

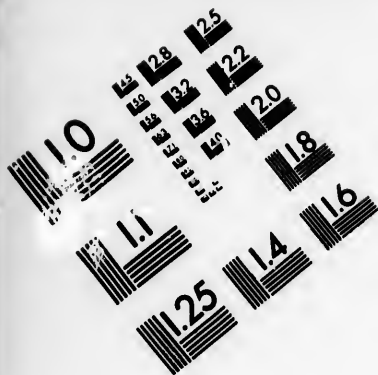
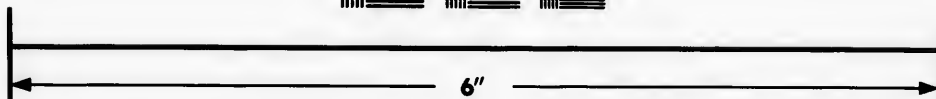
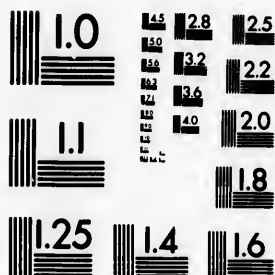


IMAGE EVALUATION TEST TARGET (MT-3)



Photographic
Sciences
Corporation

23 WEST MAIN STREET
WEBSTER, N.Y. 14580
(716) 872-4503

**CIHM/ICMH
Microfiche
Series.**

**CIHM/ICMH
Collection de
microfiches.**



Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques

© 1987

T to		T p o f	O b t s o f s o	T s T w	M d e b r i r
---------	--	------------------	--------------------------------------	------------------	---------------------------------

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- T p o f i**
O b t a i n i n g
T s e T w
M d e b r i

[illegible]

The copy filmed here has been reproduced thanks to the generosity of:

Memorial University of St. John's

The images appearing here are the best quality possible considering the condition and legibility of the original copy and in keeping with the filming contract specifications.

Original copies in printed paper covers are filmed beginning with the front cover and ending on the last page with a printed or illustrated impression, or the back cover when appropriate. All other original copies are filmed beginning on the first page with a printed or illustrated impression, and ending on the last page with a printed or illustrated impression.

The last recorded frame on each microfiche shall contain the symbol $\longrightarrow$ (meaning "CONTINUED"), or the symbol ∇ (meaning "END"), whichever applies.

Maps, plates, charts, etc., may be filmed at different reduction ratios. Those too large to be entirely included in one exposure are filmed beginning in the upper left hand corner, left to right and top to bottom, as many frames as required. The following diagram illustrates the method:



L'exemplaire filmé fut reproduit grâce à la générosité de:

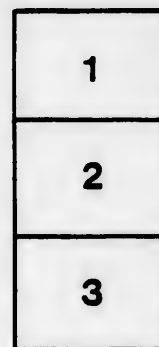
Memorial University of St. John's

Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plat et en terminant soit par la dernière page qui comporte une empreinte d'impression ou d'illustration, soit par le second plat, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'illustration et en terminant par la dernière page qui comporte une telle empreinte.

Un des symboles suivants apparaîtra sur la dernière image de chaque microfiche, selon le cas: le symbole $\longrightarrow$ signifie "A SUIVRE", le symbole ∇ signifie "FIN".

Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angle supérieur gauche, de gauche à droite, et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.



X

with the author's name
regard

NEWFOUNDLAND,

ITS

MINERAL AND OTHER RESOURCES.

A LECTURE

*Delivered at the Imperial Institute, March 7, 1898,
Sir F. A. Abel, Bart., K.C.B., &c., in the Chair,*

BY

J. H. COLLINS, F.G.S.,

PAST PRESIDENT OF THE INSTITUTION OF MINING AND METALLURGY,
&c., &c.

LONDON:
HARRISON AND SONS, ST. MARTIN'S LANE,
PRINTERS IN ORDINARY TO HER MAJESTY.

1898.

6/11

e
 l
 a
 t
 h
 v
 M
 l
 h
 e
 d
 i
 i



092506

Nfed
FF

1008

13

C6

file

Newfoundland, its Mineral and other Resources.

A LECTURE BY J. H. COLLINS, F.G.S.

Delivered at the Imperial Institute, March 7, 1898.

SIR F. A. ABEL, Bart., K.C.B., &c., &c., in the Chair.

THE CHAIRMAN, in introducing Mr. Collins, said he was an eminent mining engineer, who had had opportunities of making himself practically acquainted with some of the most important resources of that interesting country, Newfoundland. Up to the present time the members of the Imperial Institute had heard little about this colony, and he was sure all present would hail with particular interest any information that Mr. Collins could give concerning it. Interest had been aroused lately by accounts of its wealth in minerals, which hitherto had been very little explored, and it was to be hoped that the efforts of Mr. Collins and other enterprising gentlemen to develop the resources of this, one of our smaller, but most important, colonies, would result in very great advantage indeed to the mother country.

Mr. COLLINS said: I have been asked to give you my ideas on the mineral and other resources of Newfoundland, and, although I cannot profess to be able to say anything very profound after a two months' visit, preceded by a course of Murray and Howley and supplemented by one of Judge Prowse, yet, the general ignorance which prevails respecting this Cinderella of Colonies, as it has been called, is so great, that what I have to say will probably not be altogether without value or interest.

INTRODUCTORY.

That Newfoundland is the oldest British Colony, and an island nearly as large as Ireland, situated in the latitude of the

English Channel—with a climate a good deal like that of Southern Scandinavia—all this at any rate since the Jubilee is fairly well known. But why it takes nine or ten days to get there, while the much greater distance to New York is traversed in a week or less; and generally—why so few people go there—this is by no means so well known.

The first images called up by the word Newfoundland to the average Englishman are fish, fogs, and dogs. Well, as far as my experience goes, we have more of all three in London than they have in Newfoundland. But their fish is mostly dried for export, while ours is brought here wet and semi-fresh for local consumption; their fogs are white and wholesome, while ours are yellow and poisonous; and as to the genuine Newfoundland dog of our childhood, I scarcely saw half-a-dozen all the while I was there, for the heavy brute who drags the sledges in winter is a very different and far less attractive beast.

SCENERY.

Newfoundland has neither mountains nor waterfalls of dimensions sufficient to strike the imagination of the reader of guide books, although plenty of water-power exists in many parts; nor are there any glaciers, though their traces are found over all the land. But there are grand lakes and stately rivers, lovely wooded hills and rich valleys, broad bays studded with innumerable islands, deep fjords, and secure harbours. Tourists in search of the picturesque and beautiful may always be fully satisfied with its scenery, while sportsmen will delight in the abundance of game, and particularly of deer and partridges.

CLIMATE.

Like the English, the Newfoundlanders are continually abusing their climate, and, I think, with as little cause. It would be absurd for me to dogmatise on this subject considering my short experience, although during my stay in October and November I got about exactly as I do here at home. But Captain Kennedy, formerly the commander of H.M.S. "Druid," who spent some years in Newfoundland, says the climate is far superior to that of Great Britain, and many

other writers have said the same. The only drawback seems to be the arctic current, which brings down ice from the north every winter; blocking up many of the harbours and bays, particularly on the north and east of the island, sometimes from December to May, and chilling the country for several miles inland. This must be borne, but after all it is no vital matter, for the days are longer than in Great Britain, and work can go on everywhere during the winter. Even the ports which are occasionally closed by ice could easily be kept open by ice-breakers, as in Sweden, and this we are told is now being done by Mr. Reid's steamer, the "Bruce," in Placentia Bay.

FISHING.

I need not say much about the fisheries, for they at least have a very wide reputation. Fish in Newfoundland means cod, and the cod fisheries of the banks and of the Labrador shores show few, if any, signs of exhaustion. The seal fishery is indeed languishing, but this is more on account of the low prices obtained for its products than for any other reason. As for herrings, salmon, and other ocean products that are elsewhere called fish, I am inclined to think that these will be dealt with on a much more extended scale before any long time has elapsed. And the same may perhaps be said of the lobster fishery and of the canning of lobsters. Even now about 4,000 people are supported by lobsters out of a population of little over 200,000, while the fisheries generally, support directly or indirectly, more than one-fourth of the entire community. Lord Bacon said that "the fisheries of Newfoundland" were "more valuable than all the mines of Peru," and, bearing in mind the fact that they afford an annual and apparently inexhaustible harvest, this is no doubt sober truth. The present annual value of the fisheries is nearly 7 millions of dollars, or about equal to the Norway sea-harvest in value, and considerably greater in weight. I believe this industry could be, and will be, greatly expanded in the near future, although low prices will no doubt make it absolutely necessary to use all possible skill and knowledge in securing the fish when they are in the best condition, in adopting the best known methods of packing and transport, and in properly utilising every part of

the offal—much of which is now entirely wasted, and is often a dangerous nuisance. Most of it could, no doubt, be converted into “fish guano” with advantage. It would, I believe, pay the colony well to send a fish expert to investigate what is now being done in other parts of the world, and particularly in Norway, Sweden, and Holland.

AGRICULTURE.

Before I go on to speak of agriculture, one word of explanation and even of caution is necessary. People who judge of the capabilities of Newfoundland from what they see around St. John's will do it great injustice, for the land in that part of Newfoundland is the poorest in the island. As regards the island generally then, I am bound to say that it is the most backward “white man's country” I have yet seen. It has, according to Mr. Moses Harvey, at least 7,000 square miles of arable or grazing land, yet there are not 300 of these occupied; there are but few farms more than 3 or 4 miles from the sea-coast, and scarcely any but the poorest portions of the soil have yet been brought under culture, and these mainly in the regions least favoured in regard to climate. Writing of the country around Grand Lake in 1873, the late Mr. Alexander Murray, a most capable observer, reported officially as follows:—“Viewed on a bright summer's day from the deck of a vessel, the beauty of the scene presented by the land features upon all sides is very impressing, yet at the same time a conviction will almost inevitably arise that after all, such beauty in a material sense is a delusion, and that the whole region is nothing more than a vast inhospitable desolation. Such, however, upon nearer inspection proves to be very far indeed from being the case. Tracts of considerable extent upon the coast, and nearly all the valleys of the principal streams, bear a soil of the most fertile description, which is even already shown by the few and rudely cultivated spots here and there, where the produce in grass, green crops, and even cereals, is all first class, both in quantity and quality; and this in a country where there is no evidence of the existence of a plough, a harrow, or a wheeled vehicle of any kind whatever!”*

* *Geological Survey of Newfoundland*, p. 301.

This is substantially true to-day, after the lapse of a quarter of a century, and not only of the Grand Lake region, but also of the greater part of the basins of the lovely Gander and Exploits Rivers, as well as of much of the country around Placentia Bay and other parts of the island.

There are no finer potatoes grown in the world than the produce of Newfoundland, and the export should be very large. Oats and barley grow well, and I have seen some fine specimens of wheat. I believe that fruit growing, stock raising, dairy farming, and pig breeding could all be pursued with success, while many parts of the interior are certainly suitable for horse breeding.

FORESTRY.

The lumbering industries have made some progress, particularly near the outlets of the Gander and Exploits Rivers and in the Bay of Placentia, but the waste of timber has been enormous; many trees have been cut down and left to rot on the ground, and many others after reaching the mills have been so cut as to yield but one plank. But where the land has not been granted to lumbering companies the waste has often been still greater, and the loss from forest fires most distressing. On this subject Mr. Howley reported as follows, in 1874, of the Gambo river basin, the area of which he estimated at from 2,500 to 3,000 square miles:—"Of this great expanse of country, a very large proportion, particularly eastward from the main river, is of rich and fertile soil, as amply testified to by its indigenous produce, which to a great extent consists of pine and spruce of a very superior size and description, intermingled with balsam-fir, white birch, and poplar, the ground often being thickly matted over by an underbrush of ground hemlock. It is greatly to be regretted, however, that chiefly, if not altogether, from the careless use of fire on the part of trappers who frequent these regions, great damage has been done to those noble forests. The great fire of 1867 appears to have originated in the region west of the main river . . . and proceeding easterly swept the forests on the main river above the lake." These fires, "in almost every case could be traced to the remains of a shed, or what had been the temporary habitation of a trapper" (*ibid.*, p. 358).

Again he says, "A fisherman requires a spar for one purpose or another, and he straightway goes to the woods to procure one. In making his selection . . . he cuts down . . . on an average three trees (frequently, however, many more), and after fixing upon his quarry he retires for that day. On the next or some future day he returns to dress up the selected tree . . . and, finally, he makes another trip . . . accompanied by friends or neighbours to help him to drag the spar to the river's bank or to the sea-shore. Now, in such a case . . . at least two trees are wasted, which may fairly be considered as equivalent to nothing less than 1,000 ft. of lumber" (p. 362). And all this in addition to the waste of time resulting from such irregular operations. Besides the timber suitable for lumber, there are millions of well grown firs and spruces well adapted for the manufacture of paper-pulp, in the various river and lake basins, and often most conveniently situated, not only as regards water transport, but also with abundant water power available for its preparation.

MINING.

My lecture is on the mining *and other* resources of Newfoundland. I have dealt briefly with some of those *other* resources; I will now go on to speak of my own particular subject of mining. It must be admitted that the utilisation of the mineral resources of the colony, from the days of Sir Humphrey Gilbert down to the present, has not hitherto been a striking economic success, although several very fine mines have been rather extensively worked. I cannot quite agree with Judge Prowse, the Rev. M. Harvey, and others, that Newfoundland already stands in a prominent position as a producer. And yet I believe that it is one of the richest islands in the world, and particularly so as regards copper and, perhaps, iron.

COPPER.

Up to the present the mining of copper has been far more important than any other branch of mining in the island; and certainly the deposits are very numerous, very accessible, and sometimes, very rich. So far as is yet known, the ore occurs chiefly in beds, bedded veins, and lenticular deposits, rather than

in regular fissure-veins, though these latter are not altogether absent. The first discovery of copper may have been made by Daniel the Saxon, who was taken out by Sir Humphrey Gilbert, but Gilbert and his specimens were lost at sea, in 1583, and nothing came of the discovery for near 200 years. Copper was first worked at Shoal Bay, in 1778, and again in 1839, but the works were not very extensive, and there are no records of ore shipments.

The first really important discovery was at Tilt Cove in Notre Dame Bay, in the year 1857, although mining operations were not seriously begun there until 1864. It is interesting, from a scientific point of view, to know that the discoverer of the Union Mine at Tilt Cove did not visit that region by mere accident. Mr. (now Sir Wm.) Dawson, the eminent Canadian geologist, considered that the rocks bordering the western side of Notre Dame Bay, as well as those in several other parts of the island, belonged to Sir Wm. Logan's famous cupriferous series, known as the Quebec Group, a section of the Huronian system, and it was his suggestion that "induced McKay to undertake a prospecting tour in that direction." Mr. Harvey tells the following story of the actual discovery:—

"One day in the summer of 1857, a prospector named Smith McKay, when engaged in searching for minerals, dropped into the cottage of a fisherman in Tilt Cove, a fishing village in Notre Dame Bay, on the north-east coast. His quick eye caught sight of a piece of yellow-coloured stone, that stood on the mantelshelf. On inquiry as to whence the curious stone came, he was told that one of the children had picked it up at the bottom of a cliff close at hand, and that it had fallen from a yellow rock in the face of the cliff. Of course the poor fisherman had no idea that it was of any value, but McKay knew that he had found a deposit of rich copper ore. Ere many days had passed a mining licence was secured, and in two or three years the quiet village was a scene of mining activity."*

The Tilt Cove Mines have had a chequered career since then, but they are still working on a large scale, for last year they produced over 70,000 tons of ore, and at a profit of £28,000, although much of the ore was of very low grade. The total

* Rev. M. Harvey, *Newfoundland in the Jubilee Year*, pp. 89, 90.

production of the group to date has been not less than about 20,000 tons of fine copper, worth about one million sterling, besides some thousands of pounds worth of nickel ore.

Many other important discoveries of copper ore have been made since the discovery at Tilt Cove, the most extensive being 12 miles further south, at Bett's Cove, in 1874, and again at Little Bay, a few years later (1877). Several other fine deposits have been discovered, but as yet they have not been worked.

The shipping returns of ore exported are known to be very imperfect. However, up to the end of 1896 they record the export of 460,311 tons of copper ore, 50,730 tons of regulus, and 5,240 tons of ingots, of a total value close on $11\frac{1}{2}$ million dollars. Allowing for the imperfections referred to, we shall probably not be far wrong if we reckon that the island has produced in all more than 50,000 tons of fine copper, worth at least 3 millions sterling, the greater part of this during the past 25 years.

IRON PYRITES.

Iron pyrites has been rather extensively worked as an ore of sulphur and iron in one mine for a series of years, and in particular during the last six years. This mine is on Pilley's Island, in Notre Dame Bay; it has yielded nearly a quarter of a million tons of ore, but it now shows notable signs of exhaustion. Other deposits of this mineral have been lately discovered, and may prove to be of economic importance.

HEMATITE.

Hematite iron ore of good appearance has long been known to exist in many parts of Newfoundland, but it is only within a very few years that anything has been done by way of opening up mines for the supply of ore on a commercial scale. The most important deposits yet known are probably those of Great Bell Island; these are pretty regular beds, lying for the most part at a low angle, and at no great depth beneath the surface. The beds extend, to all appearance, throughout the island, from whence they pass beneath the waters of Conception Bay, and come up again on the north-western shore. A Nova Scotian

and an English company are now working these ores on a rather extensive scale. About 100,000 tons have already been shipped, and it seems likely that some of the mines will be much more extensively worked during the next few years. The ores are at present particularly valuable to the Nova Scotian iron-masters, but they may prove of immense importance to us in England when the Spanish mines have become a little more nearly exhausted. Many of these ores contain over 50 per cent. of metallic iron, and some over 60 per cent., being at the same time remarkably free from sulphur and phosphorus.

LEAD, &c.

Rich veins of argentiferous lead-ore have been known for many years, and in several parts of the island, but particularly in Placentia Bay, and ores to the value of about £30,000 have been shipped at various times, chiefly from the Lamanche Mine. According to Mr. Murray, up to the end of 1868 about 1,058 cubic fathoms of ground had been excavated at this mine from shafts, drifts, and open cuttings, the deepest shaft being only 120 ft. below the water level. The total yield of ore, mostly of a pretty high grade, was something under 2,500 tons, a result which most miners would consider to be very good indeed. However, the mine has been idle for many years, and is so still. I have not seen it; I do not even know who owns it, or whether it is altogether a derelict, but all I have heard leads me to believe that it deserves better treatment than it has had hitherto.

There is much nickel in the island associated with the copper ores, and, as already mentioned, some thousands of pounds worth have been sold from the Tilt Cove Mine at various times. There are also numerous deposits of chrome iron ore known on the west coast, also veins of arsenical pyrites, of sulphide of antimony, and of zinc blende. On the west coast, too, there is abundance of asbestos, gypsum, and other so-called earthy minerals awaiting exploitation.

My friends, Mr. Howley, Mr. Leaver, and others, have been good enough to supply me with the latest official returns of the mineral production of the island, and I have other detailed information which enables me to add something

even to these. Like everything else in Newfoundland, mining is in its infancy, yet the returns tell no bad story. The total value of the mineral output may safely be put at $3\frac{1}{2}$ millions sterling, nearly all within the past 30 years, or an average of nearly £120,000 per annum. My friend, Mr. Harvey, says: "Mining has thus developed into one of the leading industries of the country, and, as we shall see, continues to expand. . . . The staple mineral hitherto has been copper, and among the copper-producing countries of the world Newfoundland now ranks *sixth*." There is here, I think, a little unintentional exaggeration, due to the writer's enthusiasm; a great deal more remains to be done before this can reasonably be said, yet it may be that some of us may live to see it realized. New discoveries are being continually made, and they are not likely to be neglected by capitalists in the future as they have been in the past.

I have great confidence in the future of Newfoundland as a producer of copper as well as of iron, and it may be that it will yet prove to be rich in gold.

GOLD.

It is well known that many of the copper and lead ores of the island contain enough gold to be profitably extracted, and as Mr. Howley states, the ores of Tilt Cove have yielded as much as £10,000 worth in a single year.

Quartz veins containing gold were found in the eastern part of the island many years ago, and the attention of the Government was repeatedly called to the fact. Thus, in the year 1868 gold was found by Mr. Fitzgerald in a quartz vein while sinking a shaft on a copper lode at Holyrood, in Conception Bay, and this was reported officially by Mr. Murray. In 1880 Mr. Murray visited another reported gold find near the Brigus lookout, in company with Mr. Foran, and he gives the following account of his examination:—

"By the first blast 2 or 3 cubic ft. of rock was removed, all of which was carefully broken up, washed, and examined, which operation finally resulted in the display of 10 or 12 distinct 'sights' of gold. In one fragment, about 5 lb. weight, largely charged with dark green chlorite, the gold shows itself

in three places distinctly, while many small specks are perceptible by means of a good lens. The fracture of a fragment of milky white and translucent quartz which was broken off the large piece revealed two patches of gold, both of which together, if removed from the matrix, would probably produce about 1 dwt. of the metal, whilst several small masses or nuggets were found adhering to the small broken fragments of quartz at the bottom of the pail in which the rock was washed, the largest of which contained about 10 or 12 grs. of gold. From some specimens in which no gold was perceptible to the naked eye, and which I had selected for analysis, I found amongst the dust, at the bottom of the bag in which it was carried, a small nugget weighing 3 grs. A second shot was tried on the same lead at a few yards distance from the first, but, owing to our imperfect implements, it failed to blow out more than a few pounds of rock, in which no gold was perceptible. In the specimen I procured from Fox Hill (about 2 miles to the S.W.) the metal occurs thickly in the minutest specks, scarcely, if at all, perceptible to the naked eye, but readily recognised under the lens, where it chiefly surrounds a small patch of chlorite."

It is evident from the foregoing account that this place is worthy of a serious examination, which it has never yet received. And I do not doubt that there are scores of other places in the island equally deserving. Mr. Murray visited and reported on another gold discovery at Brigus, in the same bay, in the year 1880. Since then good specimens have been found in many other places on the coast, and particularly in Mings Bight, on the northern part of the French shore, some of them being associated with tellurium, as in the famous Cripple Creek district of Colorado. But very little actual mining has been done, and no milling, so far as I have heard, beyond what could be done with a pestle and mortar. I quite believe that payable deposits will be discovered and opened up before any long time has elapsed, unless the enormous Klondike yields should compel our Government to displace gold as a standard of value.

COAL.

It is quite likely, however, that the most important mineral production in the near future will be coal. The coal basin

of St. George's Bay is probably the north-western extension of one of the important Nova Scotian coal areas. The coal here attracted the attention of Captain Cook more than a century ago, but nothing came of his observation. It was again referred to by Cormack, the traveller, who made his way across the island in 1822. And in 1840 Mr. J. Beete Jukes, then and afterwards so celebrated as a geologist here, found a seam of excellent coal of the respectable thickness of 3 ft. The district has since been visited and reported upon several times by the Government geologists of Newfoundland, and one of them, Mr. J. P. Howley, estimates the area of the coal-bearing strata at about 10 square miles. He states that there are nine workable seams with an aggregate of 27 ft. of coal, and he estimates the coal yield, if properly worked, at 25 millions of tons per square mile. More recently good coal has also been found in the Codroy Valley, some distance to the south-west of St. George's Bay; though unfortunately this latter is badly faulted.

The most important coal area, however, is that situated at the north-east end of the Grand Lake. Coal was seen here by Beete Jukes in 1840, and by Alexander Murray in 1865. In 1869 some unsuccessful borings were undertaken near Sandy Lake, the effect of which was to greatly discourage those who believed there was workable coal in the island. However, a new investigation was started in 1891, by Mr. Howley, and although the resources which were placed at his disposal by the Government were of the most limited description, his labours have resulted in what is now seen to be a most important discovery. Several good seams have been traced for miles—one that I saw shows 6 ft. of excellent coal. The carboniferous area has been traced for 11 miles in length, with an average width of about 4 miles. There is good reason to believe that this coal will soon be vigorously worked, for Mr. Reid's railway passes across the coal-field. Furthermore, by making use of a chain of lakes a canal can be constructed at small cost that will allow of the coal being delivered into Notre Dame Bay, from whence it may be conveniently shipped to all parts of the island or, indeed, to any part of the world. And this outlet would be of peculiar value in connection with the proposed copper smelting establishment in Notre Dame Bay.

PETROLEUM.

There are indications that petroleum will soon add to the mineral riches of the island. I have not myself seen the deposits, but I may quote from a paper recently read here by Mr. Boverton Redwood, who is so well known as a petroleum expert. He says:—"On the west coast of Newfoundland several productive wells have been drilled, and it seems probable that this might become an important oil district . . . The oil-bearing formation is considered to extend over an area of about 250 square miles, lying on the west coast. The Newfoundland Oil Company have a concession of 14 square miles of territory surrounding Parson's Pond, about 30 miles north of Bonne Bay. On this property wells have been drilled to a depth of over 1,000 ft., and one of them is said to have yielded, when the oil was first struck, 15 barrels in 70 minutes."*

Mr. Howley says that there are three different oil-bearing strata at depths of 700, 1,040, and 1,230 ft. respectively, and he thinks "that the oil is not confined to small isolated reservoirs, but generally distributed throughout the shale, which would give rise to a slower accumulation, but one of a more permanent character in the end."

Before leaving this subject of mining, it should be noted that hitherto no important and valuable mineral products other than coal and granite have been found except close to the sea. But this is simply because there have been so few opportunities of searching for them. The broad bands of cupriferous rocks are known to run right across the island, and valuable deposits will assuredly be found inland when they are more closely examined.

I believe Mr. Howley is now putting together a representative collection of minerals for the Imperial Institute, where I am sure it will excite much interest.

THE PEOPLE.

I have so far spoken of the country, I may now I hope, without impropriety, say a few words of the people. It seems to me they are kindly, hospitable, intelligent, and law-abiding;

* *Imperial Institute Journal*, Jan., 1898.

industrious enough when they find themselves in a groove, but, except in seafaring matters, possessed of very little initiative, and too ready to call upon the Government to do a great many things for them that they ought to do for themselves. With free homesteads, free fishing in some of the most prolific waters of the world, excellent potato ground and unlimited firewood at their very doors, there should be neither poverty nor distress in Newfoundland, except in the few cases due to accident or to persistent sickness, and these could be very readily dealt with by insurance. Why then, with all these advantages, has the country not gone ahead? Why is there biting distress in the villages every winter? Seeing how little the fishermen do in their frequent leisure hours by way of cultivating the ground, I fear the fault must, in some degree, lie with the people's inertia. But how is it then that the young men and maidens abandon their country to seek their fortunes in Canada and the United States? This at least calls for energy and enterprise. Evidently they have, or fear, difficulties in securing the means of living at home.

INTERNAL COMMUNICATIONS.

The island manifestly needs a better system of internal and external communication. Roads and railways, postal and telegraphic facilities are absolute necessities in these days, and they must be provided—in reason—even if they do not pay for years to come. I believe the leading statesmen of both parties are fully alive to this, and, if some think that the railway extensions in particular have been pushed ahead to a somewhat disproportionate extent, yet all are agreed that there can be now no drawing back. Let me suggest an illustration. The village shop has been turned into a great general store—a sort of Whiteley's Universal Provider. The casements have been replaced by large sheets of plate-glass; the deal counters and shelves by polished mahogany; a large staff of attendants has been engaged; and a large and varied stock of goods laid in or contracted for. All this must be reckoned a total loss unless customers are forthcoming. Means must therefore be adopted by which such customers will be secured. I am no believer in Mr. Reid's new railway across the island as a section of a great

trans-continental route, for I think the European, Canadian, and American traveller will almost always prefer to start from or arrive at a mainland port. No doubt a certain amount of tourist traffic can be created in time, but in the main the Newfoundland Railway will only be useful as a means for the internal development of the island itself. For a long time to come through trains must be run at a loss—at any rate until there is a much more considerable population than there is at present. Moreover, the existing population must be assured that the trains will be regular and frequent, and that they may depend upon getting proper sleeping and refreshment accommodation *en route* before they will give up their pre-railway customs and arrangements, or adopt modern methods of conducting their branch business. Merchants of St. John's cannot afford to go away to Notre Dame Bay on business as they would go a similar distance of two or three hundred miles in England, until they can be moderately sure that they will be able to return within a reasonable period.

Still, the inconveniences of this transitional period are sure to pass away little by little, and each improvement secured will make other improvements easier.

We are now informed that Mr. Reid has taken over the Government railway and has undertaken to run the whole series (and also to construct several additional branches) for a period of 50 years. He will also acquire and operate the inland telegraph system, and build and equip an improved fleet of coasting steamers. Furthermore, he has purchased the great dry dock at St. John's, and we may any day hear that he has the control of the post office. It is a bold venture, and we must all hope that it may prove remunerative to the enterprising Canadian contractor—that it must be advantageous to the colony in its present need seems *almost* to "go without saying." I say *almost*, because there are obvious dangers attending this wholesale monopoly. Doubtless the contracts giving Mr. Reid this practical control of the island contain provisions intended to secure and safeguard the rights of the general public, but if these provisions are not enforced more rigorously than were the similar provisions in Mr. Reid's previous contracts, it seems to me that no district will be quite secure against undue neglect, and no industry safe from unfair dis-

crimination unless an arrangement satisfactory to Mr. Reid or his officials has been previously arrived at. While therefore Mr. Reid's ample capital, large experience, and great business ability will no doubt be used to develop the resources of the island in his own interest, yet its development by others is in great danger of being cramped in many directions. In particular I should fear that the exploitation of the mineral deposits of the interior would be retarded.

I must not pass from this branch of my subject without referring to Mr. Reid's beautiful sleeping car "Placentia," which runs between St. John's and the old French capital in connection with his equally beautiful steamer the "Bruce." This fine vessel at present carries the mails between Placentia and Sydney in Cape Breton. Unfortunately, so far, neither has earned anything like enough to pay the running expenses; but if they are continued, as we are told they will be, they cannot fail to create a traffic for themselves; and the same, no doubt, will be the case with the main railway, though it may have to be run for a time at a serious loss—particularly as it will have to compete with a fairly good service of coasting steamers and schooners. These are able, too, in many instances, to land the passengers at their destinations, while the railway does not approach those destinations by many miles.

The internal communications of Newfoundland could be very greatly improved in some parts by a better utilisation of the water ways, as was long ago pointed out by Mr. Howley, with respect to the Grand Lake region. Mr. Howley's idea was a ship canal to facilitate international and intercolonial transit. I don't much believe in ship canals, but a system of short light railways, connecting with small steamers on the lakes, with an occasional stretch of connecting canal, such as we find very commonly in the south of Norway and Sweden, would cost little, and would lend itself to the convenience of tourists and settlers far better than any main line of railway, with its two or three trains per week, often passing at unearthly hours; and would at the same time serve to feed such a railway with through traffic.

EXTERNAL COMMUNICATION.

One of the troubles of water communication hitherto has been the occasional closing of St. John's, and the frequent closing of other ports by ice. But there need not be anything of the kind if the Scandinavian example is followed of keeping a channel open by ice-breakers. Recently it has been reported that the "Bruce" has managed to force its way through 15 inches of ice. If so there can be no insuperable difficulty in the matter.

Newfoundland greatly needs a better system of communication—quicker and cheaper—with this country. It is certainly a drawback, and even a grievance, that even in the summer it costs more in time and more in money to get to St. John's than it does to get to Montreal or to Halifax; and the difference is still greater as regards New York, which is more than 3,000 miles away, while St. John's is less than 2,000. I venture to hope that some means will be found of remedying this evil, and here again it is reported that Mr. Reid means to give his powerful aid.

IMMIGRATION.

In my opinion there might soon be, and should be, in Newfoundland a population of 2,000,000 or more, instead of about one-tenth of that number, and the 2,000,000 should be living in greater comfort than the 200,000 are now. When the country has been so opened up as to afford better careers for its young men and maidens, they at least will cease to go abroad seeking their fortunes in strange lands, while a larger population is so badly wanted at home. But the main hope of the immediate future must lie in immigration, and particularly of settlers from Scotland, the north of Ireland, and southern Norway and Sweden. If these most desirable peoples only knew and realised what advantages were offered them by Newfoundland and its Government, good and healthy climate, free homesteads, productive land, equal and liberal laws, kindly neighbours, proximity to some of the best markets in the world for their produce—if they could get to the country as easily and cheaply as they can get to New York or Boston, Newfound-

land would soon have its population of 2,000,000, a population as hardy, as industrious, as thriving, and as law-abiding as any in the world.

CONCLUDING REMARKS.

I have spoken of a certain inertia and slackness of enterprise in new directions observable in the people of Newfoundland. You cannot buy a postal guide-book; you can only learn when the local steamboats are to sail by watching the newspaper advertisements, or the posters on the hoardings; you cannot even get a railway time-table—or you could not when I was there. All this is, no doubt, in some degree a result of lack of capital, but not altogether so. I felt somewhat out of the world while I was there, and even while I was in the capital. The newspapers are full of life; they abuse each other and their fellow citizens generally with the most complete absence of restraint, and they appear thoroughly familiar with all the unpleasant adjectives of the English language, and a few more. But although the Atlantic cable found its first new world station in Newfoundland, thanks to Cyrus Field, to my late friend, Sir John Pender, and to my present friend, Sir Ambrose Shea—though too messages are constantly passing through the island—yet I do not think the local papers give so much as an average of a quarter of a column of news that is sent to them direct, or that is less than three days, or even a week old.

I have spoken of much that is good, and it would be quite easy to speak of a great deal more. I have referred to some things that are not good, but which may, I think, be made so in time. And in criticising the present condition of Newfoundland, it must be admitted that the colony has had some serious drawbacks to contend with, and heavy blows to endure. The exclusive policy, neglect, and discouragement of immigration, which kept the colony back for centuries, has, indeed, come to an end, and the only remaining grievance, the French shore question, though real enough, is not so great a grievance as it has been represented.

In our own times, the great fire at St. John's, and still more recently the commercial crash of 1894, were blows sufficient to stagger a much larger community. But they are evils of the

past, recovery has set in, and the present outlook, in my opinion, is decidedly cheering.

There are many other interesting facts that I might bring before your notice, but I fear to weary you. Thus, I might speak of the lighthouse system, with its 40 or more well-guarded beacons, and of the facilities for docking vessels at St. John's, as also of the excellent water supply, and of the first class fire brigade of the capital. I might speak of the admirable schools—of the Christian Brothers and others—in St. John's, of the well-planned museum and its needs.

I have said nothing of the mineral riches of Newfoundland's dependency Labrador, which seem to be as great as those of the island itself. I have not referred to the difficulties experienced here in London in getting up-to-date and reliable information. There is neither High Commissioner nor Agent-General; you cannot buy, nor even borrow, a good map of the island, although one was published for the colony some years ago by Messrs. Stanford.

And I might go on to make all sorts of suggestions and prophecies which you would regard as wise or otherwise. But I think it is time to draw my remarks to a conclusion. I have endeavoured to convey to your minds in the short space of an hour some portion of the impressions which have been produced upon me by a couple of months of close investigation on the ground, and by a considerable amount of precedent and subsequent inquiry and research. During my visit I was heartily assisted by men of all ranks, and of all the faiths represented in the island. Furthermore, I had the honour of several interviews with his Excellency the Governor, with the late and present Prime Ministers, and with some of the leading members of both the late and present administrations. I received much assistance from Mr. Fraser, the Postmaster-General, from Mr. Burchell, the Government Engineer, and from other permanent officials, and I remember with gratitude the assistance rendered to me by Mr. Reid, on whose contracts I have nevertheless found myself obliged to comment freely, but I hope not unfairly. In particular, I have to thank Sir Ambrose Shea, and many members of his family resident in Newfoundland, for much advice, information, and hospitality. And if I were to sum up in

a few words my most important conclusion, it is that Newfoundland is a good country, occupied by a few good and loyal people. It has the advantage of being under the old flag, it affords a most favourable field for emigration, and for the employment of capital, which, if judiciously employed, cannot fail to secure a good return. I am convinced that it is a land with a future, and I think it may be said hereafter that if Newfoundland was discovered by Sebastian Cabot in 1497, it was rediscovered by the British people in the year 1897, when her Premier took part in the great Colonial concourse here in London to celebrate Her Majesty's Diamond Jubilee.

The CHAIRMAN said they had had so many interesting, important, and comprehensive accounts of our great Australasian, American, African, and West Indian colonies in that Institute, that the admirable sketch which Mr. Collins had given of Newfoundland and its resources came as a decided novelty. Most of them were doubtless quite unaware of the great resources presented by that old colony, and of the advantages which it obviously offered to those who wished to seek for their enterprise a wide field by emigration. With respect to the mineral wealth of the country, it was evident it had been practically but little explored. Mr. Collins had been good enough to furnish the scientific department of the Institute with specimens of certain ores, the examination of which fully bore out what he had said as to their great value—possibly their very great future value in connection with one or two of the most important mineral industries in this country. At present we depended in a great measure upon certain foreign countries, and also certain distant colonies, for accessions to our own mineral wealth, and it was certain that in the future Newfoundland would contribute in this direction to an appreciable extent. Besides being a keen observer, Mr. Collins was an interesting *raconteur*, and it was to be hoped he would favour them with a further address after he had paid the second visit to Newfoundland which he projected. In the name of the meeting, he thanked Mr. Collins for his interesting lecture.

Mr. COLLINS having briefly acknowledged the Chairman's complimentary remarks, the proceedings closed.

