully controlled, the "sandwiches" are prepared and placed on rollers. All interlaying air is exhausted and the three parts are firmly knit to together. Great batches of these sandwiches are bound and placed in an oil bath of increasing heat. The temperature is brought to 250 degrees F. and 190 lb. pressure to the square inch is brought to bear upon every side of the glass until each layer has been compressed to form one perfectly transparent sheet. Finishing processes remove all flaws and blemishes, and the safety-glass is ready for market.

Cinderella will have nothing on the girl of tomorrow. Not only will the future young Miss be stepping forth in glass slippers, but in a gown woven entirely from glass yarns, stockings fashioned from durable, run-proof glass threads and, who's to say, she may even be sporting an all-glass chapeau.

No. 290 -- Tues. July 16, 1940 -- The Changing Population

Every ten years the population of Canada is numbered and 1941 will see another census taken. A glance at the figures for 1931 show that the people living in our Dominion at that time numbered 10,377,000. Of this sum the Province of Ontario had the largest percentage registering approximately 3,432,000. Quebec was second with 2,874,000, the other Provinces following in order

Saskatchewan, Alberta, Manitoba, British Columbia, Nova Scotia, New Brunswick, Prince Edward Island, the North West Territories and lastly the Yukon.

Since the beginning of the century the proportion of Anglo-Saxons and French has dropped while the percentage of foreign European has shown a consistent and drastic increase. The prairie provinces have the largest percentage of foreigners and Prince Edward Island has the smallest. However, in the four western provinces as a whole, the number of foreign-born has declined steadily since the first of the century while in the East it has increased.

It is interesting to note that of the total population of Canada, at the time of the last census approximately 5,232,000 were between the ages of one and 25 years. Moreover, a larger percentage of this number is of foreign origin, meaning that the section of the population of British extraction is not increasing as rapidly as the foreign. This condition may be attributed in part to the lower age of marriage customary among foreign peoples, than among the Anglo-Saxons, and the tendency, on the part of the former, to raise larger families.

The Summary of the 1931 Census Monograph reads in part as follows: "In the absence of the customary volume of immigration from the British Isles during the last decade (1921-31) the French increased almost twice as rapidly as the Anglo-Saxon races; with the resumption of moderate immigration from Continental Europe and continuing higher birth rates among earlier immigrants, foreign European stocks increased nearly four and a half times more rapidly than the British. Even without further immigration or emigration the differential fertility alone, if continuing on anything like the present scale, promises to effect quite as radical changes in the racial composition of the future Canadian population as have occurred in the past."

With the new census coming up, it will be interesting to note the changes, if any, in the nativity of the population and the degree to which the writer of the above quotation has proved a prophet.

No. 291 -- Wed. July 17, 1940 --- Yukon Gold

To those of us who have read "The Trail of Ninety-Eight" by Robert W. Service, Yukon gold has an appeal which probably no other mining country has ever enjoyed. The sheer romance of it caught the imagination, and there was so much more detail than perhaps even Bret Harte inscribed, great though his works were. Yet the Yukon is not in it with Ontario in gold production. Here is a cold figure story of last year's mining operations in the far north-west of Canada, but the names give a thrill:

Placer gold production in Yukon amounted to 108,078 ounces during the fiscal year ended March 31, 1940, an increase of 17,483 ounces over the preceding fiscal year. The total number of placer claims in good standing was 2,644 of which 2,502 were in the Dawson district, 103 in the Mayo district, and 39 in the Whitehorse district. After almost a half century of continuous operation the famous placer fields of the Klondike still have gold-bearing gravel reserves of a magnitude that assures many more years of successful operation.

The high price of gold in recent years has resulted in increased attention being given to Yukon, and the placer operators are working over the old Klondike diggings and the lower grade ground which was neglected in the days of '98. The old pan, rocker, and sluicing methods have been largely succeeded by huge dredges, most of which are operated by electricity developed from the water-powers of the area. During the fiscal year eleven dredges operated and these handled more than 10,000,000 cubic yards of gravel.

Prospecting for placer gold was on the increase, and extensive stripping and thawing operations, preliminary to large-scale dredging, were carried out on a number of claims. Individual mining operations, conducted chiefly during the summer season, were confined to the old placer creeks in the Dawson and Sixtymile area, Haggard and Righet Creeks in the Mayo area, Bullion and Burwash Creeks in the Kluene Lake area, and Livingstone Creek district.

In addition to the placer gold output of Yukon, 1,147 ounces of lode gold were produced from the Laforma mine in the Freegold Mountain area in the Carmacks district.

No. 292 --- Thurs. July 18, 1940 --- Hail in the Wheat Belt

When a big, tattle-tale gray cloud, tinged with yellow, rolls up from the horizon, and the air is ominously still; when the sun, so hot a few hours before, suddenly loses its brightness and slinks away; when the very flies hover in dozens round the door, then the prairie farmer knows the hour of trial has come. Within the space of a few minutes his very outlook on life can be entirely altered to such an extent that it approaches the unbelievable.

What is this stupendous "something" than can raise a man's hopes and aspirations to the skies, or dash them to the earth in a sodden mass?

Hail!

The encyclopedia defines it as small masses of ice or frozen rain, varying in form from angular, pyramidal and stellated; the formation of which is believed to be dependent upon the presence of a whirl wind phenomena in the upper atmosphere. It is perhaps better that we do not go into the farmer's definition of it in any detail. Suffice to say, it is brief, pithy and to the point.

Grasshoppers, gophers and weeds are obstacles that can be overcome with time and effort, drought, while the effects are tragic, is none the less, a slow process and the realization of crop failure grows day by day with the inevitable rising and setting of the burning sun. But hail! Hail is heartbreaking.

To hear the deafening roar of fragments of ice pounding on the roof, to see the fields, and gardens taking a merciless beating, and above all, to realize that all the hard work, the hopes and sacrifices that went into that crop of wheat for nothing, is enough to dampen the spirit of the best of men. Windows are broken, gardens smashed and waving fields of grain become as stubble. Even if the storm is short lived and the stones small, the damage may be extensive.

Although no actual physical protection against hail damage has been devised, municipal hail insurance associations operate in the Prairie Provinces. By insuring with these associations the farmers are able to protect themselves against hail loss. Each year thousands of claims are received and inspectors are sent out to survey the damage. The benefits received by the farmer depend upon the damage sustained. The inspectors send in their reports to the head office stating the percentage damage to the crop, and cheques are sent to farmers in compensation.

Some districts, of course, are more susceptible to severe hail storms than others, and not a few have been "completely hailed-out" for as many as six and seven years in succession.

However, the farmer keeps a stiff upper lip, says that "this is a good next year country", and struggles and saves in order to sow another crop of wheat the next year. In the end his efforts are justified, and we see again that patience is indeed a virtue.

No. 293 - Fri. July 19, 1940 - Industries for Canada

Mr. R. A. Butler, the British Under-Secretary for Foreign Affairs, in a recent broadcast, put his finger upon the new Empire policy exactly as we see it in Canada. Speaking of lessons of the war he said: "We may well learn to link up our future even more with the world than we do now. We may, with their (the Empire's) co-operation and encouragement learn to spread our more vital sea and air bases, our industries more widely over the British Commonwealth and British Colonial system."

The Hon. James Angus MacKinnon, Canadian Minister of Trade and Commerce, has something worth while to say about industries for Canada. In the beginning in this country, he says, we established our families under colonial policy and guidance. We built securely upon the foundations of British institutions and ideals and at the same time adapted ourselves to North American conditions. We thrived accordingly. We have now reached a stage in our development that demands a bolder outlook.

Until now it may be said, generally speaking, that British investments in Canada, following the early colonial plan, have been in the nature of money, for example through the purchase of Government and transportation securities. This was in contrast with United States investments, which largely took the form of branch plants and factories. Canada has grown beyond the branch factory policy of industrial development. This country requires industries to utilize to the full her native resources, but these should in the main be central establishments with branches and agencies wherever necessary.

But to be more specific, British and foreign investments in Canada amount to nearly \$6,800,000,000. Britain alone has invested in Canada nearly \$2,700,000,000, of which only \$370,000,000 is in branch and subsidiary companies. This compares with a total investment by the United States of nearly \$4,000,000,000, of which nearly \$1,900,000,000 is in branch and subsidiary companies. Thus about 14 per cent of the British investment is in branch and subsidiary companies as compared with nearly 50 per cent for the United States. Nearly 59 per cent of the total British investment is in government and railway securities, four per cent is in

the bonds of corporations other than branch or subsidiary plants, leaving less than 25 per cent in portfolio investments in various enterprises such as utilities, industrials, mines, merchandising, finance, and real estate, etc.

No. 294 -- Sat. July 20, 1940 -- British and United States Investments

It is apparent, continues Mr. MacKinnon, that British investment has taken the form predominantly of "portfolio" rather than "direct" investment, whereas almost one-half of American investments are of the "direct" character.

The following table shows the capital invested in branch and subsidiary companies in Canada in 1937 by classes of industry for British and United States investors:

	<u>Great Britain</u>	<u>United States</u>
Manufacturing.....	\$145,800,000	\$945,600,000
Mining.....	22,800,000	217,200,000
Utility.....	15,300,000	395,100,000
Merchandising.....	41,800,000	130,100,000
Financial.....	139,400,000	140,800,000
Miscellaneous.....	2,100,000	40,100,000
Total.....	387,200,000	1,868,900,000

These figures indicate clearly the relatively minor interest which Great Britain has taken in the direct development of Canadian resources and opportunities. Why this disparity between British and United States interest in direct investments in Canada? The reason is obvious. Distance is the essence of the movement. There are no serious political or geographical obstacles to overcome between the peoples of Canada and the United States. Millions cross the borders from both sides each year. The terminology of commerce and industry is much the same in both nations. Moving pictures, magazines and travel, while not producing identity of culture, have brought about a great measure of common culture. The organization of industry is very similar in both countries. Hence economic infiltration from both sides of the border was only to be expected.

Many direct investments from the United States were inspired by the desire to secure sources of raw materials such as lumber and minerals. Others, such as public utilities, transportation enterprises, merchandising establishments, and financial companies came into Canada to complete or extend services which the parent concern supplied in the United States. A more important group consisting of branch manufacturing concerns came into Canada in order to enable their product to be sold to the Canadian consumer because transportation or import duty costs could be saved, to meet the demand in Canada for Canadian-made or Empire-made products, to be in a position to service the goods sold.

In general the branch plant is established to overcome handicaps arising through customs barriers, consumer prejudices (patriotic) and distance. Oftentimes the tariff is the chief barrier but in many other cases where there has been a large demand for a product, the creation of a foreign-owned branch plant may be in the same category as the creation of one which is domestically owned. There is no doubt that the branch plant movement has enabled many United States parent companies to retain and expand their Canadian market and to benefit from British Empire agreements and policies. Many British concerns have followed the same course.

No. 295 -- Sun. July 21, 1940 -- Canada Important

A glance at Canada in relation to world industry will suffice to make our attitude clear, Mr. MacKinnon points out. This Dominion holds a particularly important place in world economy. Although she has less than one per cent of the world's population, Canada is sixth among the nations in world trade. Indeed she stands in fourth place as an exporter of raw materials and finished commodities.

Canada stands third or fourth among security dealers and first in tourist trade. She ranks high in all the major activities which make up the balance of payments.

On a per capita basis the Canadian figures in all these transactions substantially exceed those of the leading economic powers-- Great Britain, United States, Germany, France, Russia and Japan. In 1939 the Canadian national income per capita was among the largest in the world, although in 1937, in part as a result of the drought, Canada was in sixth or seventh position.

Industrially Canada is ranked eighth in the world, although in regard to population she is only the thirtieth. Canadian railways are the fourth longest in the world, and the volume of shipping from Canadian ports is about the fourth largest.

This is the record of a young Dominion which in three-quarters of a century has grown from a country of less than four million inhabitants to one of eleven million. The industrial development has been on the soundest economic lines, with the result that the Canadian people per capita have a remarkable high purchasing power.

No. 296 -- Mon. July 22, 1940 -- Appeal for British Industries

Concluding his appeal for British industries to establish themselves in Canada Mr. MacKinnon says:

This country, which is fast climbing into leadership in lines of activity other than those in which she has already reached a premier position, has been able to accomplish that amazing progress because of diversified natural resources, and the great agricultural areas at her command. Canada produce large surpluses of many farm products, such as cereals, potatoes, apples, cattle, pork and dairy products. There are the vast forest resources of pine and fir, as well as spruce, poplar and balsam for pulpwood.

There are mineral products in abundance. Coal, iron, silver, copper, nickel, lead, zinc, radium and a great variety of the minerals which modern industry requires for its alloys and other uses are being mined and can be mined in greater abundance to meet world needs. Special mention should be made of our iron ore developments. High bessemer grade ore is now being mined near Atikokan in Ontario, with railway connections. Millions of tons are in sight. There are tremendous deposits of iron ore of commercial grade in North Eastern Quebec and Labrador. On the Pacific Coast we have iron. Newfoundland iron ore is well known to Britishers. Germany got two million tons of it in 1938. Only this summer an important mercury deposit has come into production in British Columbia.

We provide hydro-electric power more cheaply, that is, with the application of less capital and labour, than can be done in most other countries.

Today Canada is the world's largest exporter of non-ferrous metals, wheat and newsprint paper. In fact, Canada supplies about forty per cent of the world's export wheat market, two-thirds of the newsprint in the world export market and forty per cent of the non-ferrous metals.

All this and much more than this is why I say that, with her great sea-going commerce and her important home market, Canada has reached the realization that in the near future this Dominion will become the home or headquarters of more leading industries associated with world trade. Canada is a haven of surpassing attraction for British concerns with world-wide interests because this is the new focal point where West meets East, looking as it does across the wide Pacific to Asia and Australia. Proximity to the friendly United States is of immense advantage.

We like to think that we have combined in British North America the seeds of all that is best in the old world and the new, and we are a friendly people, cast in the traditional moulds of the Englishman and the Scot, the French and the Irish, yet assimilating ourselves in our beloved new country to the somewhat different conditions under which we have to live and go forward.

And so, Mr. MacKinnon ends, we welcome British industries.

No. 297 -- Tues. July 23, 1940 -- Patriotic Italian Canuck

It is strange, is it not, to contemplate Italy at war with Great Britain -- two old friends. There is no need to comment on the following incident.

A naturalized Canadian of Italian birth has submitted to the Minister of Finance a novel plan to further free-will offerings to Canada's war cause.

He is employed in the Canadian National Railway shops at Winnipeg and is voluntarily working for the pay of an Army private. All he earns above this, will go to the Department of Finance as voluntary contribution to war effort.

"For some time past," he writes to the Minister of Finance, "a plan has been formulating in my mind, and realising the grave situation the Allied forces are facing, I feel compelled to hesitate no longer in presenting to you my plan for your kind consideration.

"I will state at the outset that I am a naturalized Canadian of Italian birth.

"I feel, together with several of my fellow workers in the Canadian National shops in Winnipeg that at the present time I am of more value to the country in remaining at work in the shops. However, because I am single and have no one dependent upon me, I feel that it would be taking advantage of the grave situation at hand to continue to work at home in perfect safety, drawing a monthly salary, while others are sacrificing so much, I feel therefore that it is my duty to do as much as I possibly can to support the Government's war effort.

"Therefore my plan is to work on the basis of a private in the Army, turning the balance of my wages every month to the Government of Canada for the duration of the war. I ask nothing in return at the end of the war."

The writer of the letter makes this further suggestion:

"In discussing this proposal with my fellow-workers we have come to the conclusion that, in all probability there are many more throughout Canada who could, and would, be glad to do likewise if the idea were presented to them for consideration. I have wondered whether a campaign to this end might be launched by the Government."

With the letter was forwarded a testimonial from the writer's employer referring to him as a "steady and conscientious worker willing to do anything that is required of him and even exceeding the requirements of a request."

No. 298 -- Wed. July 24, 1940 -- War Prisoners in Canada

Numbers of German prisoners recently arrived in Canada are now safely interned in various camps throughout the country. Broken up into small groups, they are so distributed as to present little danger to Canada.

It was to ensure that they would be beyond the reach of fifth columnists and parachute jumpers that they were removed from England to Canada. Had they been released during an invasion of Great Britain, they might easily have constituted a menace. Scattered across Canada's broad spaces, they are no longer considered to present such threat.

To those who watched beneath the ramparts of Quebec's ancient citadel, the war was brought close to Canada as the heavy clump of Nazi boots sounded on the plank platform of the railway siding and the uniformed airmen, soldiers and sailors were loaded aboard the waiting trains.

Closely ringing the entire pier area were 500 picked sentries, their bayonets fixed. Another set of guards lined the route from the ship to the trains.

First to be brought off ship were the civilian prisoners, many of them crew members of Nazi ships seized by the British Navy on the high seas. Next came the soldiers, sailors and non-commissioned officers of the Nazi air force, army and navy.

The majority of the navy prisoners were submarine crews. Included in the army prisoners were members of the Nazi "panzer" units and parachute jumpers. The latter

wore a distinctive uniform composed of slacks and jumpers made of a leather-like material.

Masks, issued for protection against their own gas while they were prisoners in the British Isles, were taken back from the prisoners when they landed in Canada.

Last to leave ship were the officer prisoners. They were followed by their own batmen, who loaded their trunks and other baggage aboard the trains.

An interesting side-light was the way in which the Nazi prisoners studied the husky and bronzed Canadians who stood guard over them. While waiting in the piers to be marched to the trains, they constantly gazed at the Canucks. The smirking attitude of one party of prisoners rapidly evaporated into one of thoughtfulness when a leather-lunged sergeant-major started to put the Canadians through their paces with smart precision.

Many Iron Crosses dangled from the tunics of the Nazi officers. One German aviator told a Canadian officer he had received his Iron Cross in the morning and had been shot down over England by four Hurricanes on the afternoon of the same day.

"Your aviators were excellent, but short on planes," he said.

No. 299 -- Thurs. July 25, 1940 -- Sleek Canadian Chaser

Without ostentation, in a war setting, one of a fleet of sleek Canadian-built submarine chasers was launched from an Eastern shipyard. While rain fell from dull skies overhead and while a couple of hundred grimy workmen cheered, the trim craft slid along greased runways into the St. Lawrence River. A handfull of company officials, several of the Royal and Royal Canadian Navy's officers and a lone khaki-clad military representative were on hand.

Constructed of Canadian materials by Canadian craftsmen, the war vessel will serve under the ensign of the British Royal Navy soon after she is outfitted.

It was a quiet formality, different from any peacetime launching, where, according to sea tradition, a woman has the honor of naming the vessel. Rear-Admiral H. A. Sheridan, R. N., Admiralty representative on the British Supply Board, cut the white ribbon that sent the champagne bottle smashing against the bow of the ship. She knifed into the waters and he declared: "Normally we have a ceremony when we launch a ship. But on this occasion no name has been given her. I wish Godspeed to this ship and to everyone who sails in her."

Later he explained that contrary to custom a woman had not been asked to participate in the official christening, simply because no name had yet been decided on by the Admiralty in London. The likelihood is, he said, that she will bear the title of a Canadian wild flower, following the style of similar British-made submarine fighters.

Nearby, other chasers, which shortly will be completed for use in the British Navy or the Royal Canadian Navy, lay silent while workers put aside blowtorches and rivetting machines to watch the launching.

No. 300 -- Fri. July 26, 1940 -- Canada is Air Conscious

During the last few years and particularly the last few anxious months, Canadians have become more and more air conscious. Wings are playing an ever increasing part in the progress of the nation, and mankind in general. However, the highpowered, streamlined, mechanical birds of our modern airlines took years to develop, and they represent decades of experimenting, of tragic failures, and small but vital successes.

Man's desire to conquer the air dates back to the early days of Greek mythology, whence we get the story of one airminded Apollo who fashioned a pair of wings for his friend. The latter, trusting soul that he was, donned the costume and soared heavenward with the ease and grace of a bird. All went well until he got too close to the sun, when the wax joining the wings to his body melted and the poor chap was torpedoed to earth. A sad tale indeed, but it serves to show the antiquity of the idea of flying.

At the outset, the main object was to get off the ground. All attempts at flying were made in balloons, and other lighter-than-air craft, and little or no attention was paid the direction of the flights. Around 1784 a melloon-shaped balloon was fashioned and with a crew of six manning silken oars, succeeded in navigating a slow curve. This was the initial attempt made at controlling the course of the flights, and the experimenters were hailed as heroes by the open-mouthed and sceptical onlookers.

It was not until the late 1800's that any trials were made with heavier-than-air craft. Then, using the bird for a model, gliders were designed. In 1903 the Wright brothers made the first successful flight with their home-made aeroplane. From this point on phenomenal strides were made in the field of aviation. The Great War broke out and the planes were designed essentially for military purposes, but were far more efficient than any constructed up to that time. Up to and during the four trying years of the war, planes were made almost entirely of wood, but special straight grained wood was necessary and the vast demand seriously depleted the supply. As a result, manufacturers began experimenting with metal machines. Aluminum alloy was found to be particularly successful, and today aeroplanes are made almost exclusively of metal.

In the years immediately following the Great War, aviation is said to have passed from its "childhood" into its "adolescence". Planes with the "high" cruising speed of 100 m.p.h. came into use. Many machines were being equipped with two and in some cases three engines. Although noisy and none too comfortable these airplanes were considered to be the last word in efficiency. In 1927 Colonel Lindbergh completed his epoch-making solo-flight across the Atlantic and aviation was truly coming into its own.

Since that time tremendous strides have been made in this field, and there is no reason to doubt that still greater progress will be made as the years roll by.

No. 301 -- Sat. July 27, 1940 -- Air Travel in Canada

The air ports of Canada fascinate us, and it is now a favourite excursion to visit them and see the passengers alight and depart on this swift journey across the broad Dominion. People are beginning to be accustomed to that type of travel

and like it, as witness the statistics for last year.

Air travel in Canada increased by almost one hundred per cent in 1939. The passenger miles flown numbered 26,107,750 miles as against 14,886,718 passenger miles in 1938. Air passengers carried during the year numbered 161,503 as against 139,806 in the preceding year, but the more marked gain in the mileage flown is attributed to the longer flights made possible by the inauguration of passenger service on the Trans-Canada Air Lines in 1939. Canada has long been a pioneer in freighting by air, and the provision of facilities for trans-continental air travel is significant of the advance being made in air passenger traffic.

Freight transportation by civil aircraft during 1939 showed little change, amounting to 21,253,364 pounds compared with 21,704,587 pounds in 1938. Mail carried by air totalled 1,900,347 pounds as against 1,901,711 pounds. Considerable sketching and photographing from aircraft was also carried on during the year. The area sketched in 1939 was 3,420 square miles and the area photographed, 46,344 square miles. The number of forest fires detected and reported was 181 as compared with 368 in 1938.

The principal activity of other commercial aircraft in Canada during the year was the carriage by air of freight, passenger and mail to the more remote parts of the country. The freight consisted largely of machinery and supplies for mines in the northern regions of Quebec, Ontario, the western provinces, and the Northwest Territories. Formerly accessible only by dog team or canoe, many mining areas in the North are now served by aircraft operating on regular schedules. Other activities of commercial airmen included forest fire patrols, timber cruising, air photography, and topographical survey work.

No. 302 -- Sun. July 28, 1940 -- Air Force Recruits

Requirements of the Royal Canadian Air Force for recruits were explained in some detail by Hon. C. G. Power, Minister of National Defence for Air to the House of Commons this week. He pointed out that recruits were divided into two classes, first air crews, those who would actually fly and second, maintenance personnel both trained and untrained. In the first group were included pilots, air gunners and observers; in the second those whose duties were necessary to the operation of active service squadrons or training establishments.

Both of these groups required training, thus the problem of recruiting became in part, a training problem, and the rate at which recruiting could proceed was conditioned upon the rate of extension of existing training facilities.

Enlistments had been proceeding at a rate of about 1,000 per week, which under the circumstances, the Minister regarded as satisfactory. Since September 15 last over 115,000 men had requested and obtained information relative to enlistment in the Royal Canadian Air Force. Many had completed their enlistment papers and over 26,000 had passed the medical test and had been trade tested. Of these over 13,000 officers and men had been enlisted and the balance were being called up as rapidly as circumstances permitted. Of the 13,000 who had not been enlisted 1,433 desired to be trained as crew men; 7,962 wished to be trained tradesmen and 4,000 were unskilled.

As far as individual recruits were concerned the Minister said, their selection was determined by priority of application except to the extent that there might be a special need for those with special qualifications. Every applicant for enlistment was interviewed personally. If he possessed the necessary educational or other qualifications he was assisted in filling out an application form and advised as to how he should obtain proof of age and education. After that came the medical examination and when all requirements were met the recruit had to wait until the R. C. A. F. were in a position to take him on strength. He was then called up.

"We are keenly aware," said the Minister, "of the special qualities our young men possess and that fit them particularly to serve to advantage in our air forces, and we are determined to do everything in our power to make sure these special qualities are employed to the fullest extent."

No. 303 -- Mon. July 29, 1940 -- Hoodoos

When is a lady not a lady? -- when she's a Hoodoo.

Now, before our feminine readers arise in righteous wrath, let us explain that when we mention Hoodoos, we are getting down to things earthy, that they are not in any way connected with the nether world, witchcraft or voodooism, as their names would suggest. As a matter of fact, they are creations of old Mother Nature herself, works of art, unbullied by the hand of man. Therefore, the comparison, albeit remote perhaps in some opinions, is not in the least derogatory.

The Hoodoos under discussion are huge pillars of earth, cut by the constant wearing away by rain water of firmly cemented boulder clay and gravel. They have a protective capping boulder, balanced on the top, which reveals the original surface slope of the earth.

The allusion to their "feminine" appearance comes from the fact that, taken at a glance, a group of Hoodoos, looks for all the world like a crowd of ladies of the late 1800's with long, snug fitting coats, and huge wide-brimmed hats, talking and nodding to each other at a little social gathering. A closer inspection reveals, of course, several distinct differences, the contrast being, beyond the shadow of a doubt, in favor of the "real thing".

Besides being interesting and fantastic sights for tourists, these "demoiselles" are valuable sources of information for geologists concerning the original structure of the landscape. In Canada, there are undoubtedly several "settlements" of Hoodoos, but one particularly good specimen group is to be found in the valley of the Kicking Horse River in British Columbia.

No. 304 -- Tues. July 30, 1940 -- Rat a Fish Killer

Wolves, bears, fur seals and many other animals are familiar to the public as enemies which prey heavily on the fish stocks of Canada. But how many persons have ever placed the common rat in the category of a fish destroyer?

Recent evidence received by the Dominion Department of Fisheries from one of its officials in Nova Scotia presents a strong case against the rat as a fish enemy.

This official in checking up on his supply of year-old speckled trout maintained in the Cobequid Hatchery at Antigonish recently was both surprised and puzzled when he found no fewer than 217 of the young fish missing from the circular pond where the fish had been kept during the winter pending planting operations in the Fish Culture re-stocking programs. No clues were found as to the disappearance of the missing fish and for a time the matter was a profound mystery to hatchery employees.

With the coming of warmer weather and removal of the brush used for insulation around the intake pipes leading to the pond, came a solution of the disappearing trout and a strong case against Mr. Rat. As the brush was being removed a large rat ran out from under it, and subsequent examination revealed the animal's nest with two piles of freshly killed speckled trout beside it. The rat had captured the young fish and killed them, then removed them carefully to its nest apparently as a food supply. The trout were from three to four and one-half inches long, and it is assumed the rat must have lain in wait for the young trout near the shallower parts of the pond, pouncing on the schools of small fish as they ventured near the shore.

Commenting on the occurrence, the hatchery superintendent said: "This is the first experience had with rats interfering with live fish of this size." The case against the rat is apparently a good one and the fact that such a considerable amount of damage was done in a comparatively short time, must place the rat well to the front in the list of young fish enemies. Removal of the remainder of the brush revealed no additional nests or rats and the damage was evidently all caused by the one animal.

No. 305 --- Wed. July 31, 1940 --- Our Most Decorated Ace

Air Marshal W.A. Bishop, V.C., D.S.O., M.C., D.F.C., rated as one of the greatest air fighters in the world to-day, is now back in Canadian Air Force uniform as Director of Recruiting. At a recent meeting in Ottawa Air Marshal Bishop said:

"Twenty-five years ago I was proud to wear the uniform of the Royal Flying Corps. We felt, those of us in the Flying Services in the last war, that we had done our little bit to start a tradition for a new Service. The bravery, the dauntless courage of the Royal Air Force to-day, in which so many hundreds and thousands are Canadians, makes every man in the Royal Canadian Air Force thrill with pride that it is his privilege, as it is mine, to wear the same uniform as those gallant lads who, against great odds, are hourly showing the enemy and the world that the spirit of our Force is unbeatable.

"The Challenge comes to us in Canada to-day not only from those immortal souls who died in the first Great War but from the beleaguered bastions of Dunkerque.

"Yes -- the heroism of Dunkerque, the glorious gallantry of men of our two great races in Canada -- the gallantry of the men who fought and endured on land through the greatest retreat in history -- the gallantry of the Navies -- those grim relentless sentinels of our security; and above all, in every sense, the gallantry of those glorious captains of the clouds -- the youngsters of England,

fighting against vastly superior numbers -- forging a ring of flame around the slowly-giving ranks of wearied powder-blackened, torn but unbeaten khaki-clad men; yes, above all, guarding and guiding the undefeated troops of England home again.

"Per ardua ad astra" -- that is their motto. Let that be ours in Canada to-day through days of hardship and difficulty and distress."

Bishop brought down the first of his 72 enemy bag in March, 1917. The following month he was awarded the Military Cross; in June of that year he earned the Distinguished Service Order and the Victoria Cross was given him in recognition of one of the most daring war deeds. He attacked an aerodrome twelve miles behind the German lines single-handed. Three planes rose to meet him and were all shot down. King George the Fifth personally pinned the three decorations on Bishop at Buckingham Palace telling him he was the only man who had received them all at the same time. Later exploits gained Bishop the Distinguished Flying Cross, the Cross of a Chevalier of the Legion of Honour, and the Croix de Guerre. At the age of 24 Bishop had won almost all the coveted awards of war service.



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