

(February 28, 1927)

## New Developments in Mining Power, Pulp and Paper in North-Eastern Canada

BY MR. CYRIL T. YOUNG, F.R.G.S.\*

PRESIDENT G. H. SEDGEWICK: Gentlemen, the twentieth century is Canada's century, and there are people of good judgment, among whom is our guest, who think that if any particular part of Canada is going to show great development in the twentieth century, it is the part we have always thought was the broken back of Canada, the Northland of Ontario and Quebec, which we hope and expect to see developed in such a way that no one will ever again speak of the broken back. Our guest today is well qualified to talk about the north country. He was brought up in the Ottawa Valley, in its gateway. He obtained his knowledge of it by the experience that one finds in a mine and in the woods, and his knowledge of it has been such that the National Railways have made use of his special and expert qualifications by putting him in charge of the publicity end of their railway in that district. I have very much pleasure in calling on Mr. Cyril T. Young, who will speak to us on the resources of the North country.

MR. YOUNG: After a short and modest opening paragraph, continued as follows: In the march of events occurring in Canada today, nothing is more outstanding than the development of mining, pulp and paper and power, and if we were to take an analysis of the way Canada is heading through the facts in connection with these industries, we would find there is a more decided trend toward the development of our natural resources than ever before.

\*Supt. of Development, C.N.R., Fellow Royal George Society.

There is coupled with that, a development going on in connection with research, and in all of these industries I am going to speak to you about today, research plays an important part whether in pulp and paper or in mining, where the metals are processed, or whether it is in power development, and it does seem to me that Canada and Canadians in general should take a greater interest in research than in the past. We are standing at the very threshold of a new century of science, of invention, until at times what were formerly fixed stars of business are fading from our business sky. In other words, if our manufacturers are going to continue to make that progress in the markets of the world that we believe they should, there should be a better sentiment displayed toward research.

It was not the wonderful brain that the Germans had prior to the war that put them in the position they were in; rather it was that their industrialists saw fit to support young men who were making inventions or some new process and were engaged in scientific research, and thereby they achieved the position they had prior to the war. I believe if Canada is going to go forward that research is one of the things we shall have to talk about among ourselves. It will finally result in the Dominion Government establishing a research foundation that will send out men with knowledge to the different sections of the manufacturing world, and bring back from England and Germany and the United States the latest processes and thereby our manufacturers will not find two or three years afterward that they are not manufacturing an up-to-date product and that their machinery is obsolete. I believe as John Bright said, that you cannot make these thoughts topics of discussion without influencing finally the course that the Governments of the country must pursue.

Now, if we could determine the direction in which Canada is heading at the present time, as a mariner would get his bearings, we would make an analysis somewhat like this: That notwithstanding the immense value of our wonderful wheat crop, we would find that that portion of the wheat we are manufacturing into flour only added 6 per cent. to the 410,000,000 bushel wheat crop in 1925. If we carried

the analysis further, we would find it was 20 per cent. of the amount of wheat that was milled into flour.

Now, passing from the wheat industry to several others, we come next to agriculture and the processing of meats and beef, and that added 40 per cent. to the original raw product. Then you come next to iron ores, which add 82 per cent. to the original raw product. Then you come to textiles, and in the manufacturing of the raw product you get 89 per cent. Coming to the chemicals, you find that in their manufacturing you add 105 per cent.; and in minerals you add 106 per cent., and in pulp and paper you had added 134 per cent. to the value of the raw pulpwood.

Now, that gives you a clue as to which industries we should push forward the hardest to give Canada the greatest population and payroll. I am of the opinion that if Canada, without losing a bushel of her wonderful wheat crop can continue to develop her rich mineral yield now more than half the value of the wheat crop; if she can continue to develop her pulp and paper to the limit of the market to absorb that paper; if she can continue to develop that white coal that never goes on strike, she is moving along the lines toward the position that those rich resources entitle her to among the nations of the world.

I am quite of the belief that power is the heart of industry. No country in the world is blessed more with power than Canada. We have thirty-two millions horsepower. We have four millions developed. Where does that power exist? Well, Saskatchewan, one million; Alberta, one million; Manitoba, six millions; British Columbia, five millions; Ontario, seven millions; Quebec, twelve millions; and, of course, you know that the Maritime provinces would not have the same amount of power. In New Brunswick there is 160,000 horsepower, and very shortly it will be 60 per cent. developed. And in Nova Scotia there is 300,000 horsepower, 15 per cent. developed.

Now, that gives you an idea of where the power is and where eventually you will get manufacturing sections, because power is essential to manufacturing. You may ask me how much money have we invested in power? Well, we have developed four million horsepower, \$700,000,000

invested. If you were to ask me I would say it was one of the best investments you could find because in the last twelve years none of the power companies passed their bond interest. Then I find, in making an analysis of the power situation, that of the companies that did not meet their bond interest at the time due it only amounted to one-fifth of one per cent. of the total capital invested in power. I know of no other natural product with such a record. I know banks and mercantile companies have failed, but I believe power is one of the best investments in which Canadians can employ their money.

Coming next to pulp and paper, it is an astounding thing to think that thirty years ago our exports of pulp and paper were only \$120, and last year they were \$173,000,000. I submit, in this case, that it may be that we, as Canadians, may be over cautious as to what we are doing, for if there is one thing we should do it is to advertise our resources more than we do. You will be interested in knowing that in the export of pulp we have increased 674 per cent. in the last twelve years, and in paper 1,476 per cent. You will be further interested in knowing that we supply half of the American demand. All told, 87 per cent. of our pulp and paper is exported. We have 114 pulp and paper mills in Canada that at the mills alone employ labor to the amount of 28,000 people, and this does not include twice as many employed in the woods and drives. In wages these mills paid \$38,000,000, and while I do not know what the purchasing power of this industry is yet I do know that it is much greater than the power that comes from Northern Mines, which affords a purchasing power of \$62,000,000 a year.

Insofar as mining is concerned, you would ask me, is there a good, sound basis for the mining development that is going on across Canada? Get this essential fact—the world used more metals in the last twenty-five years than in all preceding time back to the days of the Pharaohs. I know of no greater statement that a speaker could make. Then you would say to me, what proportion of that does Canada produce? Well, Canada has produced in 1925 two hundred and twenty-six million dollars worth of metals.

Asbestos, \$9,000,000; silver, \$14,000,000; copper, \$15,000,000; lead and zinc, \$23,000,000; nickel, \$25,000,000; and in gold alone, in Northern Ontario, \$30,000,000.

Now, Northern Ontario's rise to fame in gold has been spectacular, because fifteen years ago our gold production was only \$42,000 a year, and today it is \$30,000,000 a year. Again I say to you that if that occurred in any other country in the world our papers would think it was wonderful and our young men would probably be hiking to a country which could produce such wonderful results.

I want to speak of this map and tell you where these developments are actually going on. You find so many who tell you of our wonderful natural resources, but they fail to pin down where the developments are taking place. Now, on this map one of the outstanding things is this clay belt area, but I am going to deal with that country, east and west of Cochrane, when I come to it.

These triangles on the map show you where power does exist, and in this eastern section from Manitoba east we have eighteen million horsepower. As an instance, there is a million in Ontario flowing into James Bay, two million on the Quebec side and 1,250,000 down here. Now, on this map it will be noted that the main continental divide, which separates the waters flowing to the Arctic from those to the south, has on it the greatest number of dividend-paying and producing mining camps. I will deal first with this section of the country, Northern Manitoba. You have on the waters of the Nelson and Churchill River more power than has been developed on both sides of the Niagara River. There is more than three millions horsepower there. In this particular section north of Manitoba again you have an area with \$300,000,000.00 of copper gold ore. Now, that is more ore than we mined at Cobalt in twenty years. They have been working on a better basis of selective flotation for copper and other ores, and they are making such progress as would warrant us in believing that you would see a large smelter going up there when they obtain rail transportation. It would be similar to what Sudbury has meant to Ontario. It is very essential in the West to constantly work toward the point where you can create a market for

farm produce. So far as the Canadian National Railways are concerned, we are taking care of the immigrants when they do arrive, and that is one of the principal things. And we are endeavoring to select them in such a way that these people, when they come here, will not bring with them any Red element, but that they will conform to such simple faiths as those in which we were reared.

Here you have the Central Manitoba Gold Mines. This property has the earmarks of a producer, and in the vicinity are other properties of quite some merit. That brings you to the Red Lake district, and I can say this about it, that in length of veins and in widths and values, they compare favorably with Porcupine. That does not apply to all that country, but it does apply to those which have received the most pronounced attention to date.

Coming south, you find new pulp and paper developments here in Manitoba and put in by people who are associated with the Spanish River Pulp and Paper Company. We have built nineteen miles of line in there. It is to be noted that all this Red Lake country is a well timbered country, and that has this bearing, that where you can secure a large tonnage of paper, as, for instance, at Abitibi, you are then in a better position to build a line into the mines on account of getting that tonnage en route.

The pre-Cambrian shield stretches from Great Slave Lake across Northern Ontario and Northern Quebec. Now it is in the pre-Cambrian that the deep mines of the world are located, whether it is in Mysore, India, or South Africa. Passing this Mesabi iron range country, I think it is opportune to say that although we as yet have not here the high grade, rich hematite ore they have, we have ore that we should take more interest in because the magnetic ores produce a better product in the furnaces than the present fine lake ores; not so well as the old ores, but better than the new fine ores, and we cannot but admire the stand of the Ontario administration through our friend, Hon. Charles McCrea, and also in Quebec and British Columbia, in putting on a bounty to aid the mining of that iron ore. Now, it should also be given very serious consideration by the Dominion Government to add to that

bounty, because the present bounty is not sufficient and we should not allow 100 per cent. of the ore that goes into our furnaces to come from other countries.

Passing Nipigon, you find new camps with very considerable possibilities, such as Beardmore and Goudreau, but before coming to that point I would like to say this that across this sparsely settled country the Ontario Government has made a very wise move in putting on those car-schools on wheels because it enables the young people, who very often are foreigners working on the sections of the line, to study the English language, become assimilated and become good Canadians. Its importance appears when you hear that at a point on one of our lines, with the temperature fifty-three below, there was a 100 per cent. attendance.

Now, that brings us to the Sudbury field. Sudbury produces 85 per cent. of the nickel of the world, and it is my opinion from a thorough knowledge of Sudbury for years that the present smelting capacity can be sustained for another century. International Nickel has smelter capacity of 2100 tons per day and paid \$3,800,000 in dividends last year. Mond nickel capacity 1,400 tons a day, and has paid \$1,760,000 in dividends last year. And I am going to make the astounding statement that the International Nickel and the Mond, along with Hollinger and Lake Shore are paying more dividends on their present basis than all the standard banks in Canada combined. As an evidence of the fact that the banks are taking an interest, nothing is more significant than that the Canadian Bank of Commerce directors made a trip north and they will not be the only bank paying a visit there this coming year.

Passing from Sudbury through the new city of North Bay, you come to a camp—Cobalt—which is well-known to you and which is not entirely mined out. It has produced \$300,000,000.00 of ore and paid \$100,000,000 in dividends, as Sudbury has produced \$570,000,000.00 of ore and paid \$100,000,000 in dividends. In fact, the mining country has had a production of a billion dollars worth of new wealth in this country north of Toronto. This does after all mean the betterment of this lower manufacturing section of the country when you consider that \$62,000,000 was its

purchasing power last year; moreover, I find that when I go to large shops and ask where they are obtaining their orders for machinery today, invariably the answer is from the North country. The Cobalt camp is being largely aided through the production at South Lorraine and Gowganda. In leaving that section, I want to remind you, that because Cobalt has been pretty well worked out, you must not think that applies to the gold camps. Deposition at Cobalt was largely above the 450-foot level, and the fact is that that production was largely above the 500-foot level. That is not the case in the gold camps, and you must not judge the possibilities of the gold camps from the fact that silver deposition was on the upper levels. At Porcupine I will show you ore deposition at 4,000 feet. Kirkland, similar.

Passing through Cobalt and up through the towns of Haileybury and Kirkland Lake, you get a camp there which has a tremendous future, such as Lake Shore, Wright-Hargreaves and Teck-Hughes—each producing \$250,000 per month and paying astounding dividends—also others with great possibilities. The situation does look decidedly promising.

Passing from the Kirkland Lake Camp you find other outlying sections that are promising, particularly the Boston Creek section. That brings us to Porcupine. The Hollinger mine is today employing three thousand men and in my trips across Canada never have I found any industry employing three thousand men except at Three Rivers. The large Massey-Harris plant here employs 2,700 men, and we can thank Mr. Gundy and others for that big institution remaining in Canada. Now, at the Hollinger mine there are sixty-five miles of underground electric railways and they are paying a dividend of \$6,400,000 a year on the present basis, which, to those of us who did not believe gold mining had any future in Canada, is a revelation. Each foot in depth was estimated to have a value of \$150,000 a foot. Each foot is now yielding \$175,000 a foot, and it is quite safe to say at 3,000 feet there will be half a billion dollars. And that is not all, because adjacent to them on the McIntyre there is a shaft down 4,000 feet that you could drop a room eighteen feet by twenty-four down. The

ore hoists are running 3,000 feet a minute and neither cost nor health interferes as last month's work at McIntyre the men made more footage than at any one of the levels up to the surface. At mines in other sections of the world you are affected with heat conditions. These will cause no worry at Porcupine down to 10,000 feet. That shaft at McIntyre is taking two million feet of B.C. timber, and you can see the gold development is far-reaching when it affects British Columbia.

Leaving the mining section, you come to the next development at Iroquois Falls where there are twenty-two carloads of paper a day shipped out to American points. There is a business of eighty cars a day, and if you want to get an idea of what that production actually means, I would say it is a roll of paper ten feet wide reaching from here to Winnipeg—in fact to Brandon. It shows you the difference scientific research, when properly applied, is making in these industries.

Passing from that industry to the clay belt, I have some astounding information relative to the Transcontinental Railway. You will be surprised to know that that section is now earning 97 cents on every dollar of its operating charges. Now, that line was thought to be a white elephant but it now proves that it does not matter what the color of the elephant is if you train it to work for you. Some of our tonnage is coming out of pulpwood. In these days when so many people are talking pulpwood embargo, it is interesting to note that last year only 8% of the wood off this Transcontinental crossed the line unmanufactured and 92% went into pulp and paper in Canada. The tribute must be paid to the Quebec and Ontario Governments and the Dominion Government for having the statesmanship to put in these mills in order to give settlers a market. To give you an idea of the kind of market they will find in that clay belt country when the \$25,000,000 Spruce Falls Paper Company's mill is also added, (for which we can largely thank our friend, Mr. Black,) you then have generated by the Government a purchasing power to settlers alone from pulpwood of \$4,000,000 a year throughout that section, and I say you cannot put \$4,000,000 a year into any farming section without making it rich. As an illustration of how

they are progressing in that country, first let me say to you there are 20,000 people living on the Quebec side, and there are 15,000 in this clay belt here to the west of Cochrane. Now, in 1920 these settlers had 3,000 dairy cattle. Five years later they had 17,500. In 1920 they had 3,000 tons of hay, and five years later 93,000 tons. In oats they then produced 225,000 bushels, and five years later 775,000 bushels, and I believe this year it will be a million. They had two thousand horses, twelve thousand five years later. That shows you their progress, and there is a great future ahead of this clay belt in Ontario and in Quebec.

Passing on from that, you come to the Rouyn copper camp. I want to say this about copper, that 64 per cent. of the copper of the world last year produced in America came from ores of one and a half to two per cent. copper, or four dollars to five dollars a ton. Whether you take the ore of Noranda, or whether you take the other ores of Waite-Montgomery, Amulet or Towagamac, you could even have a 10 per cent. ore. Now, that is saying nothing against the wonderful Porcupine ores. That is what is causing the excitement in Quebec, four times as much profits as in Porcupine. I want to add that you need not be afraid that the copper ores of this country are not going to find a market in the markets of the world. The richest copper ore there is in South Africa. More copper was consumed last year than ever before in history, and Rouyn will dominate.

Passing on to the aluminum Saguenay development, they are now utilizing in one unit 100,000 horsepower, and in that plant they propose a total development of ten units, which will be 1,000,000 horsepower, and that will be the greatest individual horsepower consuming industry in the world. And it is in Canada, not across the line. Not only will power development assume large proportions, (and they are going to bring in the bauxite from British Guiana,) but also in the matter of pulp and paper in that Lake St. John section the production is large. We are now hauling out about fifty cars of paper a day, and there are 100,000 people living there, with an increase of three thousand a year, almost equalling Alberta. In fact the North Country closely approaches the average growth of the three

prairie provinces totaling approximately 22,000 according to the recent census. Something to think about, men. They have in this section of the country 132 cheese factories. In fact, there may be more going on in Canada than many people know about.

I do not feel that I have the time today to deal with other sections of the country further than to say this about New Brunswick. There is a large pulp and paper development going on there. Grand Falls is being harnessed by International Paper Company developing 60,000 h.p.; they will use 30,000 of this themselves; 20,000 will be used by the Angus McLean paper mills at Bathurst, and 10,000 will be used by the Fraser Paper mills being constructed. Nova Scotia has creditable pulp and paper possibilities, with power pro rata, to their timber reserves.

With two minutes more until closing time I desire to add that the situation in the Maritimes is righting itself, and a much more optimistic feeling prevails; in fact has been aided largely by the adoption of the Duncan Report. Other legislation will develop the Ports of Halifax and St. John. An increased market is also developing for the production of the Besco Industries.

May I state in conclusion in this Sixtieth Anniversary of Confederation that I believe this audience will see one vast confederation stretching from this rich treasure house of the Northland southward to the Blossom Land of Niagara, and from where the wild waves of the Atlantic beat on the shores of Acadia—the land of Evangeline—on westward across clay belt and prairie, and our majestic Rockies to the calmer waters of the Pacific main—the home of millions of people who will rise up every day to call her blessed—her cities vast hives of industry and of thrift—her mountain sides the treasure house from which her metal resources are drawn—her forests our reserve supply of paper, as well as that of the Republic to the south of us, and to some extent, the Motherland—her streams vocal with the whirring spindles of hydro-electric machinery—her clay belt and prairie tranquil in the white and gold of the harvest—peace and prosperity walking hand in hand through her borders, and in no country on which the sun shines, shining on a better people or a happier land.