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COLONIAL REPORTS.—MISCELLANEOUS.

No. 7.

# NEWFOUNDLAND.

# MINERAL RESOURCES OF THE COLONY.

Presented to both Houses of Parliament by Command of Her Majesty.
*August* 1896.

LONDON:
PRINTED FOR HER MAJESTY'S STATIONERY OFFICE,
BY EYRE AND SPOTTISWOODE,
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1896.

[C.—8189.] *Price* 1*s*.

# LIST OF PAPERS.



## MAPS.

No. 7.

# NEWFOUNDLAND.

## MINERAL RESOURCES OF THE COLONY.



No. 1.

Sir H. MURRAY to MR. CHAMBERLAIN.
(Received January 13, 1896.)

Government House, St. John's, Newfoundland,
SIR, December 27, 1895.

WITH reference to a conversation I had with you before I left England on the subject of the mineral resources of this Island, and with reference to the instructions which you then gave me on the subject, I now forward a report from Mr. Howley, the head of the Geological Survey of the Island, on the mineral formation of Bell Island in Conception Bay.

2. I also forward plans of the Island in illustration of the report; and some specimens of the ore picked up by chance are also forwarded.

3. It will be seen by the report that part of the minerals of the Island have been leased to a Canadian company; the portion under lease to them is marked in the plan by the dotted black lines; but the minerals in the western portion of the Island are still unlet: they are, I understand, in the hands of about four individuals.

4. In working the minerals on this Island there seem to be two main advantages:—

1. The ease with which the ore is obtained, it being close to the surface; the bed which the Canadian company is now working is so, and I am informed that in bed No. 1 the ore is less than two feet from the surface.
2. The proximity of the beds of ore to deep water. The Canadian company have constructed the necessary works to enable them to ship the ore in the manner described in the report at what is marked on the plan as the "Loading Pier"; but equal facilities are said to exist for the construction of another pier at Lance Cove, and a pier built there would be rather more sheltered than the one at "Loading Pier," partly owing to the lie of the Island itself and partly owing to the protection given by the two small adjacent islands.

5. I do not know whether the ease with which the ore can be obtained and shipped would compensate for the cost of freight across the Atlantic so as to enable it to compete with the Spanish and other ores in European markets, but I forward the report in the hope that you may think it worth while to draw the attention of the Crown Agents to the facts in connection with these minerals,

NEWFOUNDLAND. MINERAL RESOURCES.

so that they may be brought to the knowledge of London capitalists.

6. In expressing this hope I am aware, though I regret it, that owing to the ease with which the ore can be obtained the working of the mine will not lead to the employment of any large amount of labour, employment which it is so desirable to obtain for this Colony; the mine now being worked by the Canadian company hardly employs the spare labour already existing on the island, but if it is worked by an English company that company may gradually extend its operations to other minerals in the Colony.

7. Any exports of ore from this Colony are at present handicapped with the duty which it has to meet on its importation into Canada, and I think also into the States.

8. Any communication on the subject of the mines which are in the market in Bell Island might be addressed to the Rev. Father Magrath, Manuels, Newfoundland.

I am, &c.
H. MURRAY.

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Enclosure 1 in No. 1.

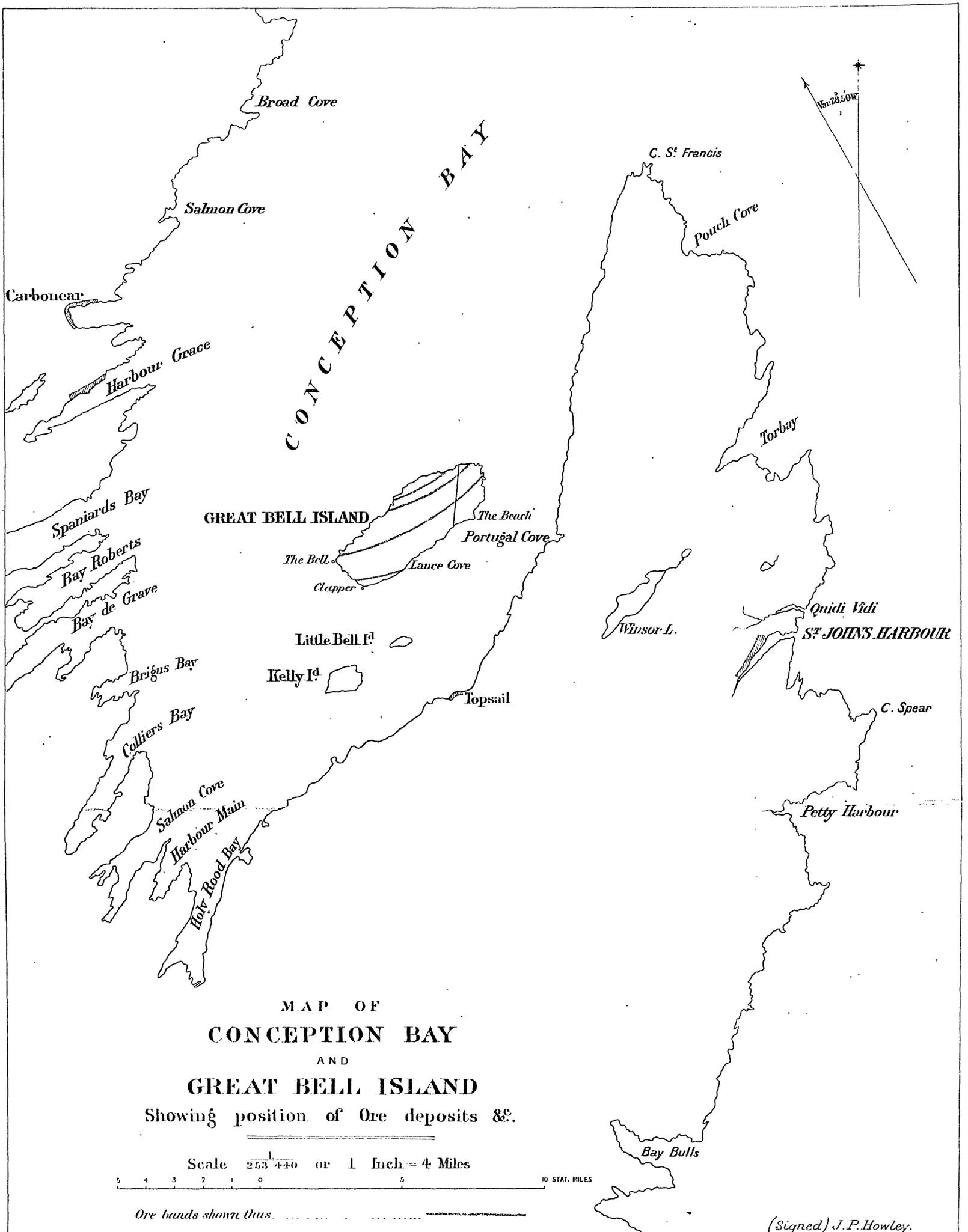
Geological Survey of Newfoundland,
St. John's, Newfoundland,
December 12, 1895.

SIR,

YOUR request for a special report upon the mineral characteristics, &c. of Bell Island in Conception Bay, necessitated a visit to that locality, and several days' close investigation of its structure. It is now over twenty-five years since an examination of the island was made, long before its iron deposits were considered to be of commercial value, although their existence was known as far back as the beginning of this century. Anspach in his history, published in 1819, mentions the fact of "an iron mine occurring at Back Cove, Bell Island."

The following report of the result of the recent examination will, I hope, meet the approval of the Government.

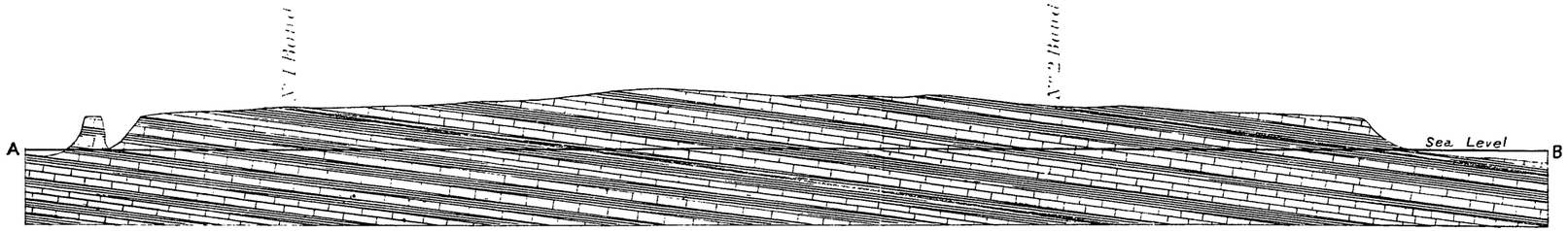
Great Bell Island forms the largest and most easterly of the group of three, viz:—Great and Little Bell Islands and Kelly's Island, which occupy a position in the Bay of from three to five miles off its southern shore. It is of an oblong form, six miles long by an average of two miles wide, thus giving a total superficial area of twelve square miles. The shores of the island are for the most part very abrupt, presenting mural cliffs all round, except at two points on the southern side of the island, Bell Island beach, and Lance Cove, where the principal settlements are located. The cliffs range from 100 to 300 feet in height, and the highest elevation on the island, inland, reaches 495 feet. The contour of the surface is comparatively level or rolling, consisting of low rounded parallel ridges with valleys between. They tend generally obliquely across the island, in an east by north and west by south direction, magnetic. Though much of the surface



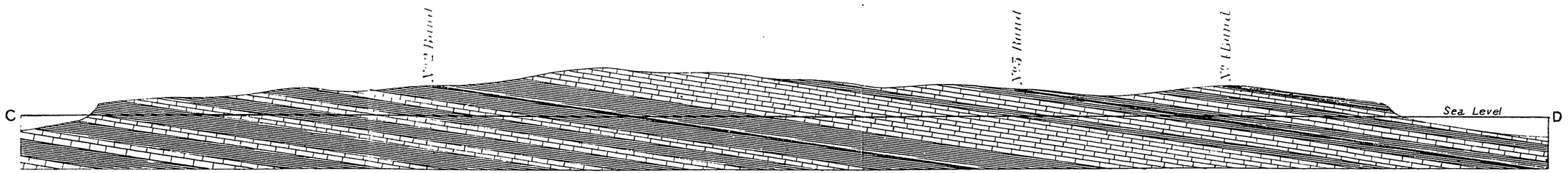

I. D. W. O. N° 1185 (2).

Lith^d at the Intell. Div. War Office, July 1896.

# SECTIONS ACROSS GREAT BELL ISLAND FROM SOUTH TO NORTH

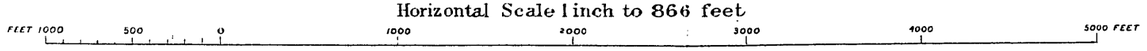



SECTION A.B. SHOWING POSITION OF ORE BANDS Nos 1 & 2

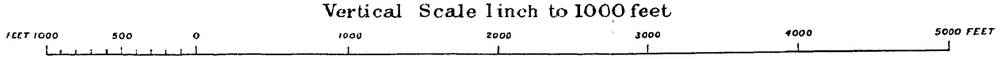



SECTION C. D. SHOWING POSITION OF ORE BANDS Nos 2. 3 & 4

Horizontal Scale 1 inch to 866 feet




Vertical Scale 1 inch to 1000 feet




I.D. W.O. No 1185 (b)

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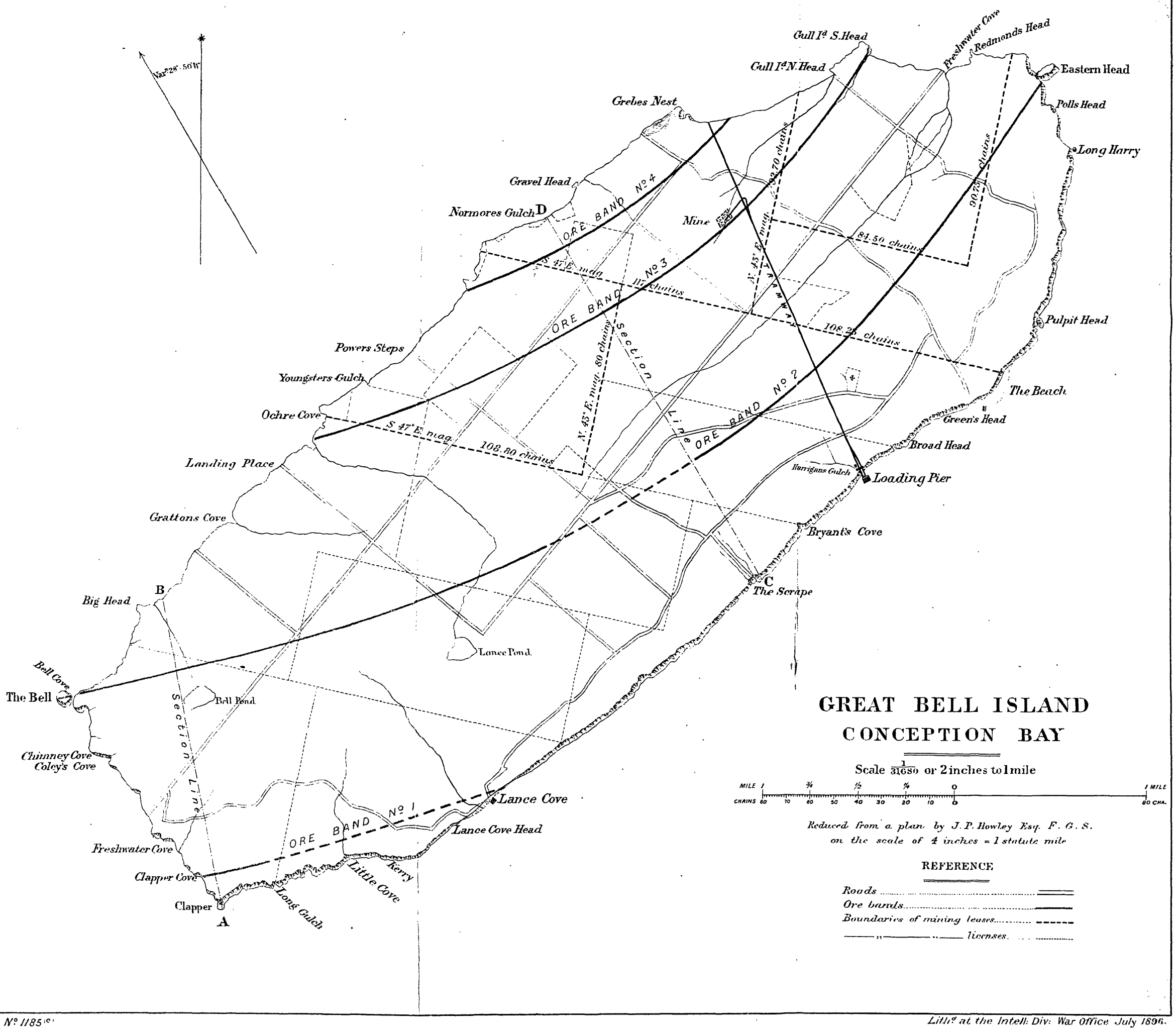


# GREAT BELL ISLAND
## CONCEPTION BAY

Scale $\frac{1}{31680}$ or 2 inches to 1 mile

MILE 1 | ¾ | ½ | ¼ | 0 | 1 MILE
CHAINS 80 | 70 | 60 | 50 | 40 | 30 | 20 | 10 | 0 | 80 CHA.

*Reduced from a plan by J. P. Howley Esq. F. G. S. on the scale of 4 inches = 1 statute mile*

REFERENCE

*Roads* .....
*Ore bands* .....
*Boundaries of mining leases* .....
——,,——,,—— *licenses* .....

I.D. W.O. N° 1185 (c)

*Lith° at the Intell: Div: War Office July 1896.*

of the island is cultivated, there is still a large proportion unoccupied, and covered with wood or swamp. Most of the original forest is denuded, but a very vigorous growth of young fir is rapidly replacing it.

Not till within the past few years did its ore deposits attract the attention of capitalists from outside. The holders of licenses to search for minerals were fortunate in leasing their claims to the Nova Scotia Steel Co., Limited, who have just entered upon mining operations on an extensive scale. To the obliging manager of the mine, Mr. Chambers, I am indebted for much valuable information and assistance in carrying out my recent investigation. His plans and sections, showing the extent and position of the ore deposits on their claims, were admirable examples of geological work, and were so clear and explicit in their details as to leave nothing to be desired. I had an opportunity of verifying all this work during my stay. In fact, it formed a groundwork for the study of the structure of the whole island, and thereby saved me much time and labour.

Geologically, the island is composed of a series of shales and sandstones alternating. The shales prevail towards the base and top of the section, while the central portion of the island is occupied by a wide belt of hard white-weathering sandstone or quartzite rock, which cleaves into beautiful blocks and flags, suitable for building or paving purposes. The prevailing angle of inclination of the strata is about 8°, the general direction being N. 28° W. magnetic. The strike however, is not quite straight, but forms a segment of a circle with a gentle curve northward at either end. Here the dips change somewhat, pointing more to the east and west.

The lowest strata forming the base of the section crop out on the extreme south-western end of the island, while the highest occupy a strip of the shore on the north side, near the north-east corner. The total thickness amounts to about 2,340 feet. The first 1,000 feet consists chiefly of shaly strata with thin irregular layers of sandstone interstratified, which become more and more numerous, and of thicker dimensions towards the top. These are succeeded by the white-weathering sandstone or quartzite mentioned above, as striking through the central portion of the island. It attains a thickness of about 700 feet. The quartzite is in turn overlaid by sandstones and shales in about equal proportions, constituting the remainder of the section, and is about 640 feet thick. These rocks hold numerous fossil organisms, all referable to the Upper Cambrian series of Wales. The Lingula flags are well represented. Mr. Matthew, of New Brunswick, to whom a set of fossils from this island was sent for identification, is even inclined to regard some of the higher strata as Ordovician, Lower Silurian.

With regard to the deposits of iron, there are four well-defined beds of ore, regularly stratified, forming part of the general section, and therefore distinct from lodes or veins as generally understood. Two of these occur in the lower shaly portion, and two in the

NEWFOUNDLAND. MINERAL RESOURCES.

upper, being separated from each other by several hundred feet of strata. The lowest ore bed crops out in the cliff at Clapper Cove, near the S.W. end of the island; where however, it could not be reached for examination and measurement. It would appear to be about two feet thick. Its strike would carry it across the S.W. corner of the island towards Lance Cove, but it has not been traced out as yet, nor has its eastern outcrop been discovered. In all probability this occurs where the land is low, and the cliffs taper down to the shore of the Cove. Some 730 feet of strata intervene between this and the second ore bed. The latter crops out on the extreme N.W. corner of the island and is seen to cap the Bell Rock, lying off this point about 150 feet or so. Where the outcrop of this band occurs is again inaccessible, the cliffs being exceedingly dangerous to approach. It appeared to be about 4 feet thick. This ore band has been traced on its strike eastward some two miles and a half, by means of trial pits sunk along its outcrop. About a half a mile from the Bell Rock Point, two of these pits, about 500 feet apart, afforded good examples of the dimensions and character of the deposit. One was a surface cutting across the bedding, and was sunk to about 4½ feet. It showed alternate layers of rock and ore. The top layer consisted of one 8-inch and two 6-inch bands of ore, with partings of dark greenish micaceous rock between; while towards the bottom a few thin layers of ore of good quality occur. The next opening was a shaft, sunk vertically to a depth of some 10 or 12 feet, which exhibited the following section downwards:—

| | Ft. | in. |
|---|---|---|
| Ore on surface - - - | 1 | 6 |
| Rock - - - - | 0 | 5 |
| Ore - - - - | 0 | 10 |
| Rock - - - - | 0 | 10 |
| Ore - - - - | 0 | 11 |
| Rock - - - - | 1 | 2 |
| Ore - - - - | 0 | 3 |
| Rock - - - - | 0 | 2½ |
| Ore - - - - | 0 | 4 |
| Rock - - - - | 0 | 2 |
| Ore - - - - | 1 | 9 |
| Rock - - - - | 0 | 1 |
| Ore - - - - | 0 | 6 |
| Rock - - - - | 0 | 4 |
| Ore - - - - | 0 | 3 |
| Rock - - - - | 0 | 2 |
| Ore - - - - | 0 | 3 |
| Rock - - - - | 0 | 3 |
| Total - - - | 10 | 2½ |
| Ore - | 6 | 7 |

This same band was seen to outcrop at the extreme eastern end of the island, where it caps a detached rock mass known as Eastern Head. Here it would appear to be about 2 feet thick. It was traced westward from this point for nearly three miles, leaving about a mile or so, where it passed beneath swampy land, or through dense woods unexplored. There can be no manner of doubt that it continues unbroken through the entire extent of the island, from Bell Rock to the Eastern Head, a total distance of six and a quarter miles. The area occupied by this ore-bed should therefore approximately reach about six and three quarter miles. It will be seen that while there is no doubt about the continuity of the ore-bearing belt, it varies considerably in thickness, as is also the case with all the other bands, but judging from the numerous surface outcrops, and the masses of loose ore turned up here and there in cultivating the soil, I should be inclined to think it averages between three and four feet of good ore throughout.

The third and fourth ore beds are confined to the upper shales, above the quartzite, the former occupying an area of about one and a half square miles, the latter, of a little over a quarter of a square mile. The outcrops of these two bands have been thoroughly traced out by Mr. Chambers and they are all contained within the Company's leases, except a mere corner of the lower band. They are both perfectly parallel to each other, forming a gentle curved line, and are separated by about 150 feet of strata. The lower band, No. 3, ranges in thickness from 4 to 12 feet, averaging about 6 feet 6 inches. The upper band, No. 4, ranges from 3 feet 6 inches to 6 feet 6 inches averaging about 5 feet 6 inches. According to a rough estimate made by Mr. Chambers, the two together are believed to contain about (40,000,000) forty million tons of ore. Several thin irregular layers occur between the two main bands, as well as above the upper and below the lower one, but those are not considered of much economic importance. Most of the associated strata are more or less impregnated with iron, though not sufficiently rich to be considered as ore.

The general character of all these deposits is pretty much the same, though varying somewhat in the percentage of metallic iron they contain. The uppermost, No. 4 band, is the richest, averaging 56 per cent. of metal. No. 3 averages about 50 per cent. But one analysis of No. 2, that I am aware of, has been made, which gave 48 per cent. of metal. No. 1 has not been analysed as yet. They are all a variety of brown hematite ore, of a dull colour, with a somewhat steely lustre on a fresh fracture, and having a peculiar fine granular structure. The bands are all distinctly stratified, conforming in every respect with the associated strata. Fossil shells, Lingila, are abundant on the top of No. 1, and are found more rarely in all the others. The ore partakes of the same cleavage as the sandstone of the section, being, if anything, even more jointed. It breaks out in rhomboidal junks of all sizes, often nearly square, more frequently oblong. It thus affords

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most unusual facilities for mining, and owing to its lying so near the surface, and being covered only with a thin coating of soil, it can be easily stripped, and the ore bed laid bare for acres in extent. Its jointed cleavage renders blasting unnecessary, except an occasional shot to loosen up the ore. Half a dozen men with mining picks could raise several hundred tons per diem without difficulty. The principal workings at present in operation are situated on No. 4 band, about 1¾ miles north from the loading pier. Here the manager's house, store and engine house are located. A double track tramway connects the mine with the south side of the island, where the pier stands, at a point on the shore called Harrigan's Gulch; just inside Bell Island beach. The cars for transporting the ore are made of iron, and are capable of containing 1¼ tons each. They are manipulated by means of an endless wire rope passed round a drum in the engine-house. A 90 horse-power engine does the work of hauling out the full cars and pulling back the empties. They are secured to the wire rope by iron grips at each end of the car. When a loaded car reaches the pier it is received in a kind of crib, and by means of a lever is upset with ease, the contents falling into one of the bins while the car uprights itself and is passed on to the other track. The engine is so situated that it can be used in other work about the mine, such as raising ore, pumping, &c. when necessary. At the end of the tramway a suspension bridge of over 300 feet, carrying the rails, connects the pier or loading block with the cliff above. This block is situated sufficiently far off to afford ample water for large vessels to lay alongside. It is a very substantial structure of open trestle-work, built of Georgia pitch pine, and well ballasted at the base. It stands about 90 feet above the water-line. It contains ten bins capable of holding 200 tons of ore each, or in all two thousand (2,000) tons. Each bin is fitted with a trap door at the bottom to retain the ore, and from the outside four iron shutes guide it into the hold of a vessel lying alongside the pier. When full of ore, it is calculated a vessel can be loaded in a few hours, as it is merely necessary to raise the traps and allow the ore to slide aboard. The whole plant as it now stands has a capacity of about 200 tons per diem, that is to say, so much ore can be raised, run out, and put aboard ship in that time, but Mr. Chambers informs me that when in full working order and fully equipped with cars, &c., the output can be increased to at least 500 tons. During my visit the first attempt to transport ore took place, and about 200 tons were run out, but some slight hitches occurred which necessitated a few alterations and improvements in the running gear before everything could be expected to work satisfactorily. In order to facilitate operating the tramway telephonic communication between the mine and the loading pier was found to be necessary, and this had just been completed when I left. A vessel is expected in a few days to take the first load of ore to market.

Although not a high-grade ore by any means, the abundance of it so near the surface, with the unusual facilities for raising and shipping, should render it a most valuable property. Its chief value to the present Company, I understand, consists in its ready fusibility, thereby acting as a flux for the less tractable ores of Nova Scotia. Moreover, as these latter ores contain little or no phosphorus, and the former rather more than is necessary, a mixture of the two in the furnace affords about the requisite quantity of this substance in the resultant pig for the production of a good class of steel. The Nova Scotia Steel Company, Limited, of New Glasgow, are but the lessees of the property. They pay a royalty of five cents per ton on all ore raised to the original holders of the grants. These grants are four in number, comprising an area of one square mile each. The remainder of the island is held under licenses to search for minerals by several different parties. The facilities for working and shipping ore from these claims are equally as favourable as those described above. Were it hereafter considered advisable to smelt these ores on the spot, the island is admirably situated for the purpose, and many eligible sites for the erection of such works are available.

In conclusion I may add that I know of no more promising deposits of this class of iron ore in this country, nor do I think there are many in North America more favourably situated in every respect.

I have, &c.

Hon. R. Bond,
H. M. Colonial Secretary.

JAMES P. HOWLEY.

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Enclosure 2 in No. 1.

*Extract from "St. John's Evening Herald" of 27th December* 1895.

The success attending mining operations at Bell Isle, and the excellent quality of the product, give ground for the hope that the continuance of work there may result in a large increase in the output, and a consequent augmentation of the prosperity of that flourishing settlement. We learn that every satisfaction is being experienced with the people, who are turning out capital miners, and the island promises to benefit very largely from the discovery of these hematite deposits.

---

It is rather a pity, in this connexion, that coal cannot be found in such close proximity as to make it possible to establish smelting furnaces and refine the ore right at the pit mouth. This would be a matter of immense importance, and it would exercise no small influence on the Colony's future if the coal areas of the interior could be worked at a figure that would enable the output

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to be transported to an adjacent point to Bell Isle and sold at a price that would make possible the establishment of blast furnaces there.*

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No. 2.

COLONIAL OFFICE to the MUSEUM OF PRACTICAL GEOLOGY.

SIR, Downing Street, January 24th, 1896.

I AM directed by Mr. Secretary Chamberlain to transmit to you the accompanying report† which has been received from the Governor of Newfoundland regarding the mineral resources of Bell Island, together with specimens of ore picked up there.

Mr. Chamberlain would be glad if you would favour him with any observations that may occur to you upon this report.

I am, &c.

JOHN BRAMSTON.

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No. 3.

Sir H. MURRAY to Mr. CHAMBERLAIN
(Received January 21, 1896.)

Government House, St. John's, Newfoundland,

SIR, January 3, 1896.

WITH reference to my report of the 27th ultimo† respecting the mineral deposits in Bell Island in Conception Bay, I have now the honour to forward a more detailed report, dated the 30th ultimo, from Mr. Howley, the head of the Geological Department in this Colony, on the subject of the deposits of iron ore to be found in this island. I forward it in the hope that you may think it worth while to place it in the hands of the Crown Agents for the Colonies, with a view to the attention of capitalists in the City being drawn to the prospects of mining adventure in this Colony.

I am, &c.

H. MURRAY.

---

* The railway comes along the Coast; I should think within five miles of the Island. H.M.

† No. 1.

Enclosure in No. 3.

NEWFOUNDLAND, MINERAL RESOURCES.

Geological Survey Office,
St. John's, Newfoundland,
December 30, 1895.

May it please Your Excellency,

In reporting on the iron deposits of the Island, I may state that hitherto little attention has been given to this class of ores, under the impression that their value, from an economic point of view, was infinitesimal in comparison with copper, lead, and other more valuable minerals. Not till within the last year or so, has any attempt been made to utilize these ores, if I may except the pyrites deposit of Pilley's Island, which has been mined chiefly for its high percentage of sulphur. The ore is chiefly used in the manufacture of sulphuric acid. It however yields a considerable percentage of very excellent pig iron, both for forge and foundry work.

Of this class of iron ores there is a great abundance in many parts of the Island. It occurs in all the copper mines of Nôtre Dame Bay, forming considerably more than half the bulk of the deposits. At Tilt Cove, a mass of pyrites, said to be about 200 feet thick, and containing about two or three per cent. of copper, has been worked for some time. Another enormous mass of similar ore occurs at the Terra Nova Mine, Bay Vert, which has been abandoned for a number of years. It was worked as a copper mine only, but the percentage of that metal was found to be too low to render it a paying speculation. Another large deposit of pyrites occurs in Port au Port Bay, West Coast. It has not yet been operated, but gives promise of being fully equal to that of Pilley's Island. Pyrites occur in very many localities and in almost every one of our great bays in more or less quantity. Magnetic Pyrites, Pyrrhotite, is also a pretty abundant ore, especially in association with the copper deposits, and chloritic slates and serpentines. It has been found, on analysis, almost invariably to contain a small percentage of nickel, and in this respect might well be worthy the attention of capitalists. It is from a similar class of ore in the Sudbury District of Lake Huron, Canada, that so much nickel is now derived. Arsenical Pyrites, or Mispickel, is rather a common mineral also, but not in any such proportion as the preceding.

With regard to the more generally useful ores of iron the island possesses the following: Magnetite, Chromite, Hematite of several varieties, such as Specular iron, Red Hematite, Red Ochre, Jaspery iron ore, and clay ironstone. Bog iron ore is not infrequent in some parts of the interior.

The deposits of magnetite are sometimes enormous. One band at Union Mine, Tilt Cove, ranges from 4 to 30 feet in thickness and is of a very superior quality. Another large body of this ore occurs at Mings Bight. It is also found in many other localities, both on the coast line and in the interior, but the most extensive deposits known are found on the west coast near the Bay of St. George. One enormous mass of this ore has

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been located about three miles inland from the head of this bay. It is over fifty feet thick, and is seen cropping out on both sides of a ravine running up the steep sides 700 feet or more. Millions of tons of loose ore in huge blocks, which have become detached from the mass, encumber the bottom of the ravine. An analysis of this ore, furnished me by Mr. Bishop, the owner of the property, gives 65·05 per cent. metallic iron; but it contains a varying percentage of titanic acid, which is considered a very deleterious ingredient. It is however absolutely free from sulphur and phosphorus. Here is a copy of the analysis by Mr. W. H. Pike:—

| | | |
|---|---|---|
| Metallic iron | - | 65·05 per cent. |
| Titanic acid | - | 4·00 „ |
| Silica | - | 5·00 „ |
| Sulphur | - | free. |
| Phosphorus | - | free. |

This is probably about the most favourable assay obtained. I do not know what the average may show.

That the ore is not confined to this one locality is attested by the fact that numerous boulders of a similar character are strewn over the surface of the country along the seashore, and especially along the courses of the many streams flowing from the mountainous district to the eastward known as the Long Range. The mountains are chiefly of Laurentian age, composed of various granitic, syenitic, gneissic rocks from whence the ore has been derived. Judging from the scattered *débris*, it would appear to range from Port au Port Bay to the Highlands of St. George's Bay, or perhaps to the Codroy Valley, a distance of some 50 or 60 miles. Quite a large deposit of magnetic iron is indicated at a point in the interior near the head of the Bay D'East River, amongst a set of serpentine and chloritic rocks. Many large fragments of the ore were observed there some few years ago, but the deposit was not traced out.

Chromic iron, chromite, occurs very frequently, especially associated with the Magnesian group of rocks, usually termed here the Serpentines—more properly the Quebec Group of the Canadian geologists. It has been found in Nôtre Dame Bay in the vicinity of the copper deposits, and in several other parts. It was observed in the interior on the Bay East River, and at Port au Port Bay quite an extensive deposit has recently been discovered. I understand this latter property is now in the hands of an American company, who are about to open it up next spring.

Hematite and its varieties are also of common occurrence in various parts of the island. A good class of this ore occurs at the Tilt Cove location, but I am not aware of the extent of the deposit. It analyses 69·41 per cent. of metallic iron. The ore is known to exist in Trinity and Conception Bays at several points; but by far the largest and most important deposit yet discovered is that on the Great Bell Island, already fully reported upon. Here, four well-defined bands, ranging from 2 feet to 12 feet thick, form regular layers of the stratification. The analyses

of three of these show 48 per cent. 56 per cent. and 58 per cent. of metallic iron respectively. The mode of occurrence, facilities for working and shipping this ore, have been all set forth in the report alluded to.

Jaspery iron ore, mostly of a low grade, is abundant, and there is reason to believe this class of ore will be found, upon further investigation, of better quality, and of considerable importance. It occurs chiefly in a similar set of rocks to those holding the extensive deposits of Minnesota: the Keewatin Series.

Clay ironstone, which is confined to the carboniferous areas of Bay St. George, and the Grand Lake Region, forms extensive deposits, especially in the latter region. Nodular bands of several feet in thickness are frequent amongst the coal measures on the south side of Grand Lake. In one of the sections on Aldery Brook, the strata for a thickness of 124 feet is more than half made up of this ore in layers of from a few inches to 3 feet in thickness. The ore has not as yet been analysed, and I cannot therefore give the percentage of metallic iron it contains. Bog iron ore is met with in several parts of the interior in the form of irregular layers or incrustations, usually in marshy or peaty ground. Some of these deposits are pretty extensive, though not usually very thick. Magnetic iron sand has been frequently seen on the West Coast, or on the shores of the larger lakes, but not in very extensive deposits. Rarer varieties of iron, such as Spathic iron, Siderite, Vivianite, Ilmenite, &c. occur sparingly, mere specimens only having been met with.

In the vicinity of Conception Bay there is a pretty extensive deposit of an earthy iron ore, containing about 50 per cent. manganese, which might be available for the manufacture of spiegeleisen.

I have little doubt that should more interest be manifested in the working of our iron ores in the near future, many hitherto neglected deposits will be found on investigation to be of considerable value; while a systematic search for such ores will, I am convinced, result in the discovery of many others as yet unheard of.

I have, &c.
JAMES P. HOWLEY.

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No. 4.

Sir H. MURRAY to Mr. CHAMBERLAIN.
(Received January 21, 1896.)

Government House, St. John's, Newfoundland,
SIR, January 3, 1896.

1. AS so many statements have appeared in the newspapers respecting the coal seams in this Colony, it may be your wish to be put in possession of the facts relating to it which have been ascertained up to the present date by the Geological Department of the Colony.

NEWFOUNDLAND. MINERAL RESOURCES.

2. I therefore enclose copy of a report, dated 29 November last, from Mr. Howley, the head of the Geological Department, to the Colonial Secretary, with two tracings in illustration of the report.

3. It will be seen from the report that there are at present two distinct coal areas, one on St. George's Bay, and one in the Grand Lake district.

4. The railway has been already built a good distance beyond the Grand Lake district. The coal area is on both sides in close proximity to the line; but the coal obtained in it will have to be conveyed over 45 miles of the line before it will reach a point on the Humber river at which it could be shipped; the gradient of the line is, however, on this part very favourable for its transit.

5. The railway has not yet reached the St. George's Bay area, but it will probably do so this year; but when it does, it will keep within reasonable proximity of the area, and its course may be deflected so as to come still nearer to it. But there will be under any circumstances not less than 35 miles of railway carriage for the coal before it can be shipped at Port au Basque.

6. For any continuous shipment of coal all the year round Port au Basque will have to be used, as it is free from ice all the year round.

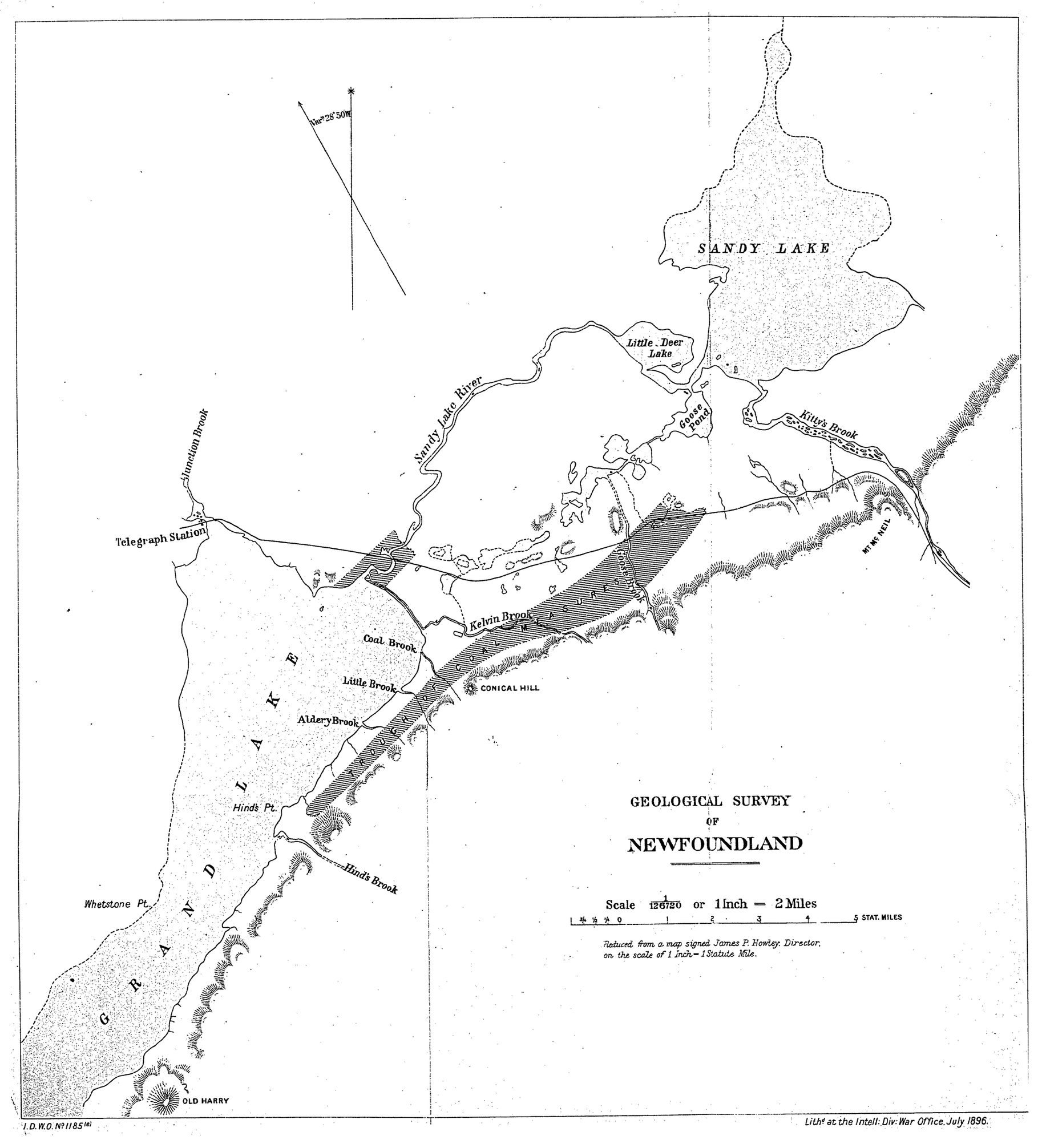
7. It is believed, after local tests, that the Newfoundland is a stronger and better coal than the Sydney coal, with which in the market it will have to compete, but as the latter coal is run straight from the mine into the ship, the former will be heavily handicapped by the cost of the railway carriage, unless mining labour can be obtained more cheaply in Newfoundland than in Sydney. It therefore remains a question whether Newfoundland coal—plentiful as it may be—can compete with the Sydney coal even for the supply of the wants of the Colony.

8. It is very desirable that this question should be tested at as early a date as possible. Mr. Reid, the railway contractor, has tendered to work a certain portion of the Grand Lake area, but no terms have as yet been agreed upon between him and the Government. I hope, however, that one will shortly be arrived at so as to enable Mr. Reid to commence working in the spring. This would give additional employment in the Colony, besides that which will be afforded next year, and during part of 1897, in the construction of the railroad.

9. As Mr. Reid is bound under his contract to operate the line for ten years after its completion, he has, as it seems to me, the practical control of the conditions under which the coal can be worked, as he can regulate the rate at which coal can be carried on the line by any competitor during the period of his contract.

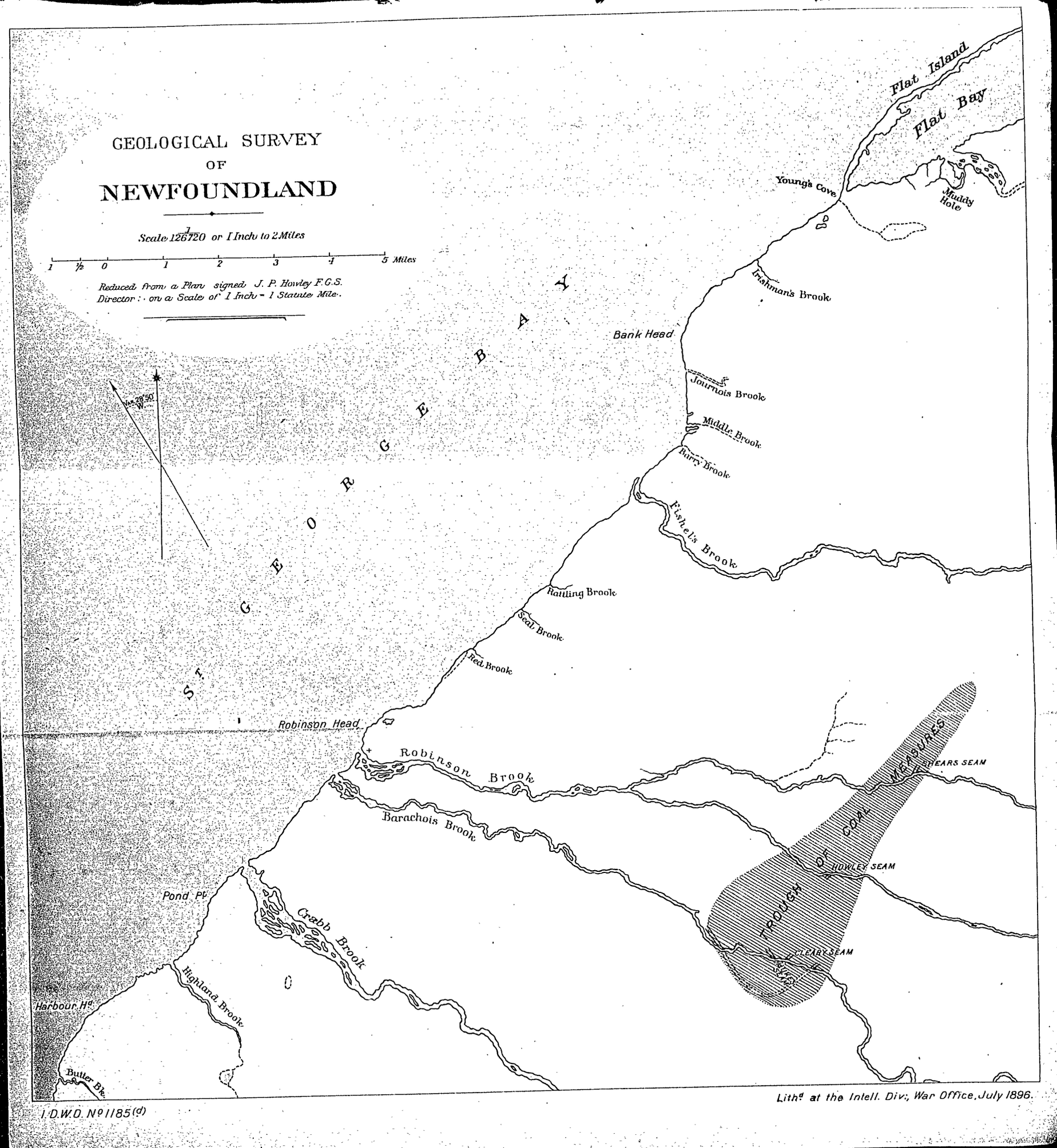
10. Specimens of the coal appear to have been analysed in 1892 by Mr. Fitton, a mining engineer in England; *see* page 53 of the pamphlet* on the mineral resources of the island by Mr. Howley, which I enclose.

* "The Mineral Resources of Newfoundland." By James P. Howley, F.G.S., 1892.




I.D.W.O. Nº 1185 (e)

Lith^d at the Intell: Div: War Office. July 1896.




Lith^d at the Intell. Div^n, War Office, July 1896.

I.D.W.O. N°1185(d)

NEWFOUNDLAND. MINERAL RESOURCES.

11. I had intended to forward with this report some of the latest specimens of the coal which has been received in St. John's, but on the whole I am indisposed to do so, as it is not clear whether the specimens in hand fairly represent the quality of the coal which may be obtained at a greater depth. That it is a *strong* coal there seems no reason to doubt, but it seems at present open to doubt whether it is of the anthracite quality sufficiently to make it suitable for use in the Royal Navy or in the mail steamers on the North American or the West India Stations. If it should prove to be so, there will probably be a good opening for it.

12. If it is considered desirable that specimens should be sent to enable the Admiralty to form some, though perhaps not a final, opinion on the subject, I will do so on the receipt of instructions to that effect.

13. While on the subject of the coal areas in this Colony, it may be satisfactory to you to be informed that actually on the line of railway—the line passing through them in cuttings—there are very extensive deposits or formations of the finest sand for use in metal mouldings, and of the clay which is used in the manufacture of terra cotta. The sand has been tested in the foundry near, and is found to be far superior to that imported from the States. Mr. Reid hopes to place this sand before long on the English market, samples having been sent to Glasgow. As to the terra cotta clay, no steps have, I believe, been as yet taken by him.

I am, &c.

H. MURRAY.

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Enclosure in No. 4.

Geological Survey of Newfoundland,
St. John's, Newfoundland,
November 29, 1895.

SIR,

IN compliance with your request, I beg to furnish you with the following condensed report upon the coal areas of the St. George's Bay and Grand Lake districts, with the accompanying tracings to illustrate the same. These comprise all the facts relating to this subject, so far as has yet been ascertained from actual study in the field. It will be seen that the full extent and importance of these coal areas remains yet to be determined. In a country beset with so many obstacles to successful exploration, the intricate problem of working out all the details of the extensive carboniferous series of rocks, and locating the minor troughs of true coal-bearing measures, is no small task. It will take several seasons' work to place us in a position to say positively how much coal is really available for use in either locality.

NEWFOUNDLAND. MINERAL RESOURCES.

But one season, that of 1889, was actually devoted to developing the extent of the coal measures in the Bay St. George area, with the following results:—

Sixteen coal seams were uncovered on the Middle Barachois River, all of which, owing to the doubling up of the strata in the form of a trough, are repeated, by being again brought to the surface with an opposite inclination. The trough is narrow, being, so far as is ascertained, about two miles wide on this brook.

On Robinson's Head River, two miles distant, the south side only of the trough was seen, and three seams of coal uncovered.

On Northern Feeder, a tributary of the latter river, and at two and a half miles further eastward, four seams were seen which would appear to be near the centre of the trough. The extreme points, east and west, at which coal was actually observed in place, are about six miles apart. How much further the trough may extend has still to be determined; nor is the full width known with any degree of certainty. Of the twenty-three coal seams mentioned above, the greater number are of small dimensions, ranging from a few inches only to a foot in thickness. Those over a foot in thickness are the following:—

(1.) On Middle Barachois River:—

| | Ft. | in. | |
|---|---|---|---|
| Juke's Seam, containing - | 4 | 6 | of coal. |
| Cleary „ „ - - | 2 | 2 | „ |
| 18 inch „ „ - - | 1 | 6 | „ |
| Slaty „ „ - - | 1 | 4 | „ |
| Rocky „ „ - - | 1 | 8 | „ |
| Murray „ „ - - | 5 | 4 | „ |

(2.) On Robinson's Head River:—

| | | | |
|---|---|---|---|
| Howley Seam, containing - | 4 | 2 | „ |

(3.) On Northern Feeder:—

| | | | |
|---|---|---|---|
| Shears Seam, containing - | 1 | 2 | „ |

The Juke's Seam, which is the best in the section, averages as above, 4 feet 6 inches of good, bright, clean coal; but at one point it was found to swell out to 14 feet, containing 8 feet of coal. It was traced for about a quarter of a mile along the strike.

The Howley Seam comes next, and contains 4 feet 2 inches of excellent coal. The Cleary Seam, 2 feet 2 inches, is also a good quality of coal, while the Shears Seam, though only 1 foot 2 inches at its outcrop, is of a superior character, being almost a semi-anthracite. The Murray Seam, though the largest in the section, is not so good as the others. All the known seams in this trough aggregate a total thickness of 27 feet. This should give, for every square mile of area there may be found to occupy, 25,920,000 tons.

A small trough of the coal measures occurs on the north side of St. George's Bay also, in which two seams of coals were uncovered. They were not, however, of workable dimensions. The country here is very flat, and covered with so much drift material that very little rock is exposed; and without the use of

the boring rod it will be impossible to ascertain the extent of the trough.

The carboniferous area at the head of the Grand Lake on the Humber River has received more attention, and has been more fully studied out than either of the above; yet, owing to the very flat character of the country, and the enormous accumulation of superficial deposits over the greater part of it, much remains to be accomplished before it can be definitely determined how much of the region is occupied by the true coal measures. It is a most difficult region to explore, with very few exposures of the bed rocks, and as a consequence, the progress of our knowledge regarding the actual coal deposits has been necessarily slow. What has been ascertained up to the present time may be summed up as follows:—

On the south side of the Grand Lake a long, narrow, sharp trough of the coal measures has been traced from a point about four miles up the lake, extending eastward towards the head of the lake, and into the flat country beyond for a total distance of eleven miles. Several small brooks flowing into the lake intersect this trough at right angles, and some good sections are exposed on their banks. On Aldery Brook, the most westerly of these, thirty outcrops of coal were uncovered by coasteaning the surface. So sharp is the trough here, that the coal seams are crowded into a very narrow compass. Here also, as in St George's Bay, the doubling up of the strata repeats the coal seams, which in reality are only fifteen in number. Most of them are again very small, and average only a few inches in thickness. The following are the best in the section:—

| | Ft. | in. | |
|---|---|---|---|
| No. 6 seam, containing - - | 2 | 0 | of coal. |
| No. 7 „ „ - - - | 1 | 6 | „ |
| „ 8 „ „ - - - | 1 | 8 | „ |
| Big seam in centre of trough - - | 14 | 0 | „ |
| No. 14 seam, containing - - | 2 | 10 | „ |
| „ 15 „ „ - - - | 2 | 2 | „ |
| „ 16 „ „ - - - | 2 | 9 | „ |
| „ 25 „ „ - - - | 1 | 7 | „ |

(Nos. 16 and 25 are on the southern side of the trough.)

All the outcrops exposed in this section aggregate about thirty-six feet of coal.

On Coal Brook, two miles further east, the section uncovered shows 16 outcrops of coal, aggregating about 18 feet in all. Some of the upper and lower seams of Aldery Brook are not visible here. The trough is considerably wider, and the angle of inclination of the strata much lower. No. 4 seam, Coal Brook, from which was obtained the car-load of coal brought in on the Northern and Western Railway, is a good seam, containing 3 feet 5 in. of coal.

NEWFOUNDLAND. MINERAL RESOURCES.

On Kelvin Brook, three miles still further eastward, eleven outcrops of coal were uncovered, all apparently on the southern side of the trough. One of these seams contains 7 feet of excellent coal, another 2 feet 6 inches, and another 3 feet 8 inches. The northern side of the trough could not be reached on this brook, owing to the depth of superficial deposits; nor do we know as yet what width it attains here.

During the past season, coal was again struck close to the railway track, four and a half miles eastward of Kelvin Brook, on the line of strike. Only two actual seams were uncovered; one containing 3 feet 4 inches of coal, another 1 foot 6 inches. Indications of the presence of other seams, which could not however be reached with pick and shovel, were also seen. These again are all on the southern side of the trough, with a northerly inclination. The much lower angle of dip here gives rise to the supposition that the trough widens out very considerably as it leaves the hill range and enters the low flat country. Altogether it has now been traced for 11 miles east and west. How much further east it extends has yet to be determined, but there are good reasons for believing it runs out at least to Sandy Lake, four miles further.

That another and independent trough occurs about four miles to the north, in the vicinity of Sandy Lake River, and probably spreads out westward underneath the waters of the Grand Lake, there is no room for doubt. The boring operations of 1879–80 proved the existence of coal seams near the mouth of the above river, where it enters the lake, and numerous fragments of coal are continually being washed up from the bottom of the lake. On the other hand, the boring of 1893, near the mouth of Kelvin Brook, revealed the presence of an anticlinal ridge, of lower and unproductive measures, separating the northern and southern troughs.

The above contains the actual facts, so far as our knowledge of these coal areas enables me to state with certainty. Much has yet to be accomplished before it would be judicious to hazard an opinion as to the full extent and value of these two promising coal fields.

Hoping the information contained herein may prove satisfactory,

I have, &c.

The Hon. R. Bond, - - JAMES P. HOWLEY.
Colonial Secretary.

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No. 5.

Sir H. MURRAY to Mr. CHAMBERLAIN.
(Received January 24, 1896.)

Government House, St. John's, Newfoundland,
SIR, January 8, 1896.

WITH reference to my letter of 3rd instant, enclosing a report from Mr. Howley, the head of the Geological Department

in this Colony on the subject of the mineral formations in it, I forward herewith a specimen of iron ore which was only brought to him yesterday, but which he states to be of a valuable quality.

He calls it "limonite iron" or "Brown Hematite," and he believes that it will average as much as 65 per cent. of iron.

The ore comes from the western coasts of the Island near Bonne Bay, but the amount of it is at present unknown.

I think it right, however, to forward it you at once, while such steps are being taken as you may consider best to make known to English capitalists the value of the mineral formations in this Colony.

I am, &c.
H. MURRAY.

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No. 6.

GEOLOGICAL SURVEY to COLONIAL OFFICE.
(Received February 3, 1896.)

28, Jermyn St., S.W.,
February 1, 1896.

SIR,

WITH reference to your letter of the 24th ultimo,* on the subject of the mineral resources of Bell Island, Newfoundland, I have read Mr. Howley's report, and have the following observations to make regarding it.

Mr. Howley is a geological surveyor of long experience who has done great service in the exploration of Newfoundland. I would therefore put implicit trust in his observations contained in this report. From these observations it is clear that a large area of workable iron ore occurs in Bell Island; that owing to the low angle of inclination much of the ore can be worked at the surface and that the several seams are thick enough to be easily mined when surface workings are no longer practicable. It appears from the report that a company has already started to work the ore. If this company can profitably do so, and ship it from the mines, I think that other companies may probably be induced to take concessions. There is evidently ore enough to furnish workings for a number of companies for many years to come.

I am, &c.
ARCH. GEIKIE,
Director-General.

Report and relative documents returned herewith.

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* No. 2.

NEWFOUNDLAND. MINERAL RESOURCES.

## No. 7.

### Sir H. MURRAY to Mr. CHAMBERLAIN.
(Received February 5, 1896.)

Government House, St. John's, Newfoundland,
SIR, January 15, 1896.

WITH reference to my report of the 8th instant,* in which I enclosed a specimen of brown hematite ore (limonite), I have to state that since that date I have ascertained that a large quantity of that ore is imported from Spain by Sir W. Armstrong's Company.

2. I stated in that report on the authority of the head of the Geological Department in this Colony (who, however, has no means at his disposal of testing ore) that that ore would produce 65 per cent. or more of iron.

3. I find that there is a very large deposit of this iron ore on the south side of the Bay of Islands, close to the coast, which, if the Treaty Shore question caused no difficulty, could be easily worked and shipped at York Harbour in the Bay of Islands.

4. I was informed this morning by a man who is interested in getting this mine worked, and who has had, he stated, considerable mining experience both at the mines at Lake Superior, and at Marquette in Michigan, that at Lake Superior the ore of the quality which I now forward, which is the same as that sent with my report of 8th instant,* yielded 75 per cent.

5. As the cost of freight to England must decide whether it is possible for the minerals of this island to compete with the ore now imported from Spain and from Sweden, I have inquired as to the rate per ton paid for freight on copper ore sent to Swansea. Of this there has been considerable experience.

6. Mr. Smith, formerly agent for Messrs. Bennett, who were the owners of the Union Mine in Tilt Cove, Notre Dame Bay (on the east coast of the island), informs me that when he was agent for the mine some years ago, the rate per ton of the copper ore to England was between 6*s.* and 7*s.*, but that he believes it is less now; this is probably the case, as freight at present is low.

7. This agrees with the statement made to me this morning by the man above-mentioned, that the iron ore from the Bay of Islands on the west coast could be shipped to England at the rate of $\$1\frac{1}{2}$=6*s.* 3*d.*

8. It also agrees with a statement made to me by Mr. Reid, that sand for moulding purposes (minerals) could be shipped from the west coast at 6*s.* a ton.

9. I hope that this information may be of use in case you should think it worth while to communicate with the Crown Agents respecting the mineral resources of this Island.

I am, &c.
H. MURRAY.

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* No. 5.

No. 8.

COLONIAL OFFICE to the GEOLOGICAL SURVEY.

SIR, Downing Street, February 8, 1896.

I AM directed by Mr. Secretary Chamberlain to acknowledge the receipt of your letter of the 1st instant,* with some observations on a report by Mr. James P. Howley upon the mineral resources of Bell Island, Newfoundland.

2. Mr. Chamberlain desires me to thank you for your letter, and to say that as some further despatches have now been received relating to this subject and to discoveries of minerals in various other parts of the Colony, he will be much obliged if you will be so kind as to favour him with any remarks that may occur to you upon these despatches also, which are enclosed herewith,† together with the specimens of iron ore referred to. The Governor has been requested by telegraph to send home authenticated specimens of coal as soon as possible.

I am, &c.
EDWARD FAIRFIELD.

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No. 9.

Sir H. MURRAY to Mr. CHAMBERLAIN.
(Received February 26, 1896.)

Government House, St. John's, Newfoundland,
SIR, February 7, 1896.

WITH reference to my report of the 3rd ultimo,‡ respecting the coal areas in this island, and to your telegram of this day's date, I forward by the S.S. "Ulunda" a box containing specimens of coal, which has been labelled by Mr. Howley, the head of the Geological Survey. Should it be considered by you desirable, I will send a similar parcel of coal specimens direct to the London Chamber of Commerce.

2. I also forward a small specimen of chromic iron ore, which I am told is very valuable for pigment production. It was brought me by an experienced mining agent, who is in difficulty about working it on account of the French Treaty Shore question.

3. Mr. Howley informs me "that its principal use—at least one "of them—is the extraction of oxide of chromium for the manu- "facture of pigments, such as chrome green and yellow, which "are used largely in dyeing, calico printing, glass and porcelain "painting, &c. As an iron ore it is of little value owing to the "small percentage of iron it contains, and the abundance of "richer ores. I have mentioned this mineral in my report on "the iron ores. It is found in several parts of the island."

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* No. 6. † Nos. 3, 4, 5, and 7. ‡ No. 4.

NEWFOUNDLAND. MINERAL RESOURCE.

This report is the one (printed)* which I forwarded with my Despatch dated 3rd January 1896. *See* pages of the printed report numbered 19, 20, and 22.

I am, &c.
H. MURRAY.

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No. 10.

GEOLOGICAL SURVEY to COLONIAL OFFICE.
(Received March 3, 1896.)

28, Jermyn Street, S.W.,
March 3, 1896.

SIR,

I REGRET that an unavoidable delay has occured in my reply to your letter of 8th February last regarding the mineral fields of Newfoundland.

I have now considered the various papers enclosed with your letter. As stated in my communication of 1st ultimo† on the same subject, I believe Mr. Howley to be so experienced and reliable a geologist that his reports may be accepted as quite trustworthy. From his account of the iron ores of the Colony, it is clear that there must be great abundance of these ores and that they include a considerable variety. The pieces of limonite forwarded with your letter are undoubtedly good specimens of ore, though the average percentage of metallic iron which this ore would yield in practice may possibly not be so high as Mr. Howley estimates. Sir Herbert Murray's informant (letter of 15th January) must have been under a serious misapprehension as to the percentage of iron which this ore would give, 75 per cent. being above the possible yield even of the richest iron ore.

With regard to the coal seams of the Colony enough is known to prove that coal exists in a number of seams of varying quality, but the exact extent of these seams and the geological structure of the ground in which they lie do not appear to have been yet satisfactorily ascertained. There can be no doubt that the development of the coal-fields will be of the utmost importance in the progress of the Colony.

If the question is to be considered whether any money is to be expended in opening up the mineral-fields of Newfoundland, I would strongly advise that the first object to be aimed at should be a thorough exploration of the areas containing coal. Upon the development of the coal-field all the other mineral industries will largely depend.

With regard to the iron ores, they may, of course, be shipped to England or other centres of manufacture. But I am afraid that in the present state of the iron industry there would need to be some

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* Not reprinted. *See* footnote at p. 14. † No. 8.

exceptional circumstances in favour of Newfoundland to enable the Colony to compete successfully with other regions.

The various documents that accompanied your letter are returned herewith.

I am, &c.
ARCH. GEIKIE,
Director-General.

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No. 11.

COLONIAL OFFICE to the GEOLOGICAL SURVEY.

SIR, Downing Street, May 29, 1896.

WITH reference to your letter of the 3rd March,* respecting the mineral resources of Newfoundland, for which I am to express to you Mr. Chamberlain's thanks, I am directed to forward to you a box containing specimens of coal that has been received from the Governor, together with a specimen of iron ore, the nature of which is described in the despatch† of which a copy is enclosed.

2. Mr. Chamberlain will be much obliged if you will be so kind as to favour him with any remarks that may occur to you in reference to these specimens.

I am, &c.
JOHN BRAMSTON

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No. 12.

GEOLOGICAL SURVEY to COLONIAL OFFICE.
(Received June 5, 1896.)

28, Jermyn Street, London, S.W.,
SIR, June 4, 1896.

I HAVE received your letter of 29th ultimo‡ with the specimens of coal and chromic iron ore therein referred to. As stated in my letter of 3rd March, the coal seams of Newfoundland are known to exist in various places, their qualities have been analysed, and judging from the specimens now sent and from these published analyses, I have no doubt that the coal, if worked, would be a valuable source of revenue to the Colony. I have already pointed out that the extent and structure of the coal-field do not appear to have been, as yet, adequately ascertained. Possibly Mr. Howley may be in possession of this knowledge. But if not, I presume it does not exist and, in that case, if it is proposed to expend any money for the development of the

* No. 10. † No. 9. ‡ No. 11.

NEWFOUNDLAND. MINERAL RESOURCES.

mineral resources of the Colony, I would suggest that a small preliminary expense should be incurred in making a general survey of the coal-field, with the idea of guiding the proper opening up of the ground for mining purposes.

The chromic iron ore is undoubtedly a valuable mineral. If the deposit from which the specimen now sent is easily accessible, of sufficient magnitude, and capable of being successfully worked, it would probably be a more valuable enterprise than the working of any of the hematite and brown iron ores, of which specimens were received early in the present year.

I have meanwhile retained here the various collections of specimens for reference.

I am, &c.
ARCH. GEIKIE,
Director-General.

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No. 13.

Mr. CHAMBERLAIN to Sir H. MURRAY.

SIR, Downing Street, June 23, 1896.

I HAVE the honour to acknowledge the receipt of your despatches* regarding the mineral resources of Newfoundland.

Your despatches, and the mineral specimens which you have from time to time sent to me, were forwarded to the Director-General of Geological Surveys in this country, and I now enclose, for the information of your Ministers, copy of the replies† received from Sir Archibald Geikie.

I propose to have all the correspondence on this subject printed and to send copies to the Imperial Institute, to the different Chambers of Commerce, and to the Press, in order that these discoveries, of which I have learnt with great satisfaction, and which I trust will materially increase the prosperity of the Island, may become generally known to the public and may in particular be brought to the notice of business men.

A copy of the printed correspondence will also be sent to the Admiralty, and the attention of the Lords Commissioners will be invited to the remarks contained in your despatch‡ of the 3rd of January, respecting the possible use of Newfoundland coal by the Royal Navy.

I have, &c.
J. CHAMBERLAIN.

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* Nos. 1, 3, 4, 5, 7, and 9. † Nos. 6, 10, and 12. ‡ No. 4.

No. 14.

SIR H. MURRAY to MR. CHAMBERLAIN.
(Received July 3, 1896.)

Government House, St. John's,
SIR, June 17, 1896.

I HAVE the honour to enclose to you herewith six copies of the speech with which I opened the Fifth Session of the Seventeenth General Assembly of this Colony on the 11th instant.

I have, &c.
H. MURRAY,
Governor.

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Enclosure in No. 14.

OPENING OF THE LEGISLATURE.

Legislative Council, June 11, 1896.

His Excellency the Governor Sir Herbert Harley Murray, K.C.B., opened the Fifth Session of the Seventeenth General Assembly on Thursday, 11th instant, at 2 o'clock, p.m., with the following

SPEECH:

Mr. President and Honourable Gentlemen of the Legislative Council:

Mr. Speaker and Gentlemen of the Honourable House of Assembly:

In addressing you for the first time as the representative of our Most Gracious Sovereign the Queen, I desire to express the gratification I feel in being associated with you for the promotion of the prosperity and advancement of this Colony.

In reviewing the events of the year that has nearly elapsed since the close of your last session, I would first call your attention to the satisfactory condition of our financial affairs.

The policy of retrenchment in the public expenditure, which was adopted by the Legislature last year, has been faithfully carried out by my Government, and, I am pleased to observe, without in any way affecting the efficiency of the Public Service.

The honest and conscientious fulfilment of this trust has resulted in the restoration of the credit of the Colony abroad, and in increased thrift and enterprise on the part of the people of this Colony.

The interest due to holders of our Colonial Bonds has been and will be promptly met, and after all obligations in connexion with the Public Service for the present quarter have been provided for, there will be a considerable balance to the credit of the Treasury. The change that has taken place in the condition of

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the Colony within the past twelve months, and after one of the most severe financial disasters that ever fell upon any community shows that its recuperative powers are phenomenal. I most heartily congratulate you upon this aspect of affairs which, I consider, justifies our taking a hopeful view of the economic condition of the Island.

The success that attended the prosecution of the fisheries last year, although to some extent limited by reason of low prices, was an important factor in removing the commercial depression. Had the seal fishery of the past spring been an average one, no doubt the revival in trade would have been still more marked.

The shortage in the catch of codfish this season by foreign competitors has already had the effect of improving the markets for our staple, and the prospect thus afforded of better markets next year has encouraged suppliers to make large advances for the approaching fishing season.

The progress made by the railway contractor last year on the work of the western extension was entirely satisfactory. Seventy miles of railway were completed. It is probable that by the end of the present year the line will be built to Port-aux-Basques, which is the southern terminus. We cannot fail to recognise the importance of the railway system of the Colony, and the great and beneficent influence it is likely to exert upon the development of our material wealth.

It affords me pleasure to observe that the mining industry of this country is attracting the increased attention of foreign capitalists. The deposit of iron ore on Bell Island in Conception Bay is pronounced to be practically inexhaustible. A large amount of foreign capital has been invested in this property and a considerable amount of employment may therefore be anticipated in connexion with the working of the mine. I am informed that other mineral deposits will be developed during the present year.

My Government expected to have been in a position to invite the Legislature to ratify an agreement for the working of the coal area near Grand Lake, but the action of the Newfoundland Railway Company in placing an injunction upon the disposition of the property may possibly retard the completion of the negotiations. The claim set up by the Newfoundland Railway Company is now before the Supreme Court, and it is to be earnestly hoped that there will be an early settlement of the question at issue.

Mr. Speaker and Gentlemen of the Honourable House of Assembly:

The Receiver-General estimates the total receipts for the fiscal year which will end on the 30th June 1896, at $1,550,000, and the total expenditure at $1,350,000, in which sum is included the interest on the Public Debt. This would leave a surplus for the entire year of about $200,000. The public accounts and estimates will be submitted to you at an early date, and I am confident you will make needful provision for the public service.

Mr. President and Honourable Gentlemen of the Legislative Council:

Mr. Speaker and Gentlemen of the Honourable House of Assembly:

My Government, appreciating that the mining and agricultural interests of the Colony demand just recognition and liberal encouragement, will recommend an enlargement of the free list.

You will be invited to make an increased vote for educational purposes so as to supplement the teachers' salaries, and also an allocation for the repair of roads and bridges.

In now leaving you to your deliberations I commend to your wise care and thoughtful attention the needs, the welfare, and the aspirations of the people whom you have the honour to represent, and I trust that Providence may direct your counsels to the furtherance of those ends.

HERBERT HARLEY MURRAY,
Governor.

## COLONIAL REPORTS.

The following, among other, Reports relating to Her Majesty's Colonial Possessions have been issued, and may be obtained for a few pence from the sources indicated on the title page :—

### ANNUAL.

| No. | Colony. | Year. |
|---|---|---|
| 138 | Bermuda | 1894 |
| 139 | Bahamas | ,, |
| 140 | Barbados | ,, |
| 141 | Turks and Caicos Islands | ,, |
| 142 | Malta | ,, |
| 143 | Gambia | ,, |
| 144 | Leeward Islands | ,, |
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| 146 | Gibraltar | ,, |
| 147 | Falkland Islands | ,, |
| 148 | Hong Kong | ,, |
| 149 | Straits Settlements | ,, |
| 150 | Lagos | ,, |
| 151 | Seychelles | ,, |
| 152 | Basutoland | 1894–5 |
| 153 | Fiji | 1894 |
| 154 | St. Helena | ,, |
| 155 | Ceylon | ,, |
| 156 | Mauritius | ,, |
| 157 | Labuan | ,, |
| 158 | Gold Coast | ,, |
| 159 | British Guiana | ,, |
| 160 | Sierra Leone | ,, |
| 161 | Jamaica | ,, |
| 162 | British Honduras | ,, |
| 163 | British Bechuanaland | 1894–5 |
| 164 | Newfoundland | 1894 |
| 165 | Gambia | 1895 |
| 166 | Bermuda | ,, |
| 167 | Leeward Islands | 1894 |
| 168 | British New Guinea | 1894–5 |
| 169 | Zululand | 1895 |
| 170 | Sierra Leone | ,, |
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### MISCELLANEOUS.

| No. | Colony. | Subject. |
|---|---|---|
| 1 | Gold Coast | Economic Agriculture. |
| 2 | Zululand | Forests. |
| 3 | Sierra Leone | Geology and Botany. |
| 4 | Canada | Emigration. |
| 5 | Bahamas | Sisal Industry. |
| 6 | Hong Kong | Bubonic Plague. |

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