



# THE ROYAL BANK OF CANADA MONTHLY LETTER

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## CANADA'S NATURAL RESOURCES

CANADA'S great store of natural resources is not something locked away in a vault for misers to gloat about. It is a treasury of material things to be turned into useful commodities by our skill and energy.

He is, however, a wise man who takes stock every once in a while to see how his inventory stands, and to learn whether he is making the best use of what he has.

Every civilization rests on a different basis of resources. Adam, when forced to till the ground, was using the resource of agricultural soil; we, when we produce atomic energy from uranium, are tapping not only a deeper layer of the earth, but of intellect. Given our vast basic resources and the natural energy and skill of enterprising people to develop them, it is not surprising to find material well-being flourishing as it does in Canada.

We had, for generations, the reputation of being a supplier of raw materials; but the space of only one generation has witnessed a great change. Today Canada is not only a rich storehouse of materials but an industrial nation fabricating natural resources into usable goods.

### *Exchange of Resources*

The fact that countries have different natural resources poses important problems for solution by members of the human family. While no nation boasts of a supply so complete that it can cut itself off wholly from the rest of the world, some are much closer to that self-sufficient state than others. One of the perplexing questions for a country wealthy in natural resources is: how far should I forego a nationalistic economy in the interest of international good?

Never in our history has the world been so important to Canada, and at the same time never has Canada had so great opportunity to be of service to the world.

In 1945 our net value of primary production was \$2,566 million. After processing these commodities in our factories, we exported goods to the amount of

\$3,218 million. This represents the extent to which we were able to exchange goods of Canadian production for goods made elsewhere.

### *A Well-balanced Economy*

It is not any one resource, however big it may be, that gives Canada importance and makes her what she is today, but the complementary nature of her resources and the "wholeness" they give her economy.

Canada has, per head of population, more coal and lignite reserves, more potential water power, and more arable and other cultivated land than any other country. She is second in her reserves of iron ore, and fourth in pasture land. A few representative figures may be interesting. The potential water power per head in the leading 32 countries is 0.16 horsepower; in Canada it is 2.27 horse-power. The iron ore per head in all countries is 24.6 tons; in Canada it is 217 tons. The arable and other cultivated land per head is 1.30 acres in all countries; in Canada it is 5.04 acres.

It has been estimated that about one-quarter of Canada is covered by forest growth, and that about one-quarter of this bears saw-timber of merchantable size, of which two-thirds is in British Columbia. We have a quarter million square miles of fresh water, more than any other country. We are rich in the important minerals.

Production of resources is conditioned by climate, and Canada is singularly fortunate in this regard, so that our climate might be reckoned as another natural resource.

### *High Living Standard*

There emerges from this survey cause for general satisfaction. Based upon the wealth of their natural resources, Canadians enjoy a command of goods and services, of horse-power per person, of food, housing, comforts, leisure and entertainment which cannot be beaten anywhere in the world. This has been achieved without surrender of independent personality, without regimentation, dictatorship or government bossism.

Canada is a free country, in the old sense of "free" which means that its people are at liberty to worship according to their consciences, choose their own work, speak according to their urges, think and discuss all manner of things, and read a free press. Canada has a democratic government, in the old sense of "democratic" which means elected by free vote of the people and responsible to the people.

As to the level of material living, it would be easy to record the number of motor vehicles, baths, radios and telephones, but far better is a story related of the late President Roosevelt in Geoffrey Gorer's new book *The American People*. He and his advisers were discussing how to get literature into the hands of the Russian people in order to convert them from a totalitarian to a democratic way of life. After talking about some of the classical texts of democracy, President Roosevelt said: "If I wanted to point out to the Russians the superiority of our way of life, I should try to get just one book into their hands — the Sears-Roebuck catalogue." Any Canadian department store catalogue, laid alongside a list of the average weekly earnings of the people of Canada, would give a better idea than many pages of statistics of the high standard of living in this country.

#### *Luxuriant Forests*

Canada has a fair share of the world's 5,000 million acres of forests. Our forests cover a vast belt from 600 to 1,300 miles wide right across the continent from the Atlantic to the Pacific. This forest land constitutes 38 per cent of our land area. It bears 130 species of trees, of which 33 are conifers.

According to a statistical record published last year by the Department of Mines and Resources, the lumber industry had 5,300 establishments in 1945, employed 44,000 persons, and its gross production was valued at \$231 million; the pulp and paper industry had 109 establishments, employed 40,000 workers, and turned out \$400 million worth of goods. The Department of Trade and Commerce estimate for 1945 reports a total of 200,000 employees in the wood and paper group of industries, with a gross production of \$1,185 million.

As to industries developing out of forest products, the Minister of Finance told the Lumbermen's Association in February that exports of wood, wood products and paper "represent the largest single category in the published statistics and amounted to \$886 million during the year 1947, or 32 per cent of our total exports of Canadian produce." The pulp and paper industry leads all other manufactures in net value of production, and is one of the world's great industrial enterprises.

#### *Abundant Minerals*

Having reached her western limits in wheat and having embarked on fullest use of her timber, Canada is now rolling back her northern frontier in search of minerals. Increased knowledge of the geology of the northwest, and changes in transportation and communication, have brought under scrutiny vast areas

which were hitherto looked upon as waste rock. One company is spending \$50,000 a year for three years on exploration, and another expedition will go to a remote and unexplored part of the Arctic at a cost of \$30,000.

The leading five metallic minerals produced in Canada last year were gold, copper, nickel, zinc and lead, valued at \$360 million; the leading four non-metallics were coal, asbestos, petroleum and natural gas, valued at \$137 million; and in addition there were clay products and other structural material valued at \$73 million. The total mineral production was valued at \$619 million.

Canada's streets are not paved with gold, as some immigrants of the last century were led to think, but at least one footpath had its gold cobblestones. A well-used trail in the Yellowknife district crossed a vein that remained unnoticed by the men passing back and forth every day. When discovered, small pieces of quartz that had been scuffed loose by passing feet were found to assay about \$700 in gold to the ton.

Nickel, which comes mainly from the nickel-copper deposits of Sudbury, Ontario, increased in output four times between 1914 and 1939, while copper output increased seven times, lead eleven times and zinc 17 times.

Iron provides the foundation of modern industry. Canada's resources in iron ore are largely unknown. Discoveries in the Lake Superior region a few years ago were developed from 1945 onward. Partial exploration of deposits astride the Quebec-Labrador border reveal iron ore of high grade. It seems likely, says *Canada Year Book*, that Canada's production of iron ore will long continue to show a general upward trend.

Canada has tapped important deposits of uranium ore, major source of atomic energy, and still another deposit was found in March. The Eldorado mine is well known as the world's second-largest source of an ore from which radium and uranium are extracted; the latest discovery is near Flin Flon, Manitoba.

Canada has been the world's leading producer of platinum since 1934, when it displaced Russia. Industrial uses have expanded greatly in recent years, calling for all the platinum yielded by the nickel-copper ores mined in the Sudbury district.

Although the material which is its principal component is not a natural resource of Canada, but is imported from other countries, aluminum must be mentioned in this list. Its manufacture in Canada is due to our great wealth of another natural resource, water power.

Aluminum Company of Canada employs 15,000 persons, with an annual payroll of \$35 million. In addition, there are 1,500 companies fabricating aluminum, with an estimated employment of 50,000 persons.

The Canadian company, with a capital investment of \$350 million, manufactures 25 per cent of world production. Last year's value was \$150 million, of which 90 per cent was exported.

### *Asbestos, Coal and Oil*

Canada is rich in non-metallic minerals. It is the world's chief source of asbestos, production of which is concentrated in the Eastern Townships of Quebec. The value of annual production increased from \$24,700 in 1880 to \$24,500,000 in 1946.

Coal is one of our problems. This country is one of the world's richest in bituminous reserves, but they are largely located in the wrong places, far removed from industrial centres. Because of this, Canada has never supplied more than about 50 per cent of the nation's market requirements. In 1938 we produced 14 million tons and imported 13 million tons; in 1946 we produced 18 million tons and imported 26 million tons.

Canada suffers from oil anaemia, producing only about a seventh of her needs from her own wells. Widespread seepages in favourable structures in the Mackenzie River basin indicate the possibility of opening up new fields to supplement those at Turner Valley and Fort Norman. Just last winter a new well blew in at Leduc, Alberta. Total production in 1947 was 7,632,204 barrels, of which New Brunswick yielded 22,848 barrels; Ontario 124,954; Saskatchewan 528,932; Alberta 6,711,276; and the Northwest Territories 244,194.

We have enormous oil deposits in the tar sands of Alberta, but the difficulty is to find an economic method of reclaiming the oil. According to *Canada Year Book* this is "the greatest known oil reserve on the face of the earth." Estimates vary between that of Canadian geologists at 100 billion tons and that of the United States Bureau of Mines at 250 billion tons.

### *Agriculture Flourishes*

Agriculture is, of course, Canada's leading primary industry, furnishing a direct livelihood to about one-quarter of the people and providing raw materials for many manufactures. There are different phases of the industry; the Maritimes with their emphasis on products other than grains, Ontario and Quebec with their mixed farming, the Prairies with their overwhelming stake in wheat, and British Columbia with its fruits.

The area of arable lands can be estimated only approximately, because every decade sees an extension of the land found suitable for cultivation. The total agricultural land, present and potential, is given by *Canada Year Book* as 548,000 square miles, or 351 million acres. Crops range from tobacco, grapes and peaches, which are grown in the southern parts of Quebec and Ontario, to the quickly-maturing wheat which ripens in districts where the summer is very short.

The area given to grain in 1947 totalled 46.7 million acres, of which 24 million acres were given

over to wheat. The wheat crop in the past 21 years yielded 7,862 million bushels, an average per year of 374 million bushels.

Canada has won the International prize for wheat 29 times in the past 33 years, and the International oats championship 16 out of twenty years.

Technological progress has marched hand-in-hand with territorial expansion. The number of tractors on farms increased from 47,000 in 1921, to 159,000 in 1941, and in this latest census year there were nearly 400,000 automobiles and trucks on Canada's farms. The average Canadian farm worker, with the use of machines and science, works about 85 acres of improved land.

The past 80 years have seen Canada change from a land of sickles and scythes to one of threshing machines and combines; from ox-cart and buck-board to truck and tractor. Zimmermann, in his book *World Resources and Industries*, contrasts the seven million farmers in North America with the tens of millions in Europe and perhaps hundreds of millions in Asia, and he adds: "A better example of the effect of machine energy and of the capitalistic method of production on the extent of land utilization and the determination of cultivability can hardly be imagined."

### *Great Fishing; Rich Furs*

Fishing was probably the first industry carried on by Europeans in the New World. Long ago those stalwart adventurers caught their fish off Newfoundland and the Maritimes, cured or dried them, and sailed back to sell them in Europe. Today, two of the four great sea-fishing areas of the world border on the east and west coasts of Canada.

There are still largely unknown, but very great, possibilities of increasing the economic value of fisheries in all our waters. The situation of fishermen would be easier if Canadians would use more fish. The catch in a year could provide 120 pounds for every person in Canada, whereas we use only 30 pounds on the average.

Inland waters, rivers and lakes contribute about one-seventh of the total fish catch. Canada has 228,000 square miles of fresh water lakes within her borders and these abound in fish of the finest quality. In 12 years the average annual value of production was: sea fisheries \$50 million; inland fisheries \$8.1 million. Export normally accounts for 70 per cent of the total value of the catch.

Raw furs are the chief commercial product from a big region in the northern part of Canada, but not quite so many people are engaged in trapping as is claimed in a book published last year. The author says: "Tens of thousands of American Indians still roam the lonely, pathless forests of north-west Canada, trapping the fur-bearing animals." It seems too bad to spoil a romantic exaggeration in an otherwise informative book, but the truth is that the total Indian popu-

lation of Canada is only 126,000, of whom only 3,816 live in the Northwest Territories, and of these 2,739 are non-trap-laying women and children.

However, Canada is one of the two great fur-producing countries of the world. We have a wide variety of fur, including bear, wolf, fox, weasel, otter, beaver, marten, fisher, mink, rabbit and muskrat.

During the 20 years ending in 1944 the value of fur production averaged about \$15 million. Fur farming, supplemented by the development of marshlands and establishment of muskrat and beaver preserves has provided work for hundreds of Canadians. At present the pelts of ranch-bred animals amount to about 30 per cent of the total annual raw fur output.

#### *Ten Million Horse-power*

We have left to the last of our material resources one which is most important in the processing and development of all others: hydro-electric power.

Water flow has been an important natural resource in Canada from the time the first settlers set up their water mills to grind grain. The quantity of power available made possible the industrial evolution which astonished the world during the late war, and brought this country's economy from one based largely on vegetable growth to one about fifty per cent industrial.

Since 1901, when hydro-electric installation was less than a quarter million horse-power, Canada's total has climbed to a million in 1911, three million in 1921, six and a half million in 1931, and to something over ten and a half million today. This latest figure represents only slightly more than 20 per cent of our recorded water power resources. The average of 834 developed horse-power per thousand population in all Canada works out like this provincially: British Columbia 878, Alberta 130, Saskatchewan 108, Manitoba 618, Ontario 656, Quebec 1,584, New Brunswick 272, Nova Scotia 215, Prince Edward Island 28, and Yukon and Northwest Territories 817.

Central electric stations, which develop 90 per cent of the power used in Canada, produced 45 billion kilowatt-hours of electricity in 1947. This compares with about 28 billion ten years previously and 12 billion in 1926. In those same years the electricity used per capita climbed from 1270 kwh. to 3600 kwh. Sixty per cent of all Canadian homes are wired for electricity. There are under construction plants which will add a capacity of more than one million horse-power, of which half will come into supply in 1948.

#### *Thinking of the Future*

These are days when we have so much trouble on our minds that rumblings of more troubles ahead make little difference. To the casual individual, the Canadian nickel resources of the year 2048 do not matter very much, nor may he be particularly interested in what forest trees are left standing in the year 2000.

The thoughtful citizen, however, is aware of his responsibilities for the continuity of group life, and particularly for the chance he gives future Canadians to live satisfactorily. Destructive practices today can milk the best of our resources, to the possible enrichment of this generation, but at the expense of impoverishing our children's children who will see the turn of the century.

It has been pointed out in carefully documented reports that world population has increased until there are only about two acres of productive land for each individual, and while destructive practices are daily causing these two acres to shrink, population is mounting at the rate of almost 50,000 people per day. These arresting facts are part of a report to be discussed by the Inter-American Conference on the Conservation of Renewable Natural Resources in September.

Conservation does not mean, as opponents or muddled people affirm, a restriction of use, but a wise exploitation with a minimum of waste, a maximum utility for all purposes, and a maximum replacement of such resources as are replaceable.

This article has been about the boundless material natural resources of Canada, but far more important than all these are the human resources of the country.

A ton of coal can produce more mechanical energy than a thousand men, but not all the nearly one hundred billion tons of coal buried under Canada can contribute as much planning and inventing, or the mental urge and spiritual feeling of a single human being.

Canada is the home of thirteen million people, including men, women and children who became Canadians out of 46 other national groups. Whether born here or elsewhere, all Canadians are heirs to the freedom of this democratic country, in which they find, or are building, a standard of living second to none in the world.

Canada has risen to her present position of influence and prestige through the enterprise and character of her people and their energy in using intelligently the resources she has provided. By exercising foresight and using our heads and applying our capacity for work we can assure that this country shall have ample and diversified resources and industries for generations to come.

There are always impractical people interested in Promised Lands where everything will be easy and free. Canada, whose resources we have reviewed, comes as close as reasonable men want to a Promised Land, but she does not promise things free. All she says is that she will provide the raw materials in abundance if we will do the work needed to turn them into usable goods.