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THE PROMISE OF THE NORTH

An address by the Deputy Minister of Resources and Development, and Commissioner of the Northwest Territories, Major-General H.A. Young, delivered at the Annual Meeting of the Canadian Manufacturing Association, Toronto, May 28, 1953.

During the past ten years or so popular interest has become increasingly focused on the development of the Northwest Territories and the Yukon. This interest is founded on the substantial developments that have already taken place in those territories, and it is maintained and stimulated by the even brighter prospects that appear to lie ahead. A further contributing factor, I suspect, is the romance that always attaches itself to the opening up of a frontier region, even when accomplished with the aid of aircraft and Geiger counters rather than with dog teams and pick.

Up to the present very little of the development of the territories has been in manufacturing, and the little that has taken place in that field has been mainly in the form of concentrators for the mining industry. There are, however, prospects now being studied which, if they materialize, could well bring a smelter to the Northwest Territories and a fairly wide range of electrometallurgical and electrochemical industries to the Yukon or northern British Columbia. If this should happen, the centres of population which would spring up might well of themselves provide a stimulus for the establishment of additional secondary manufacturing industries.

However, before I talk about the possible development of northern manufacturing let me first describe briefly the mineral and water-power resources of the territories, because it is on the development of these resources that the expansion of manufacturing will depend. First, a word about the physical characteristics of the region. The climate is rigorous, but this is not so serious a factor as I think many people imagine. Practically all of the Yukon and of the western mainland portion of the Northwest Territories lies in the sub-Arctic rather than in the Arctic, if we take the geographer's definition of the Arctic. This definition is the region where the average mean temperature of the warmest month of the year does not exceed 50 degrees Fahrenheit, which coincides very closely with the tree line. The only portions of the Northwest Territories and the Yukon where active mineral exploration is now taking place and which can be described as Arctic are the northern coasts of the two territories and the Keewatin District of the Northwest Territories, which lies to the west of Hudson Bay.

The winters in these sub-Arctic regions are certainly cold, but the summers are not so much cooler than here in Ontario. For example, at Fort Smith, which is typical of the region where Yellowknife lies, the average daily mean temperature in January is about 30 degrees less than that of Ottawa, but the average daily mean temperature in July is only 10 degrees less than that of Ottawa.

At Mayo, which is typical of the Keno Hill mining region in the Yukon, the differences with Ottawa are much the same. What adds to the severity of the northern winters is, of course, their length. Fort Smith has an average frost-free summer period of only 57 days, and Mayo one of 66 days, compared with 148 frost-free days in Ottawa.

Another factor important in the development of these areas is the problem of transportation. In part this is the direct result of their remoteness. For example, Yellowknife is 650 miles from Edmonton by air and 885 miles by rail and water. Hay River, which is on the south shore of Great Slave Lake and which is the only settlement in the Northwest Territories which is connected by highway with the provinces, is 675 miles from Edmonton by road. Whitehorse, on the Alaska Highway, is 1,300 miles from Edmonton by road and 1,015 miles from Vancouver by sea and rail.

In part, . . . the problem is one of the difficulties and cost of providing adequate transportation facilities. It is true that the airplane has done wonders in opening up the country, particularly for prospectors, and it will continue to play a dominating role in this field. In the Northwest Territories, because of the plethora of lakes in the Precambrian Shield, planes can take prospectors into remote areas, provision them, and even bring in such equipment as drills. The Yukon, apart from its arterial highways, which I will refer to later, is less favourable to the prospector, because lakes in the Cordilleras are few and far between. Once the resources have been proved and production is planned, however, whether the property lies in the Shield or in the Cordilleras, surface transportation becomes essential both for moving heavy equipment into the area and for moving out the product - unless it be gold, which can profitably be carried by air.

In surface transportation lies the principal difficulty of northern development. Water transportation is slow and limited to a short season, and thus involves the costly storage of large inventories. Railroads and roads are expensive both to construct and maintain, and the terrain sometimes makes long detours necessary. Economies can sometimes be achieved by crossing rivers by ferries in summer and ice bridges in winter, but this means a substantial period during the freeze-up and the breakup when the road is unusable. Winter transportation by tractor train is feasible but very costly. Air transportation is, of course, feasible during both winter and summer, but, excepting where landing strips are available for wheeled aircraft, it is interrupted during the freeze-up and breakup.

Clearly the difficulties of transportation are problems which have to be reckoned with in the development of northern Canada. They add directly to the cost of transporting materials into the region and transporting the product out, and they add indirectly to labour costs by making it necessary to pay higher wages than are customary in the provinces and to pay the workers' transportation costs into and out of the region. The Government has taken considerable steps to mitigate the high costs of transportation. For example, it paid two-thirds of the cost of the Alberta section of the 385-mile Mackenzie Highway from the Peace River district to Great Slave Lake, and the whole cost of the Northwest Territories section, amounting in all to \$2,800,000.

The Government also built the Whitehorse-Mayo road, 247 miles long, connecting at Whitehorse the Keno Hill mining region with the Alaska Highway, which serves as a most valuable artery through the southern portion of the Yukon. The cost of the Whitehorse-Mayo road including ferries was \$4,450,000. Considerable assistance has been given to the construction of local mining and other roads in the Northwest Territories and the Yukon. Other governmental contributions to transportation include the construction of airports, docks, and similar facilities.

While I am on the subject of measures taken to assist industry in overcoming the physical difficulties of developing the north, I might mention that the Government has constructed two power plants to assist in mineral development, one on the Snare River to supply the Yellowknife area and the other on the Mayo River to supply the Keno Hill area. The rates charged for power from each of these plants are calculated to amortize the cost of the plant over twenty-years, but the mining industry benefits by a rate of interest lower than what would otherwise have to be paid or by being relieved of having to provide the capital itself. The Government has also helped in the construction of community facilities such as water and sewer systems, schools and hospitals. Such facilities are important in encouraging people, particularly married men, to live in these areas, and I would like to emphasize at this point that, in spite of the remoteness and the rigors of the climate, a comfortable and sociable community life is possible in most settlements in the north.

So far I have discussed what might be called the discouraging side of the physical attributes of the Northwest Territories and the Yukon. These aspects are by no means negligible, but they are dwarfed in economic importance by the dominating geographical feature of the Canadian north, which is its geological structure. The eastern and central portions of the mainland area of the Northwest Territories, and much of Baffin Island, are covered by the ancient rock of the Precambrian Shield. The Mackenzie Basin is an extension of the Central Plains. The western boundary of the Northwest Territories and almost all of the Yukon Territory lie across the Cordilleras and their flanks. Since the Precambrian Shield and the Cordilleras are the two great metal-bearing regions of the North American continent, and since the Central Plains are the great oil-bearing region, it stands to reason that the Northwest Territories and the Yukon are potentially one of the great rich mineral areas of the world. While their remoteness, and to some extent the rigorous nature of the climate and the toughness of the terrain, have up to the present deferred the development of these riches, there is little doubt in my mind that in the space of a few decades a very substantial proportion of Canada's mineral wealth will come from these areas.

Current mining production in the Northwest Territories covers gold at Yellowknife and its vicinity and uranium at Great Bear Lake. Gold production in the Northwest Territories started in 1938; in 1939 it amounted to \$1,800,000 and by 1952 had risen to \$8,400,000. Figures for uranium are not available. Petroleum is produced at Norman Wells, but only in sufficient quantity for markets in the Mackenzie District.

In the Yukon current production is centred on gold, silver, lead and zinc - and a little coal for local use. Almost all of the gold comes from the historic creeks of the Klondike, where it is won by colossal dredges which contrast strangely with the panning of the days of '98. The production in 1952 was valued at \$2,700,000. Silver, lead and zinc come from very rich deposits in the vicinity of Keno Hill. The 1952 output of silver was valued at \$3,300,000, lead at \$2,950,000 and zinc at \$1,900,000.

The gold mines and the pitchblende mine in the Northwest Territories and the base metal mines in the Yukon all operate concentrating mills. A refinery is operated at the Norman Wells oil field and is capable of producing all types of petroleum products used in the Territories with the exception of aviation gasoline, the alkalite for which is imported from "outside". There are as yet no smelters either in the Northwest Territories or the Yukon. Secondary manufacturing industries are limited to a soft drinks bottling plant in Yellowknife, but plans are under way for establishing a brewery at Whitehorse.

However, as I indicated earlier, the really exciting side of the picture lies not in present mineral production, important as this is, but in the bright hopes for the future. Taking first the Northwest Territories, any marked improvement in the price-cost relationship of gold would almost certainly bring several additional mines into production, and there are most interesting prospects in base metals.

To take an example, a large number of claims have been staked in a highly promising lead-zinc deposit at Pine Point on the south shore of Great Slave Lake, and while it may be several years before a decision will be reached as to whether or not a mine will be developed, the present prospects look good. If a mine does come into production at that place, it will be one of the biggest lead-zinc producers on the North American continent and will almost inevitably result in the extension of the railroad to the shores of Great Slave Lake. Whether a smelter would be constructed at Pine Point or whether concentrates would be shipped south for smelting would depend on many questions yet unresolved, one of which may be whether or not natural gas can be discovered in the area. A mine at Pine Point would produce a centre of population at least two or three times the present size of Yellowknife, and larger still if there should be a smelter. A town of this size might well stimulate the development of small secondary industries, particularly since low-cost power would be available. Furthermore, there are other interesting base metal prospects on both the north and south sides of the East Arm of Great Slave Lake. Some of these may conceivably prove to be economic even without a railhead on the Lake, but should the development of Pine Point bring such a railhead to the Lake, then the economic outlook for prospects in this area would be greatly enhanced.

Other prospects of considerable importance include nickel deposits at Ferguson Lake and at Rankin Inlet, in Keewatin District to the west of Hudson Bay.

Interest in the Keewatin District has been further stimulated by the large-scale geological survey undertaken in that area last summer by the Department of Mines and Technical Surveys. Helicopters were used to cover a total area of 57,000 square miles and much ground favorable for prospecting was located.

In addition to metals, oil has recently become the subject of intensive exploration in the Northwest Territories. During the last 18 months the wave of petroleum exploration which had rolled northwards in Alberta has surged over the boundary into the Territories. Petroleum and natural gas exploration permits granted or applied for in the Northwest Territories since the fall of 1951 now cover an area of 35,000,000 acres, which is as large as New Brunswick, Nova Scotia and Prince Edward Island all put together.

Turning now to the future prospects of the Yukon, there are also promising developments in that territory. Spectacular expansion of production is taking place in the Keno Hill region; the figures which I gave you a few minutes ago for the 1952 output of silver, lead and zinc were substantially higher than those for 1951, and I understand that there is every indication that 1953 will show a further big increase. Many interesting base metal prospects are being explored throughout the Yukon, one of the most promising being a nickel-copper discovery at Kluane Lake close to the Alaska Highway. The St. Elias range, in which this discovery lies, gives promise of holding other important copper deposits. There are also base metal prospects at various points in the Selwyn mountains on the eastern boundary of the Territory. Iron-ore deposits exist in this range and are believed to be large; while they are not of immediate economic importance, their long-run value may be great. Exploration for oil is being carried on in the northern section of the boundary between the Yukon and the Northwest Territories.

Quite possibly, however, one of the most important of the resource developments in the Yukon during the next decade will be in the field of hydro-electric power. You will have read reports of investigations now being undertaken by a Canadian company into the possibility of developing a large volume of power from the headwaters of the Yukon River and certain of its tributaries. Whether this power will be developed in the Yukon or in northern British Columbia is impossible to say at present, because one of the purposes of the survey now being undertaken by the interested company is to determine the best power sites. Equally, it is impossible to predict just where the industrial site will be. However, the power will be both developed and utilized in Canada.

What the potential output of this project will be is another question that must be deferred until the surveys are completed, but statements based on preliminary investigations suggest that it might be of the order of five million horsepower. The power would be available for expanding mineral activities in the area and would give them much encouragement. The major proportion of it, however, would be devoted to various electrometallurgical and electrochemical processes using ore brought in by sea.

It is clear, then, that if this development should materialize it would bring an important manufacturing industry to the Yukon or northern British Columbia, depending upon where the best industrial sites can be found. Furthermore, the population centres which would be created by this industry might, as I suggested in the case of Pine Point, be sufficient to stimulate small secondary manufacturing industries.

Before concluding these remarks, I thought that you might be interested in a brief description of the form of government of these northern territories. The administration both of the Yukon and of the Northwest Territories is the responsibility of a Commissioner who acts under instructions from the Governor-in-Council or the Minister of Resources and Development. The Commissioner of the Yukon is an official of the Department of Resources and Development who resides at Whitehorse. The Commissioner of the Northwest Territories is also an official of the Department of Resources and Development but he is stationed in Ottawa and happens to be addressing you at this moment. Both the Territories have a legislative council with powers to pass ordinances covering a wide variety of subjects which, roughly speaking, are comparable to those lying within the jurisdiction of provincial legislatures, excepting that the Territories do not own or administer their natural resources. In the Yukon the Territorial Council consists of five members who are elected by the residents of five constituencies in the Territory. The representative nature of the Yukon Council goes back to the beginning of this century when the population of the territory was much larger than it now is - by the 1901 census there were over 27,000 people in the Yukon, and the population had already begun to decline from its peak during the gold rush of 1898 to 1900. As the population declined further the number of members on the Territorial Council was reduced but its fully elective character was never changed. When the population again started to increase, rising from 4,157 in 1941 to 9,096 in 1951, the size of the Council was increased from three to five members.

In the Northwest Territories the history has been somewhat different. When the Provinces of Alberta and Saskatchewan were carved out of the old Northwest Territories in 1905 and the Territories assumed more or less their present boundaries, the population was sparse and widely scattered and based on a trapping economy. The Territories therefore needed little government other than game regulation and policing. With the development of mineral production, however, starting in the 1930's, both the economy and the population expanded and the extent of governmental functions increased. Prior to 1951 the Northwest Territories Council consisted of six members, all of whom were appointed by the Federal Government. In 1951, however, the Parliament of Canada decided that the Territories had reached a stage of development where some measure of representation was called for, and the Northwest Territories Act was amended to increase the size of the Council to eight members, five to be appointed by the Federal Government and three to be elected by the residents of three constituencies in the Mackenzie District. The amendment also provided that the Northwest Territories Council should meet at least twice a year, once in Ottawa and once at some point in the Territories.

The increase in economic activity and population in the North has also brought about changes in federal representation. Since the first decade of the twentieth century, there has been a Member of Parliament at Ottawa from the Yukon, but until 1947 there was no provision for representation for any part of the Northwest Territories. By the Redistribution Act of that year, however, the Yukon constituency was enlarged to include the Mackenzie District west of the 109th meridian and was renamed "Yukon-Mackenzie River". By the Redistribution Act of 1952 further changes have taken place; "Mackenzie River" has now been separated from "Yukon" and enlarged to include the whole of the Mackenzie District. Therefore, after the next election there will be two members of Parliament for the northern territories, one for "Yukon" and one for "Mackenzie District".

... I hope I have been able in this half hour to give some ideas of the bright hopes that lie in the north. The only factor that could destroy these hopes would be a decline in the demand for minerals; and that appears to me a most unlikely contingency! With the rapidly increasing population of the world, the technological advances which are continually putting on the market more and more useful and fascinating gadgets, and the efforts that are being undertaken to increase the purchasing power of the underdeveloped countries, the demand for minerals seems destined to rise by leaps and bounds. The Promise of the North, therefore, is unbounded.

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