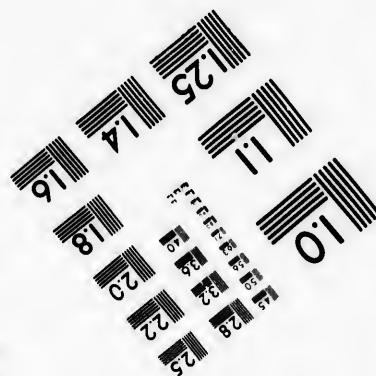
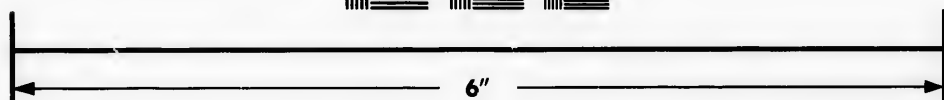
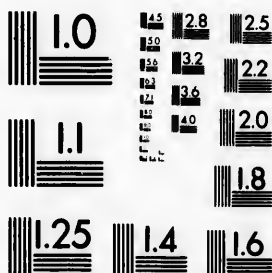


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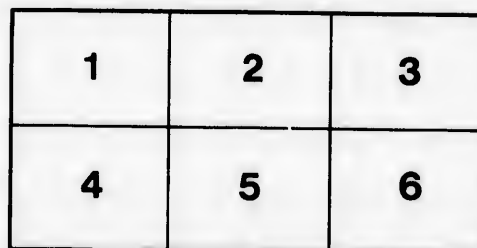
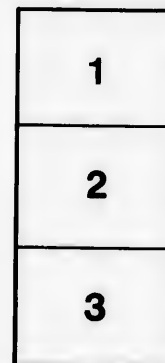
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AND THE

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ITS RELATION TO THE SHIPPING, TO THE FISHERIES,
AND TO THE SIGNAL SERVICE.

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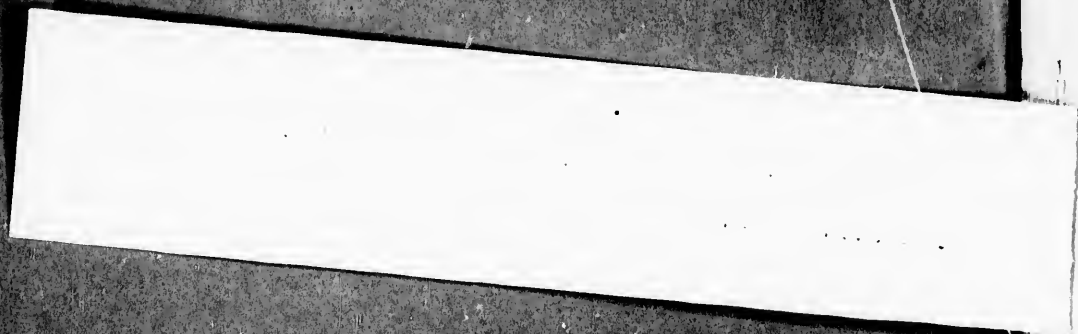
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REPORT
OF
A Select Committee appointed by the House of Commons of Canada
IN 1876.

THE SELECT COMMITTEE appointed to enquire into the possibility of establishing a Submarine Telegraphic System, and into the advantages and necessity of such a System of Telegraphy in the waters of the River and Gulf of St Lawrence, and the waters forming the approaches to the Gulf, beg leave to report as follows :—

Your Committee have obtained the evidence of several witnesses, and after mature deliberation are prepared to recommend that with a view of meeting the requirements of trade and navigation and with the view of ensuring to the River and Gulf of St. Lawrence and Atlantic coast that degree of security required for the protection of life and property, it is necessary to establish a comprehensive scheme of marine telegraphy connecting the islands of the Gulf and remote points of the mainland with the telegraphic system of the Dominion. That a powerful steamer be located at some central point, such as Gaspé, in connection with such telegraphic system. That semaphores be erected in connection with lighthouses at all important points. That lighthouses at all important points be in direct communication with telegraph lines, and that keepers of such lighthouses be capable of acting as telegraph operators.

Your Committee do not expect that the whole scheme can be carried out in one or two years in its entirety, but the necessity of such a system is so strongly felt that they would recommend the following detailed suggestions to the careful consideration of the Government. These suggestions are divided into three divisions, placing them in the order of their importance, as follows :—

I.

A cable to connect the Island of Anticosti with the North Shore of the St. Lawrence, if possible, being a distance of about twenty-four miles, at an estimated cost of about \$1,500 per mile laid down ; equal to	\$ 36,000
With a land telegraph from Murray Bay to Mingan, being a distance of about 385 miles, at an estimated cost of \$110 per mile for the first seventy-five miles, and \$300 per mile for the remaining 330 miles ; equal to	101,250

Being a total of land line and cable of.....\$ 137,250

33.247

In case a cable could not be laid by the north, we would recommend that a cable be laid between the south side of the Island of Anticosti and the coast of Gaspé, a distance of about thirty-eight miles, at an estimated cost of \$1,500 per mile laid down; equal to.....	\$ 57,000
With a land line from Murray Bay to Moisie, a distance of about 285 miles, at an estimated cost of \$110 per mile for the first seventy-five miles, and \$300 per mile for the remaining 210 miles; equal to.....	71,250

Being a total for cable and land line.....\$ 128,250

Leaving the interval between Moisie and Mingan, and the coast eastward, to be completed with the third division.

II.

A cable from the Magdalen Islands to Cape Breton, probably at St. Lawrence Bay, a distance of about forty-eight miles, at an estimated cost of \$1,500 per mile; equal to.....	\$ 72,000
With a land line from St. Lawrence Bay to Beddeck, Cape Breton, a distance of about seventy-five miles, at an estimated cost of \$100 per mile; equal to.....	7,500
A land line from Escuminac Point to Chatham, a distance of about twenty-five miles, at an estimated cost of \$100 per mile; equal to.....	2,500
A land line from Miscou Point to Shippegan, a distance of twenty-five miles, at an estimated cost of about \$100 per mile; equal to.....	2,500
The two last lines being on the coast of New Brunswick.	
A land line on Prince Edward Island, from North Point to the nearest telegraph station, a distance of about ten miles, at an estimated cost of \$100 per mile; equal to.....	1,000
Also, a land line on the same Island, from East Point to the nearest telegraph station, a distance of about eight miles, at an estimated cost of \$100 per mile; equal to.....	800
A land line from Matane to Fox River, a distance of about 165 miles, at \$110 per mile; equal to.....	18,500
Total	<u>\$ 104,800</u>

III.

A cable from Bird Rocks to Magdalen Islands, a distance of about sixteen miles, at an estimated cost of \$1,500 per mile, laid down; equal to.....	\$ 24,000
--	-----------

A cable from St. Paul's Island to Cape Breton, probably St. Lawrence Bay, a distance of about sixteen miles, at an estimated cost of \$1,500 per mile laid down; equal to.....	\$ 24,000
A land line on the Island of Anticosti, along the east side from West Point, round by East Cape to Fox Bay, a distance of about 145 miles, at an estimated cost of \$300 per mile; equal to.....	43,500
A land line on the Magdalen Islands, a distance of about thirty-eight miles, at an estimated cost of \$180 per mile; equal to	6,840
A land line on the north shore of the St. Lawrence, from Moisie to Mingan, a distance of about 100 miles, at an estimated cost of \$300 per mile; equal to.....	30,000
Total	<u>\$ 128,340</u>

The above shows that the cost of the whole system will be :—

1st Division	\$137,250
2nd Division	104,800
3rd Division	<u>128,340</u>
Amounting in the whole.....	<u>\$ 370,390</u>

The Committee would recommend that when surveys are made for a telegraph line on the north shore of the St. Lawrence, the coast be examined from Mingan east, with a view of ascertaining how far the line should extend.

Your Committee cannot too forcibly impress upon your Honorable House the necessity of this work. The evidence taken shows that an annual saving, equivalent to the whole cost of the work, will be accomplished by the establishment of this important service, while the interests of humanity call loudly for its completion as a protection to and a means of saving life.

The evidence taken before the Committee accompanies this report, and we beg to refer your Honorable House to it for further detailed information relative to this project.

All of which is respectfully submitted.

THEODORE ROBITAILLE,
Chairman.

THE MINUTES OF EVIDENCE AND STATEMENTS.

EXTRACTS.

MEMORANDUM for the Committee of the House of Commons on *Telegraphic Communication with the Lower St. Lawrence*, by Mr. William Smith, Deputy Minister of Marine and Fisheries.

The undersigned, in compliance with the request of this Committee that he would give them his opinion on the advisability of establishing a system of telegraphic communication between the Island of Anticosti, the Magdalen Islands and the mainland of the Province of Quebec, begs leave to submit the following statement on the subject:—

Before doing so, however, he takes this opportunity of informing the Committee that he has no authority to speak on behalf of the Government on this question, and that the following remarks relative thereto contain his own opinion only on the subject, and not those of his department.

The undersigned is of opinion that it would be highly desirable, in the interests of trade and navigation, that telegraph communication should be extended from the mainland to Anticosti, on which Island so many vessels have been wrecked, some of them having valuable cargoes on board. As there is, at present, no regular steam communication between that Island and the mainland, in the case of a vessel being wrecked, great delay generally ensues before intelligence of the wreck reaches the mainland or the owners or agents of the vessel; and in the case of wrecks taking place late in the fall of the year, either on Anticosti, the north shore of the Gulf, or the Magdalen Islands, intelligence might not reach Quebec till the following spring, when the vessel and cargo might probably have disappeared.....

The undersigned is also of opinion that in the event of telegraphic communication being established between the mainland and Anticosti and the Magdalen Islands, and between the north shore of the Gulf of St. Lawrence and Quebec, it would be very desirable that a Government steamer should be stationed at Gaspé Harbor, which is a very central place for the purpose of affording relief to shipwrecked vessels and crews in the Gulf.....

SUMMARY OF VESSELS WRECKED AND CASUALTIES FROM 1869 TO 1875.

	Vessels Lost.	Tonnage.	Lives Lost.	Value.
From Green Island to Gaspé Bay.....	39	23,061	None.	\$ 814,252
From Saguenay River to Seven Islands.....	21	8,392	45	143,600
Anticosti Island.	23	14,369	5	188,400
Magdalen Islands.....	61	11,777	48	387,550
	144	57,599	98	\$1,533,902

WM. SMITH,

Deputy Minister of Marine & Fisheries.

DEPARTMENT OF MARINE AND FISHERIES,
Ottawa, 4th April, 1876.

STATEMENT BY W. F. WHITCHER, ESQ., COMMISSIONER OF FISHERIES.

The ensuing observations are made without regard to the desirability or feasibility of establishing telegraphic communications between the south-easterly mainland and the Islands and northern mainland in the River and Gulf of St. Lawrence, for purposes of commerce and navigation. They relate exclusively to the important interests of the Fisheries.

Observations, extending over a series of years, and connected with the development of our vast maritime resources, have given prominence to the necessity of connecting the outlying fishing districts with some central means of prompt intelligence between markets and places of production.

This is the general aspect of the question. It presents, besides, other features, more or less of a special character, but subordinate to the larger desideratum of developing the wealth of our ocean boundaries. In this development are mainly included:—

1st. Increased production for foreign commerce and domestic supply, thus enhancing both directly and indirectly the country's prosperity, by promoting the productive and ship-building industries, stimulating trade, and augmenting the food supply, which cheapens living, and attracts population, labor and capital to the country.

2nd. Settlement of both the coasts on which fishing alone is practicable, and where agriculture and fishing combined afford employment and sustenance to the inhabitants.

3rd. Training for sea-faring life, and giving confidence and cohesion to a scattered and isolated population, who, from their precarious pursuits and uncertain and exposed situation, are indifferent towards, and necessarily ignorant of, those passing events which tend to nourish an intelligent national sentiment, and an independent spirit of loyalty to the country and its institutions, with which they at present maintain a mere material instead of a moral or political connection.

The area more immediately affected by the proposed system is about 27,600 square miles, comprising extensive and prolific fishing grounds. Within this area a very large amount of domestic and foreign capital is employed—probably exceeding in value eight millions of dollars. About twelve millions of dollars worth of the products of the sea are annually derived from this area by Canadians and foreigners. It supports between eighty and one hundred and twenty thousand of our native population.

These figures may serve to suggest how great is the field, and how rich its resources for industrial development.

They may also suggest how essential to the progress of the country is any scheme calculated to afford encouragement or security to capitalists and laborers engaged in developing a national property of such an intrinsic value. The pursuit of an industry such as that of fishing within these extensive limits, is necessarily attended by many dangerous and peculiar drawbacks.

Exposure of life and property is frequent. Success depends very much on the seasons. Many kinds of fish of erratic habits are eccentric in their movements. Plenty and scarcity may alternate in places from which the settlers depending wholly on any fishery have no escape. Within twenty miles of settlement on a barren and uninhabited coast, the fish may strike and remain without any possibility of their whereabouts being known. At other places they may be abundant beyond the capacity of shoremen or vessels to catch them, and yet fishermen not far distant be unable to procure even sufficient for their winter supply. Vessels may return empty in one season from fishing grounds where previously or afterwards the fish abound. Some may lose the greater and best part of each season in searching after the shoals. Still the waters teem with fish, and sooner or later they approach the shores or frequent the shallows. It seems possible for the spirit of modern improvement to devise some means of providing against these vicissitudes. That plan which strikes me as the most feasible is a telegraphic system connecting together the main points in this area. The idea of signal stations from which to observe and notify movements of fish has been carried out to some extent in Norway, Holland, Germany, Sicily, and on the coast of Cornwall. It has proved of material assistance to the fishermen, and aided considerably in developing the fisheries of each of those countries. There is no doubt it would prove advantageous to Canadian fishermen, and others of the coast population who combine fishing with agriculture. Besides affording greater inducement and security to employers of capital, and inspiring confidence in those exposed to danger and hardships, it would undoubtedly enable us to increase production and enlarge our exports. These results would tend to augment the local population, both by prospects of greater gain, and by reliance on the certainty of relief in cases of disasters from tempest, or privations from failure

(Signed,)

W. F. WHITCHER,
Commissioner of Fisheries.

OTTAWA, March 21st, 1876.

SIR,—Being requested by your Honorable Committee, at an interview on the 17th instant, to give a statement of my opinions on the most desirable and practicable system of establishing telegraphic communication with the more important points on the River and Gulf of St. Lawrence, and also the opportunities I have had of forming a judgment on the subject.

I beg leave to state, that since entering upon my duties as General Superintendent of the Lighthouses of the Dominion, I have frequently visited the lighthouses, and establishments for the relief of distressed mariners on the islands and main shores of the St. Lawrence, and am now familiar with each establishment, and also with the difficulties to be overcome, and the loss of time that generally takes place in sending for assistance when disasters occur at a distance from telegraph stations.

I believe I may safely say that instances when assistance arrived in time to be of any great service are rare, and that this would not be the case if it could be dispatched within a few hours of the time of a vessel getting into difficulty.

Hence the necessity for telegraph stations along the coast and on islands where the majority of disasters occur.

It is very important that steps should be taken to establish telegraphic communication with the south side of the Island of Anticosti.

.....
I have the honor to be, Sir,

Your obedient Servant,

(Signed.)

J. TOMLINSON,

Gen. Supt. of Lighthouses.

Hon. Dr. ROBITAILLE, M.P.,

Chairman of the Select Committee
on Submarine Telegraph System
in the St. Lawrence.

J. U. GREGORY, Esq., Agent, Department Marine and Fisheries, Quebec, made the following statement :

I look upon the establishment of a telegraphic system, connecting the islands of the Gulf of St. Lawrence with the mainland, and also connecting with telegraph wires on the north and south shores of the River St. Lawrence, as of vital importance to the shipping interests of Canada. A steamer, if stationed at Gaspé, would render eminent service in saving life and property when being near at hand to any wrecks that might occur, and in a neighborhood in which it would be in communication.

From my own personal knowledge, and from information I have gathered from experienced navigators having a good knowledge of the north shore, there appears to be no difficulty in building a telegraph line from Quebec to Point des Monts, and lower, with the exception of the district in the neighborhood of the Godbout River, which becomes a matter of maintenance.

I believe many vessels wrecked, and among others the "Shandon," wrecked on Anticosti, could have been saved had it been possible to get a powerful tug-steamer within twenty-four hours; and if this system of telegraphic communication had been in practice, a steamer stationed at Gaspé, could, in the case of the "Shandon," have rendered assistance within ten or twelve hours. The news of the wreck of the "Shandon" could not have reached Quebec before the communication could be crossed over in a sailing vessel to Gaspé, and the time occupied in this would be according to the weather and wind, and to the fact that a sailing vessel would be there to convey the news. I believe the news was only reported at Quebec in nineteen days.....

In many instances, like the "Royal Charter," at Fox Bay, Anticosti, and the "Doctor Juris Judson," Norwegian vessel near Caribou Islands, north shore, both vessels with valuable cargoes of wines and liquors, the saving to the revenue of the country would be very great, from the amount of duties collectible on these cargoes.

Hon. GEORGE HOWLAN, Senator, Prince Edward Island, ship-builder and ship-owner, gave evidence as follows :—

I carry on an extensive fishing business in the Gulf of St. Lawrence. I am of opinion that the telegraphic system proposed for the Gulf is one that will commend itself to all. It would be the means of reducing the rates of insurance fully one-half. As matters now stand in England and in the Dominion, ships bound for the ports within the Gulf or up the River St. Lawrence, have to pay two rates—one for outside the Gulf, the other for inside ; and there are many companies that will not take a risk at all for the Gulf after the 1st November.....

Last year a vessel of 460 tons went ashore at North Cape, and if a system of telegraphy had been in operation, and by this means immediate assistance obtained, she would not have become, as she did, a total wreck. Similar cases are occurring all the time, and it is highly important that something should be done to lessen the loss of life and property.....

A. J. YEO, Esq., M.P., Prince Edward Island :

I am of opinion that there should be an extension of the telegraphic system to the North Point and East Point of Prince Edward Island, and also to the Magdalen Group, Bird Rocks, &c. This I consider of great importance. About three years ago a barque loaded with deals and oats, 400 tons, sailed from Richmond Bay, Prince Edward Island, for Bristol, England. She went ashore on Magdalen Islands in November. Six men were lost ; there were five men saved ; they had to remain all winter on the Island. The vessel remained nearly all winter on the ground ; she had touched, and only became a total wreck some time after she touched.

The distance between Richmond Bay and the Magdalen Islands is about seventy miles, and a straight line between Prince Edward Island and Magdalen Islands about forty-five miles. Had there been a telegraphic communication between Magdalen Islands and Prince Edward Island, there is no doubt that we could have sent a steamer to the rescue of the barque, and she could have been saved.

At North Cape, Prince Edward Island, a large ship came ashore last summer twelve months. Had there been telegraphic communication she could have been saved, but the consequences were she was a total loss. A cable from St. Paul's Island to the mainland I consider very necessary.

HOUSE OF COMMONS,
March 23rd, 1876.

DEAR SIR,—As requested, I now submit, though very briefly, for the consideration of the Committee, my opinion in reference to the establishment of submarine telegraphic communication with the Magdalen Islands.

That the establishment of such communication between these Islands and the residue of the Dominion would be of mutual benefit, I think admits of no doubt whatever. Codfish, mackerel and herring

frequently strike in at these shores in great plenty for short periods, sometimes continuing no longer than a week. The run is generally over before its existence becomes known to the fishermen on the mainland. With telegraphic communication the fishermen of Quebec, Nova Scotia, New Brunswick and Prince Edward Island would know when fish had struck in, and could at once proceed on and be very likely to secure a part of them. This telegraphic communication would also prove of very great benefit to the shipping interest; for, besides the vessels owned in the Islands, and there are several, a large number resort there during the fishing season, and many of these frequently get on shore and otherwise disabled. I think it was in the gale of August, 1873, that over forty vessels were driven on shore in Amherst Harbor alone. Some of these were American vessels, others of them belonged to different parts of the Dominion. The owners in most cases had to be communicated with, but for want of the telegraph two to three weeks elapsed before this could be done and assistance or instructions received by those in charge.

Any one having any knowledge at all of the fishing, shipping and general business of the Magdalen Islands, and which are growing in extent and importance every year, will, I feel sure, admit the great desirability of the proposed telegraphic communication.

As I have already said, it would prove of great benefit to the fishing and trading interests outside the Islands, and of paramount advantage and convenience to the inhabitants, and would, most certainly, be highly appreciated by them.

Yours, &c.

(Signed,)

P. POWER,

M.P., for Halifax.

Hon. T. ROBITAILLE.

Chairman, Submarine Telegraph Committee.

Hon. WILLIAM MUIRHEAD, of Chatham, Miramichi, Senator, Saw-mill Owner and Ship-builder, gave evidence as follows:

I load and ship from forty-five to fifty-five ships yearly with lumber from Chatham, N.B., to different ports in Europe; I consider the establishment of a telegraphic system in the lower part of the River and Gulf of St. Lawrence of great importance to trade, and a valuable medium in the saving of life and property. Connection with St. Paul's Island, a very dangerous place, and right in the course of navigation, will prove of immense benefit to shipping.....

A vessel of mine went aground on the Horse Shoe, Miramichi, sprung a leak, and was afterwards wrecked on Langley Island; had there been any means of communication between the Magdalen Island group and the mainland, the captain could have stopped at one of these islands for orders; could have telegraphed me their position, and I could have sent him immediate assistance, and thus saved my vessel; the vessel was worth \$55,000. I know of many vessels that have got ashore on the Magdalen Islands in the last ten years that could easily have been saved if timely assistance could have been obtained; under present circumstances it requires about a fortnight

for information to be conveyed from the Magdalen Islands to Miramichi, and much damage in that time may be done to the vessel, much property and many lives lost; with the proposed system perfected communication will be so prompt that vessels wrecked in the Gulf will receive almost-immediate assistance; the erection of semaphores with our lighthouses will prove very useful.....

I am of opinion that in connection with this system the steamer should be stationed at Gaspé that is now used in connection with our lighthouses, called "Napoleon," as that port is about the centre of the system, and immediate assistance would almost be obtained at any time from there.

The rates of insurance, if this system was carried out, would be much lower than they now are, as navigation would be rendered safer and more satisfactory.

Mr. TREMAINE, M.P., Victoria, of Beddeck, gave evidence as follows :—A telegraphic system connecting the various islands of the River and Gulf of St. Lawrence with the mainland will be of great advantage to navigation, especially in connection with a steamer placed at some central point. He states that eight vessels were lost on St. Paul's Island, between the years 1870 and 1875.....

D. A. SMITH, M.P., Selkirk, called and examined :

I consider the establishment of telegraphic communication between the Islands of the Gulf of St. Lawrence and the mainland of the greatest importance to the trade, as well as to the fishing and shipping interests of our country.....

(Signed,) DON. A. SMITH.

Report of Hon. D. E. Price, Senator, (written at the request of the Select Committee on Submarine Telegraphs.)

Telegraphic communication along the coast of both the north and south shores of the River St. Lawrence, and cable connection with all the islands of importance in the Gulf of the St. Lawrence, has now become one of the great questions of the day, in the interest of the Dominion,—if the River St. Lawrence is to be the great water communication from and to the West?.....

The advantages of telegraphic communication along the North Shore and the Island of Anticosti, among many others, would be :—

1st. That in case of shipwreck, relief can be sent within a very short time, and not only could valuable vessels, cargo and property be saved, but perhaps many lives, if the disaster should take place late in the fall of the year. The calm weather that always follows gales that are the cause of these wrecks, are often of a week's duration, during which time many a vessel and her cargo could be saved by aid of a steamer.

3rd. The fishing interests of the Gulf are largely on the north shore of the St. Lawrence and on the south side of the Island of Anticosti, and if telegraphic communication existed, the trade could be

more than doubled with the same fleet, those receiving timely need where to find the fish as they strike the shore in immense shoals at different time and places.....

It is a national undertaking, and should be carried out by the Government of the Dominion with as little delay as possible.

Humbly submitted,

(Signed,)

DAVID E. PRICE,

Senator.

SENATE, OTTAWA, 4th April, 1876.

Number of vessels stranded or wrecked in the Gulf and Lower St. Lawrence below Bic, in 1875, 36.

Hon. Mr. THIBAUDEAU, M.P., for Quebec, called and examined :—

I have no hesitation in saying that a liberal telegraphic system in the Gulf and River St. Lawrence, placing the various islands in the Gulf in connection with the mainland, and placing a steamer in the centre of the system, say Gaspé, will make navigation much safer, and reduce the rates of insurance. It would be the means of saving many wrecked ships, and much property, and would diminish in many cases the suffering of the crews.

OTTAWA, March 23rd, 1876.

SIR,—The advantages which will be secured to the Dominion by the inauguration of marine telegraphy, as suggested by the Hon. P. Fortin, cannot be too highly appreciated. From an experience extending over a term of 25 years in the surveying and raising of vessels wrecked in the Gulf and River St. Lawrence, I am able to state that the greater number of vessels totally wrecked in these waters, would have been taken off, had there been means of securing immediate assistance by telegraph.

I have the honor to be, Sir,

Your obedient Servant,

(Signed,)

E. W. SEWELL,

Member of the Harbor Commission of Quebec.

To the CHAIRMAN,

Committee on Submarine Telegraph.

Answers of Narcisse Rosa, Esq., Shipbuilder, to the Questions put to him by the Committee on the Improvement of the Navigation of the River St. Lawrence.

2. An extension of the telegraphic system would have the effect of reducing the rates of insurance, with the advantage of saving ships in distress as well as life and property.....

4. With this system perfected, and one or two Government vessels stationed at Gaspé with instructions to afford help on the first signal, many ships, with their cargoes, and, what is still more important, the lives of their crews, would be saved.

5. The best counsel I can offer to your Committee is to urge you to put forth your utmost efforts for the improvement of the navigation of the St. Lawrence.

This would secure the prosperity of Canada for the three reasons following, namely :—

First.—Our Gulf of St. Lawrence is the terror of many foreign seamen, who are unwilling to come to our waters, because, as they assert, there are not signals enough on our Islands, nor even on the mainland, to render navigation safe; and the result is that the total loss of vessels and their crews is too frequent to justify them in risking the navigation.

I myself found, in my voyages to France and Italy, that many captains refused to come to Canada, because of the insufficiency of lights, &c., &c., in the Gulf of St. Lawrence, and because the Insurance Companies demanded increased rates of premium.

Second.—This would have the effect of largely increasing the resort of foreign ships to our ports, from which everyone would derive great benefit.

Third.—It would have the effect of diminishing the rates of insurance. Here is an instance showing that Insurance Companies are greatly influenced by improvements: A vessel is ready to sail from Québec in the fall, when the rates of insurance advance. You engage a steamer to tow your vessel to Bic, and you ask the assurers to give you a remission of premium. The result usually is that they return you one-half, and in some instances even the whole of what you have paid for your steamer, as I myself had it returned to me on different occasions.....

6. In answer to this last question, I can state that, if there had been a telegraph line on the South Shore, in 1870, I should have saved one of my vessels, the "Eleonora," with her cargo. The captain was forced to let go anchor off Fox River, and he sent ashore in order to telegraph to me and ask for the assistance of a steamboat, for without it he would suffer total loss. I only received this despatch three days after its date. Negotiating with J. U. Gregory to secure the "Napoleon 3rd," sending her off and reaching the place where the vessel lay in distress, required the loss of three days more, which made up a total delay of six days. Unfortunately, two days before our arrival, the vessel was exposed to a tempest which caused her total loss, together with that of the cargo, for it was condemned to be sold on account of those concerned.

Now, if a telegraph office had been established at Fox River, I should have received my despatch one hour or two after the boat reached the land, and I should have had time to save my vessel before this tempest, which raged for two days previous to our arrival at the place of disaster, whereas we had taken six days.....

Likewise, semaphores must not be forgotten, for, gentlemen, semaphores are of the greatest use to the sailor. I have had occasion in my

travels to appreciate the value of a semaphore. On two different occasions, I found myself in a position on the coast of France, when, but for the semaphores which are placed all along the coast, we should have been lost body and baggage.

It is only when one has seen danger face to face, that one can appreciate at its just value the apparatus which has caused us to avoid a disaster.

The whole humbly submitted to your Committee.

(Signed.)

N. ROSA.

QUEBEC, 29th March, 1876.

QUEBEC, 30th March, 1876.

SIR,—In answer to your various questions with reference to the establishment of a submarine telegraph system in the Gulf of the St. Lawrence, I beg to state :—

1st. That the building of lighthouses, placing of guns and fog-whistles in the lower part of the River St. Lawrence, has very materially lowered the rate of insurance.

In 1856 I paid ten guineas per cent., on the hull of my new ship "Scotia," valued at £10,000 sterling, for the voyage from Quebec to Liverpool. A like risk can now be covered at £6 per cent.....

4th. I am of opinion that the present "rates" of insurance would be reduced "ten" per cent., if all the proposed telegraphic system were carried out; a steamer placed at Gaspé, to assist vessels when in distress; a fog-whistle placed in connection with the lighthouse on Egg Island, and the light-ship at Manicouagan Shoals be a steamer capable of assisting vessels off the shoals in case of grounding there, and being a steamer she could remain later in the fall in her place.

5th. If my suggestions in No. 4 are carried out, I think little further is needed to make the navigation of the St. Lawrence safe.

6th. If my suggestions, as stated in No. 4, had been carried out some years past, I am of opinion a great many vessels and their cargoes would have been saved. I name the following which could have been saved :

The iron ship "Glenallan," at Cariboo; iron steamship "Edith Emily," at Point du Monts; ship "Bethia Jewett," in Moisie Bay; brigantine "Wasp," on Manicouagan Shoals; steamship "Delta," at Cape Chatte; N. Rosa & Co.'s new ship at Fox River, that lay at anchor several days waiting for the steamer from Quebec; new ship "Fleetwing," near Fox River; ship "Royal Charter," at Fox Bay, at Anticosti, loaded with a general cargo of champagne and other valuable merchandise; ship "Giant's Causeway," on Anticosti.....

I am, Sir,

Your obedient Servant,

(Signed.)

HENRY DINNING,
Shipbuilder and Shipowner.

THEODORE ROBITAILLE, Esq.,
Chairman.

QUEBEC, 31st March, 1876.

DEAR SIR,—Your favor to hand, and though I am not able to answer all the six questions in as full a manner as I should wish, yet I will do what I can. Knowing the urgent need there is for telegraphic communication in the Gulf of the St. Lawrence—having been on the coast during the latter end of November and the month of December, 1868, and the greater part of January, 1869—I was sent down by Government to take charge of a couple of crews of shipwrecked sailors.....

2. The placing of telegraphic lines to a certain point on the north and south shores has had the very decided effect of saving valuable lives and property, especially in the fall of the year, when navigation is so uncertain.....

I might add, in conclusion, that I consider it a disgrace to any civilized country having such a long line of coast, at the entrance of a river so largely used by shipping, left without means of telegraphic communication and appliances necessary for rendering aid to shipwrecked vessels.

Hoping that my mite may help the construction of a telegraphic system,

I have the honor to be, dear Sir,

Your obedient Servant,

(Signed,)

C. S. PARKE, M.D.

THEODORE ROBITAILLE, Esq.,
Chairman, Select Committee.

THÉOPHILE GIROUARD, Lumber Merchant and Manufacturer,
called and examined :

Telegraphic communication between the different islands of the Gulf and River St. Lawrence and the mainland, would be of great advantage to trade in general, and a system of that kind in connection with the presence of a steamer to render assistance to wrecked vessels would render the navigation of those waters much safer by diminishing the loss of life and property.

Last fall, in October, the barque "Argo" went ashore on the sandbank at Betsiamits. There being no telegraphic communication from that point to Murray Bay, the captain of the barque had to send a schooner across the St. Lawrence to the south shore at Rimouski, 45 miles, to send a telegram to Quebec for assistance. Three days elapsed from the time the "Argo" went aground until the news reached Quebec; two or three days more before a steamer reached her, and thus it was a week before the barque received any assistance. When the steamer arrived it was low tide, and she had to wait another week before the barque could be got afloat. In the meantime strong easterly winds prevailed, and damaged the barque to the extent of twenty-five thousand dollars, and afterwards the loss of having to winter in Quebec.....

SIMON XAVIER CIMON, Contractor, Murray Bay, Charlevoix, called and examined:

A telegraphic system connecting the islands of the lower part of the River and Gulf of St. Lawrence with the mainland, in connection with steamers located at different points, would render navigation of those waters safer for life and property, and would tend to lower the rates of insurance.....

(No. 7.)

QUEBEC, April 4th, 1876.

SIR,—I have received your favor requesting a reply to a number of questions relating to the advantage and necessity of establishing a submarine telegraph system in the Gulf of St. Lawrence, feel truly honored by said request, and have great pleasure in conforming to the same to the best of my ability.

1. They have either been the means of reducing rates or counter-acting other influences tending to arise in the same.

2. In my short experience of only two seasons as Agent for Scandinavian Underwriters at this port, I have substantial reason for believing that to the credit of these lines may be charged the saving of one ship from total loss, and considerable reduction in expenses for other vessels.

3. Presuming all other items having effect upon insurance rates to remain unaltered, it would undoubtedly in course of time have the effect of reducing such rates to a considerable extent.

4. It is impossible to name a figure, but, without doubt the reduction would be considerable.

5. Insurance rates being simply the figures arrived at by calculating the percentage of losses during a certain period on the whole amount of business, added to which, such reasonable and legitimate profit as competition will allow, every legitimate underwriter will keep a record of risk and losses in certain boxes, and in certain seasons, and with the assistance of such records and other available authorities and information on the subject, calculate the probable loss, and charge premium accordingly. With the assistance of these lines now under consideration, it is evident that masters of vessels in distress in these localities, in many instances, would have it in their power to call timely assistance, by which means losses in many instances would be reduced. Also, underwriters, or their agents, would, though these lines were without advice from the masters in question, get information in time to step in for the safety of the property. My experience as a sea-faring man, having been about 20 years ship-master, and for the last ten years always connected with maritime insurance, has given me more than sufficient proof that the great value of telegraph and semaphores along the coasts for the prevention or reduction of maritime losses can hardly be over-estimated.

6. As above, my personal experience in connection with disasters in these parts only dates back to the last two seasons, through which I have heard of several instances in which telegraph would have been

of great use in the saving of vessels in distress, or lessening expenses; but I am only in possession of facts respecting the following cases:—

(a.) In the fall of 1874, the "Longus" stranded on the Island of Anticosti, under such circumstances that she would undoubtedly have been saved if the requisite assistance had been near, or the master could instantly have called such assistance from Gaspé. She became a total loss; value probably about \$15,000.

(b.) The "Norge" stranded near Cap Chatte in the early part of last season, might possibly have been saved from a total loss; of which I am, however, doubtful, she being an old and very weak vessel.

(c.) In the case of the "Ottalina," stranded at Cape Bondesir, about the middle of last season, the expenses would probably have been considerably reduced if a telegraph station had been near.

(d.) The same applies as regards the "Argo," stranded last fall near Bersimis. If a telegraph station had been convenient, this vessel would most probably have been got off with the first spring-tide after stranding, and with comparatively small damage and expense, and in time to have had repairs finished before closing of navigation. As it was, she was not got off until next spring tide, every day suffering more or less damage, and in the greatest danger of total destruction. She was eventually got off with an expense of about \$3,500, towed to this port, where she is wintering, and repairing damage estimated at about \$11,000. I am of opinion that the loss sustained by this accident taking into consideration the loss of employment during about six months, cannot be calculated less than \$17,000 to \$18,000, and then the greater part thereof, say \$10,000, is due to want of convenient telegraph communication.

In conclusion, I beg to say that I have felt bound to confine myself to most direct replies, but will not omit to mention that I am of opinion that the construction of the lines, &c., now under consideration, is only a line in the system desirable, without which the Dominion will not reap the full benefits of its exertions to provide means for safe navigation.

I have the honor to be, Sir,

Your obedient Servant,

(Signed.)

W. A. SCHWARTZ,

Consul General to Sweden and Norway.

Hon. THEODORE ROBITAILLE,

Chairman, House of Commons,
Ottawa.

LLOYD'S AGENCY AT QUEBEC.

We find by a list 112 vessels wrecked in the Gulf and Lower St. Lawrence, during the years 1870, '71, '72, '73, '74, and '75, with remarks, extracted from the Journals of the Lloyd's Agency at Quebec, by the kind permission of Messrs. Henry Fry & Co., Lloyd's Agents, that many of these vessels would have been saved had timely assistance been given, and that it took from eight days to six months to report to the Agency at Quebec the wrecks which had taken place on the Magdalen Islands, on the Island of Anticosti and the lower river St. Lawrence.

APPENDIX No. 3.

Memorandum of rates of Insurance (London, England, Offices)
from Quebec to Ports in Great Britain for 1873.

FROM HENRY FRY & CO.

20s. per cent. sailing by 1st August.

25s.	"	"	10th	"	Returning, 4s. 9d. per cent. if no deckload.
30s.	"	"	20th	"	
40s.	"	"	1st September.	"	
50s.	"	"	15th	"	
60s.	"	"	20th	"	Returning, 9s. 6d. per cent. if no deckload.
65s.	"	"	25th	"	
70s.	"	"	1st October.	"	
80s.	"	"	10th	"	
5 gs.	"	"	20th	"	Returning, 20s. per cent. if no deckload.
6 gs.	"	"	1st November.	"	
7 gs.	"	"	after	"	

Memorandum and rates for 1874 and 1875.

WITH DECKLOADS.

20s. per cent. sailing by 1st August.

30s.	"	"	10th	"
40s.	"	"	20th	"
50s.	"	"	1st September.	"
60s.	"	"	10th	"
70s.	"	"	20th	"
80s.	"	"	25th	"
90s.	"	"	1st October.	"
5 gs.	"	"	10th	"
6 gs.	"	"	20th	"
7 gs.	"	"	1st November.	"
8 gs.	"	"	after	"

Memorandum of rates of Insurance (Quebec offices) from Quebec
to Ports in Great Britain.

June, July and August.....	1½ to 1½	per cent. with deckload.
August 31st to Sept. 15th.....	1½ to 2½	"
September 15th to 30th.....	2½ to 3½	"
October 1st to 15th.....	3½ to 4½	" no deckload.
October 15th to 31st.....	4½ to 5½	"
November 1st to 10th.....	5½ to 6½	"

After 10th November rates change daily, according to appearance
of weather.

Rates of Insurance for Vessels, Cargoes, &c., &c., from Quebec
Ports in Great Britain.

FROM CARBRAY & ROUTH.

	Per cent.	
May, June, July and August.....	1½ to 2	} On cargoes in sailing ships.
September.. .. .	2½ to 3	
October.....	3½ to 5	
November.....	6 and upwards, sometimes 10	

MONTREAL ASSURANCE OFFICE,
MONTREAL, 27th March, 1876.

SIR,—I beg to acknowledge the receipt of your letter of the 23rd, asking for certain information regarding rates of insurance between Europe and America, and would be very happy to comply with the request of the Committee, could I tabulate anything likely to be of service to them.

But nothing that I could put in the shape of a statement of insurance rates, covering the field you indicate, could possibly be considered reliable, inasmuch as practically the rates are never fixed. They depend on many circumstances which the underwriter has always to take into account in determining a rate for any individual risk, and at this port they vary very much from year to year with the amount of competition existing among the foreign agencies. Ocean marine rates depend on the routes, the season of the year, probabilities of weather, class of vessel, character of owners and masters, nature of cargo, and kind of insurance wanted, whether against all risks or free of average. So that fixed tariffs are an impossibility.

Assuming, however, that your object is to compare rates as between the Gulf of St. Lawrence and the Port of New York, I may say, that generally,—

From Liverpool to Quebec or Montreal, by the early spring fleet, the rates on general merchandise will average by first-class steamers, ¾ to 1 per cent., by iron clippers, 1½ to 1¾ per cent., and by ordinary or wooden ships, 2 to 3 per cent.

To New York, sailing about the same time, the rates would be: steam, ½ per cent., iron sail, 1 to 1¼ per cent., wood, 1½ to 2 per cent.

In midsummer, to Canada, steam, ½ to ¾ per cent., iron sail, 1 to 1¼ per cent., wooden sail, 1½ to 2 per cent. To New York, not much difference; by Cunard steamer rates are very low, ¼ to ¾ per cent.

After 1st September. inward rates begin to rise rapidly on the St. Lawrence route, especially by sail, during that month they are as high as in April, and keep advancing weekly. Sailing from Montreal, after the 25th to 31st October, the high rates by sailing ships begin to tell very severely. The rates about 1st November, on grain, will be by steam, 1½ to 2 per cent., by sail, 3 to 4 per cent.; about 10th November, steam, 2 to 2½ per cent., sail, 5 to 6 per cent., and when we get to the 20th November, steam will be probably 3 per cent. and sail a fancy rate, anything between 6 and 10 per cent., according to appearance of weather.

Quebec

From New York, at similar periods, steam rates will be $\frac{1}{2}$ to $\frac{3}{4}$ per cent., and sail 1 to $1\frac{1}{2}$ per cent.

es in sail-
ships.

Rates to and from Halifax and St. John, N.B., are practically no lower than to Montreal. If the hazard at certain seasons is less, the business is so much smaller that the competition is less also; of course I do not allude here to our specially high rates for November sailing.

It would have afforded me pleasure if I could have given you any fuller information likely to be of use.

I have the honor to be, Sir,

Your most obedient Servant,

(Signed,)

A. MURRAY.

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T. ROBITAILLE, Esq., M.P.,

Chairman, Submarine Telegraph Committee,
Ottawa.

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Distances between Gaspé and the several prominent Ports in the lower part of the River and Gulf of St. Lawrence.

From Gaspé Basin to Quebec.....	380 nautical miles.
do Halifax	398 do
do Cape Chatte.....	140 do
do Point des Monts.....	160 do
do Seven Islands.....	145 do
do West Point, Anticosti.	85 do
do South do	60 do
do East do	115 do
do Bird Rocks.....	125 do
do West Point, Magdalen	
Islands	140 do
do Point Miscon.....	60 do
do Point Escuminac.....	115 do
do North Cape, P. E. I...	113 do
do East Point P. E. I.....	178 do
do St. Paul's Island.....	180 do
do Cape North, C. B.....	180 do
do Sydney	235 do

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It will be seen by the above statement that a steamer stationed at Gaspé Basin, will, when called to go to the assistance of wrecked crews and vessels at the above named prominent places, at the speed of ten knots an hour, reach one-half of them in less than twelve hours and the most distant in twenty-four hours.

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TELEGRAPHY

WITH THE

COASTS AND ISLANDS OF THE

GULF AND LOWER RIVER ST. LAWRENCE

AND

THE COASTS OF THE MARITIME PROVINCES.

— § —

ITS RELATION TO THE SHIPPING, TO THE FISHERIES,
AND TO THE SIGNAL SERVICE.

— § —

In response to an invitation extended him by the Quebec Board of Trade, Hon. Dr. Fortin delivered an interesting lecture yesterday afternoon, 10th December, 1878, at the rooms of the Board, upon his system of telegraphy with the Coasts and Islands of the Gulf and Lower River St. Lawrence, and the Coasts of the Maritime Provinces.

Notwithstanding the disagreeable condition of the weather there was a very large attendance of merchants, shippers, and other prominent citizens, amongst whom we noticed the following :—

Messrs. J. Shehyn, M.P.P., President of the Quebec Board of Trade ; — Langelier, M.P.P. ; A. H. Murphy, M.P.P. ; Dr. Rinfret, M.P.P. ; Hon. P. Garneau, A. Joseph, President of the Dominion Board of Trade ; W. Rae, (Vice-President B. T.) Jas. G. Ross, John Ross, E. L. Montizambert, J. Laird, F. Billingsley, M. Stevenson, A. Woods, W. Schwartz, (Consul for Norway,) J. Lane, jr., F. Johnson, D. Rattray, J. H. Clint, Benson Bennet, Edwin Pope, W. M. McPherson, F. Gourdeau, Alex. Pope, Dr. Marsden, John Auld, H. McBlain, E. Laroche, B. Eppes, A. F. A. Knight, S. Drum, H. Budden, B. Verret, C. J. Robitaille, N. Lemieux, (President Chamber of Commerce,) John Glass, A. D. Webster, F. Colley, W. Hossack, John Wilson, Jas. Hossack, H. Lenfestey, E. R. Fréchette, H. O'Connor, A. F. Belleau, G. Tanguay, J. G. Clapham, — Simmons, Harbor Commissioner, Levis.

Mr. Jos. Shehyn, M.P.P., President of the Board of Trade, occupied the chair, and introduced the lecturer to the meeting, enlarging upon his ability to cope with the subject, and the energy with which he had promulgated his views upon it.

Hon. P. Fortin, who was received with loud applause, rose to address the meeting, expressing his thanks to the Board for their invitation to him to lay his views upon the matter before the meeting. This he proposed to do in a three-fold aspect.

First, to speak of the contemplated system of telegraphy to the Lower St. Lawrence as auxiliary to navigation, shipping and commerce; secondly, with respect to its connection with the fisheries; and thirdly, in its connection with the signal system, including meteorological observations and weather forecasts.

This country, that is Canada proper, without the North-West and the Lower Provinces, had been described as a narrow strip of land traversed by a large body of water. We might reverse the proposition, and say that Canada consists of an immense and magnificent water-course, with a strip of land on either side. This magnificent sheet of water, composed of the lakes, of the river and gulf of St. Lawrence, is the pride and hope of Canada. By it the early pioneers of Canada were enabled to penetrate in the very heart of the country and discover the great North-West territories, and through it civilization spread from the East to the West, from the Atlantic to the Pacific, and up the valley of the Ottawa. The motto of this city and seaport is "*Natura fortis, industria crescit.*" We should be able to say of the magnificent St. Lawrence water-course: "*Natura polens, industria crescit.*"

What has been the hope of this country from the beginning? It is that by means of this water-course we may become the carriers of the trade of the Far West. That has been the hope of Canada, and if we acquire that, we acquire wealth and power. What has been done to improve this great highway? While the country was young, and its finances not yet in a prosperous condition, we commenced to improve the seaports and navigation of the St. Lawrence, to construct canals and to deepen channels, all with a view to further that idea. Apart from such efforts, however, this magnificent water-course had been to a great extent neglected, and that at its very door. He did not desire either here or at any point of his lecture to blame anybody or any party for this neglect, the cause for which may probably be found in the fact that the part of the country in question was sparsely settled and is inadequately represented in a numerical sense. Only three counties existed there, one on the north and two on the south side of the river, and there was therefore but three members to directly represent that district in Parliament. It was true that Quebec, Montreal and Ontario were equally interested in the improvement of the navigation of the lower river and gulf of St. Lawrence, but here as elsewhere, the rule held good that people desired as much as possible to have the public funds expended in the vicinity of their own cities or towns. For years there had existed only one or two lighthouses in the whole of the gulf and lower St. Lawrence, and when he first visited Anticosti, in 1852, there were but two. He had met fishermen who remembered when no light-houses at all had been established, or any other institutions to aid vessels in distress. If time would permit he could have recited many instances in which emigrants coming to this country and the crews of vessels were victims of the country's neglect in this particular, and might also relate scenes of cannibalism which would not have taken place had this part of the country been taken proper care of. The following case is recorded by a correspondent of the New York *World* this year; but twenty years ago an old Magdalen Island captain, Mr. Renaud, had related to the lecturer

the same mournful tale, and he could well do so, as he had been himself in the hut and had seen the human carcasses hung up:—

"In 1828 the passengers and crew of the "Grampus," from Quebec to the Cove of Cork, experienced even a more deplorable fate on Anticosti Island. They were wrecked, forty souls in all, near the south point. Some were drowned, it is believed, while the rest set out for Fox Cove, where there had been a provision depot. It had been removed, however, and the castaways found only an empty hut and an iron pot. Of their sufferings there is no record, for none lived to tell the tale, but the Government schooner on its visit in the spring gathered the main facts. The beams of the hut were shambled like a butcher's stall with human carcasses; the pot, containing human flesh and bones, hung over an extinct fire, while round about lay the skeletons of the guests of this infernal feast. One skeleton was found in a hammock, and by its side a bag containing 48 sovereigns and a note in pencil, signed "B. Harrington"—one of the passengers—requesting that the money, if found, should be sent to "Mary Harrington, Barrack street, Cove, as it was the property of her son. Two skeletons were also found in the woods, where it is supposed the living men went to avoid the scenes in the hut." This is but one of the hundreds of wrecks this desolate shore has witnessed.

After a time, however, certain works progressed and in Mr. Baby's time, several good lighthouses were built. For several years, however, before Confederation nothing was done. After that great event, dawned a new era, and more lighthouses were built, where the need of them was most felt, and strong steam whistles attached to warn mariners of approaching danger during fogs and snow storms. Even with the lighthouses and fog whistles, however, vessels in distress have always been in a state of helplessness, as those who have visited the Gulf can well testify.

The entrances to the Gulf and River St. Lawrence are three in number. One is north of Newfoundland by the Strait of Belle Isle, another is south of that Island, and the third is by the Gut of Canso. Sailing vessels come in by the main entrance generally, that is south of Newfoundland. From the time that a ship reaches Cape Ray, the south-west point of Newfoundland, there are dangers in the way. First comes St. Paul's Island, then the Magdalen Islands, and afterwards, and most dangerous of all, the Island of Anticosti.

These the lecturer indicated on a large chart behind him, and then exhibited a map of the Island of Anticosti, drawn by Mr. Tétu, lighthouse-keeper on the Island, showing, in some places, as thickly as they could be dotted down together, the scenes of various shipwrecks upon its subtle coasts. Near the east and south points there were clusters of wrecks which were really astounding.

The lecturer stated that since 1870 no less than fifty vessels had been wrecked upon the Island of Anticosti. The chart, he said, showing the different wrecks, spoke more eloquently than words or books. If a vessel comes through Belle Isle, and steamers take that route now because it is the shortest, it has this Island in its way, almost right across; and from that circumstance arises so much danger. Two steamships had been wrecked there during the past year, one was the

ill-fated "Lake Megantic," the other was wrecked at the N. E. end. Anticosti cleared, we have the coast of Gaspé in the way and afterwards the coast from Point des Monts and Seven Islands, which lies nearly right across and where, on account of an eddy made by Point des Monts and strong and teacherous currents, vessels are taken out of their course, and there are nearly as many wrecks there as upon the Island of Anticosti.

Having described the water courses and having spoken of the works that have been done in order to assist navigation in the way of lighthouses and fog whistles, the lecturer said he would come to another means of assistance.

Notwithstanding the lighthouses and fog whistles of which he had spoken upon these dangerous coasts, and which he considered as great helps to vessels to guide them out of danger, the lecturer reminded his audience that accidents would happen in so dangerous a gulf and a river, the currents to which he had already made allusion, being of extreme rapidity, and there being little means of a mariner ascertaining their condition or velocity beforehand. As an instance of the force of these currents, Dr. Fortin mentioned that fishermen were often unable to fish for cod in them, in the spring tides, for days together, though they employed a sinker weighing four pounds upon a forty fathom line. It often happened that the sinker would almost float upon the top of the water. These currents were often aided by prevalent winds, so that mariners, no matter how clever, could not but anticipate accidents during fogs or snow-storms especially. Then there arises the necessity of sending intelligence to Quebec or elsewhere, in order that aid may be sent to a ship in distress. The lecturer contended that Canada owes so much to emigrants arriving here, and to commercial men doing business in the country, and to the crews of vessels coming to trade with us, that it should provide means to ensure their safety when sailing in our waters, and for this reason he would first regard the necessity for a complete system of telegraphing with the Lower St. Lawrence, in a humane light; then from the standpoint of security to property, to ships and their cargoes. The present state of affairs was well-known to those, who like himself, had seen the suffering that was endured for want of proper communication with the Gulf. Without desiring to distinguish between parties at all, he could not but consider that Government had been very negligent when so much money had been spent elsewhere, to do so little for the very entrance of our navigation. It was well-known that now, even in summer, and under the most favorable circumstances, if a vessel is wrecked upon Anticosti, the Magdalen Islands or the North Shore, it takes seven or eight days to communicate with the outside world and send news to the owner or agent of the vessel, while under less favorable circumstances, a fortnight or a month might elapse, and if in the fall, six or seven months, before the owner could hear from the captain or crew. He would be less likely to get news, in fact, than if his vessel had been wrecked on the coast of Australia or Japan. The lecturer alluded to a case which had occurred when he was engaged in a Government steamer in the Gulf for the protection of the fisheries. It was reported he was dead, and his friends

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could obtain no information from him for three weeks, although he was in constant communication with a good many vessels on the coast.

This is the state of things that exists now and which has been the cause of the loss of an amount of property which it is almost impossible to estimate. It can only be judged of by a knowledge of the value and extent of Canadian commerce. When examined before a committee of the House of Commons upon this matter in 1876, he had given statistics from trade and navigation reports of the country, showing that in the year 1874-5, the amount of property that passed through the Gulf, up and down, and along the shores of the Maritime Provinces, was \$336,248,556, and the total number of men on board all kinds of vessels passing through the Gulf and along the coasts of the Maritime Provinces was 204,975.

The lecturer cited the following statement he had made in that report:—

"Well, I have taken the pains of gathering statistical information from the Trade and Navigation Reports, ending 30th June, 1875, which I have annexed to this in the shape of statements. I find that the number of vessels with crews, their tonnage and value, passing up or down the Lower River or Gulf of St. Lawrence, to or from ports of the Province of Quebec, to and from the ports of the Province of Prince Edward Island and the Gulf Ports of Nova Scotia and New Brunswick, is as follows:—

No. of Vessels	Tonnage.	Value.	No. of Crew.
4,045.	2,738,376.	\$129,184,000.	77,927.

"I have not been able to procure from the Trade and Navigation Reports the number of coasting steamers and sailing vessels plying between the Maritime Provinces and Quebec and Montreal; but from what I have been able to gather in reports published by newspapers, the number of those vessels up and down cannot be less than 750 steamers and sailing vessels, with crews amounting to 5,500, and a tonnage of 150,000 tons. Their value with the cargoes cannot be estimated at less than \$5,000,000. If we add to that the vessels belonging to the Province of Quebec engaged in the fisheries of the Gulf, numbering about 50, with 350 men, valued at \$7,500; the fishing vessels from the Maritime Provinces, especially from Nova Scotia, which resort annually to the Gulf of St. Lawrence to engage in the herring, mackerel and cod fisheries, to the number of 300 or 400 at the least, with 4,500 men; and the American vessels, which to the number of from 500 to 1,000, with 10,000 men, visit the same shores also for the purpose of fishing, we have another amount for vessels and cargoes of \$5,000,000, which will be found by competent persons, but a fair, if not an under, estimation of the value of those vessels and their valuable fish cargoes.

"The grand total of vessels of all kinds with their number of men, tonnage and value of their cargoes, which is comprised in the amount of exports and imports by the sea will be the following:—

	No. of Vessels.	Tonnage.
Sea-going.....	4,045 ...	2,738,376
Coasting.....	750 ...	150,000
Fishing vessels (Quebec).....	50 ...	3,000
Fishing vessels from Maritime Provinces...	350 ...	21,000
do do United States.....	750 ...	52,000
	<hr/> 5,945	<hr/> 3,061,376

	Value.	No. of Crews.
Sea-going vessels.....	\$129,184,000 ...	77,000
Coasting ".....	5,000,000 ...	5,500
Fishing " (from Quebec).....	7,500 ...	550
" " (from Maritime Provinces and United States).....	5,000,000 ...	14,300
	<hr/> \$139,191,500	<hr/> 97,350

"Add to the amount of value of vessels, of cargoes of coasting and fishing vessels, the value of imports and exports of the Province of Quebec, of the Province of Prince Edward Island and of the Gulf Ports of Nova Scotia and New Brunswick, by the sea-going vessels, and we come to the following results :—

Value of Vessels.....	\$139,191,500
do Imports.....	40,307,953
do Exports.....	36,782,570
	<hr/> \$216,282,023

"This is then the total value of the property that passes through the Gulf and Lower River St. Lawrence during every season of navigation—that is during seven months; but what in our time we should look at more, is the fact that 97,350 human souls pass through those waters and along those dangerous coasts every summer. Should we endeavor to adopt the means of coming to their assistance when they are in distress ?

"The navigation along the shores of the Atlantic coasts of the Maritime Provinces is no less important than that of the Gulf, and if we look to the dangerous nature of their coasts, the prevailing fogs in summer, the snow-storms in winter, we will find that we cannot do too much to render those coasts secure by lighthouses, and to adopt the means of relieving the distress of poor wrecked sailors and saving wrecked property.

"I now give a statement showing the number of vessels arriving from or proceeding to sea, in the Provinces of Nova Scotia and New Brunswick, deducting the number of vessels arriving at or proceeding from the ports of the said Provinces situate in the Gulf of St. Lawrence.

"Total number of vessels, &c., proceeding to and arriving from sea in the Atlantic ports of Nova Scotia and New Brunswick :—

Tonnage.	Vessels.	Tonnage.	Value.	Crew.
2,738,376	Nova Scotia..... 7,052	1,556,632	\$46,698,960	67,908
150,000	New Brunswick... 4,657	1,263,935	37,918,050	39,717
3,000				
21,000	11,709	2,820,567	\$84,617,010	107,625
52,000				

3,061,376

By adding together the value of the imports and exports of these Provinces, deducting the value of the exports and imports of the ports of those Provinces situate in the Gulf of St. Lawrence, and adding the sum thus obtained to the value of the vessels, &c., we have the following:—

Value of vessels.....	\$84,617,010
Nova Scotia—Exports	6,636,171
do Imports.....	11,127,680
New Brunswick—Exports	5,030,693
do Imports.....	9,054,979
	<u>\$116,466,533</u>

As the Trade Returns do not mention anything about the coasting trade, I must make a rough estimate of its value. If I place it at one-half more of what the coasting trade in the Gulf amounts to, I do not think I shall be far astray. This then will give us \$2,500,000 for vessels and cargoes. If \$1,000,000 are added for fishing vessels not counted as belonging to the Gulf, and that portion of the products of the fisheries that does not appear in the exports, we will then have

Total as above.....	\$116,466,533
Coasting Trade.....	2,500,000
Fishing Vessels, &c., &c.....	1,000,000
Grand Total.....	<u>\$119,966,533</u>

The amount of property, then, that passes every year, in the shape of vessels, exports and imports, through the Lower River and Gulf of St. Lawrence, up and down, and along the shores of the Maritime Provinces, will amount to

Through the Gulf.....	\$216,282,023
Along the coasts of Maritime Provinces.....	119,966,533
	<u>\$336,248,556</u>

The total number of men on board of vessels is as follows:—

Through the Gulf.....	97,350
Along the coasts of the Maritime Provinces.....	107,625
Total	<u>204,975</u>

These are the figures that he has taken from the trade reports of 1874-75, and he believes them to be correct."

"It follows, then, that the system recommended will be of service, in an efficient manner that no one can deny, to over two hundred thousand of our kindred, who are exposed to all the dangers of a diffi-

cult sea-faring life along dangerous coasts. Many lives now lost would be saved, and the sufferings of thousands be relieved. Another matter of great importance, will be the confidence this amelioration will inspire in all those who visit our shores, especially foreign captains. How often have I heard it said that many foreign captains actually refuse to come to the Gulf of St. Lawrence, because they are aware that if they should have the misfortune to be wrecked on the islands, in the Gulf, they need not look for assistance, and if this disaster should happen in the latter end of November, neither their owners or families may hear anything about them for six or seven months afterwards. I think that from a humane point of view I have said enough in favor of the project.

The lecturer then gave another extract of the report above alluded to.

"Let us look now at the undertaking from a financial point of view. There can be no doubt that when this system is put in operation, many vessels now wrecked on the coasts above mentioned and totally lost would be saved. Hence this would be a great boon to the shipowner. It would also have the effect of reducing, according to the best authorities, as may be seen by memoranda hereto attached, the rate of insurance, at least 25 per cent., and some well versed in such matters say as much as 50 per cent. Let us say that of the \$336,000,000 (in round numbers) only one-half (and there must be a great deal more) is insured. Then we have \$168,000,000 insured. The rates are according to the season of the year (in the fall being very high for the gulf), and range from $\frac{1}{2}$ to 10 per cent. For my calculation I will take an average figure, say, 1 per cent. on ships and cargoes, which is certainly not too high. At that rate \$1,680,000 is paid annually for insurance. If, by the introduction of coast line telegraphs and semaphores, we reduce the rate 25 per cent., we gain yearly the handsome sum of \$420,000; even if it is only reduced by $12\frac{1}{2}$ per cent., that is, if instead of paying an average rate of 1 per cent. we pay $\frac{1}{8}$ per cent., we will still be gainers by \$210,000. If any one will compare this *great gain* with the cost of building and keeping up a system of coast line telegraphy, I am sure they will not in deciding, hesitate that such a system should at once be inaugurated.

As regards the property exposed, it has been seen that it was of a very large value, and the Government was bound, he contended, to do all in its power to protect it, either afloat or stranded.

He had already said that Canada expected from this magnificent water-course which takes its source in the very heart of North America, a large part of the carrying trade of the great West. But in trying to carry out that idea, we have, however, a formidable rival in the port of New York, which takes by far the greatest part of this trade. We have been trying to compete with that port for the last thirty years, and if we are to succeed in the struggle, how is it to be done? By carrying cheaper than our rival. What is the charge in the cost of carrying that can be reduced? We cannot cut down the expense of building a vessel or the wages of a crew to a lower figure than at present, but we may attempt a reduction in the cost of insurance upon our goods and our ships, and this, it seemed to the

lecturer, was what the Government should try to bring about, by giving greater protection to vessels, when afloat, but not less so when stranded. The best means to be adopted for this end, was, he believed, the construction of the system of telegraphy in question.

He would tell them concerning this system, how it was brought about. For sixteen years he had charge of the service for the protection of the fisheries. He saw and knew how defective the system of communication on the sea coasts of Canada was, but if he had spoken then, hardly any one would have listened to him, and he made up his mind to bring it before the public at the first favorable opportunity. That opportunity occurred in the spring of 1875, when seven steamships with more than 1,000 people on board were caught in the ice in the Gulf of St. Lawrence, and no tidings of them could be had for a fortnight. It could not be known whether they were safe or not, or exactly where they were, and all would remember the terrible anxiety experienced in this city, all over the country and in the United States. He then wrote a letter on the subject, and advocated a system of telegraphy for the Gulf and Lower St. Lawrence, which was most favorably received. He also had a chart delineated in explanation of his views on the matter, and induced his friend and *confrère*, Dr. Robitaille, to bring the matter up in the House of Commons. Dr. Robitaille, to whom very much credit was due for the interest he had manifested in the subject, moved for a committee, of which he was the President, and sent for persons who could give the best and most reliable testimony. The result was the printing and circulating of the report which he had in his hand and the accompanying chart, which illustrated the system and showed the public the necessity which really existed for such a scheme. He was glad to be able to say that part of the system he recommended had been carried out, and that a line was now really in existence from Matapedia to Fox River, and from Matane to Fox River, girding the whole of Gaspesia, and enabling the different stations, nearly fifty in number, to report a passing vessel every three hours. The line from Metapedia to Fox River was built thanks to the good-will and energy of the inhabitants of the counties of Bonaventure and Gaspé, who furnished the poles gratuitously to the Telegraph Company. The Local and Federal Governments contributed for the other line. Much of this was due to the energy of Dr. Robitaille, and the assistance of the Quebec and Montreal Boards of Trade, and on these lines we now have stations nowhere more than 20 miles apart, so that from any point along the coast, a report from a wrecked vessel may be sent to Quebec or any other part of the world within at the most three hours. He not only desired to see the same system extended all over the Gulf of St. Lawrence, Anticosti, and the Magdalen Islands; but also on the sea coasts of the Maritime Provinces.

The people of the Maritime Provinces are a very important element of the maritime wealth of this country, and we know that, for the number they represent, they carry on a larger maritime trade than we do. They also require a telegraph along their coasts, and the system recommended applies to Nova Scotia, New Brunswick and Prince Edward Island, as well as to Quebec.

The system which he recommended is composed of a certain number of land lines to connect all lighthouses with the telegraph system already in existence, and of submarine lines to connect the Island of Anticosti, the Magdalen Islands, and other islands upon which there are lighthouses with the mainland. The following are the different lines suggested :—

PRINCE EDWARD ISLAND.

1st line.—From Tignish to the lighthouse at the North Cape, distance about 10 miles.

2nd.—A line from the nearest station to the lighthouse of the East Point, distance about 15 miles.

NOVA SCOTIA.

1st.—A line, submarine, from Cow Bay, on the north side of Cape Breton, to connect with the lighthouse on the north-east end of Scatari Island, distance about 12 miles.

2nd.—A line from Halifax to Cape Canso, to connect with the telegraph system of Nova Scotia, all the lighthouses and all the sea ports of that part of the eastern coast of that Province, which extends on a distance of about 140 miles.

3rd.—A line from Cape Sable Island, south-east extremity of Nova Scotia, to connect with the port of Barrington, distance about 16 miles.

4th.—A line from Digby to the lighthouse on Brier Island, south side of entrance of the Bay of Fundy, distance about 40 miles.

5th.—A submarine line to Sable Island.

NEW BRUNSWICK.

1st.—A line from the lighthouse of Point Escumeneac, south side of entrance to Miramichi Bay, to the nearest telegraph station, distance about 20 miles.

2nd.—A line to connect the Miscou lighthouse, south part of the entrance to Baie des Chaleurs, to the nearest telegraph at Shippigan, distance about 18 miles.

PROVINCE OF QUEBEC.

1st.—Line, submarine, from Prince Edward Island or Cape Breton to the Magdalen Islands, distance by the first route 45 miles, by the latter 48 miles. Land line through the Magdalen Islands, connecting each port together, from Amherst Island to the east point of Coffin Island. Line, a submarine, to connect the Bird Rock lighthouse with the Magdalen Islands telegraph system, distance 16 miles.

2nd.—A line to connect the Island of Anticosti with the Gaspé telegraph system, distance about 38 miles, and a land line along the South Shore of the said Island, extending from the lighthouse at the east point to the lighthouse at the west point, distance about 130 miles, with stations at the following places: 1st, lighthouse at west point; 2nd, Elis Bay; 3rd, Becschie River; 4th, lighthouse at south-west point; 5th, Pavillon River; 6th, Jupiter River; 7th, lighthouse at south point; 8th, lighthouse at Heath point; 9th, Fox Bay, north side of Island, by a line touching from south point, distance 20 miles.

3rd.—A line from Murray Bay to Mingan, along the North Shore of the river St. Lawrence, with stations at the following places: 1st, Pointe à Pic; 2nd, Tadousac; 3rd, Les Escoumains; 4th, Sault au Cochon; 5th, Mille Vaches; 6th, Bersimis; 7th, Manicouagan; 8th, Godbout River; 9th, Point de Monts; 10th, Trinity Bay, 11th, Egg Island lighthouse; 12th, Cawee Island; 13th, Seven Islands; 14th, Moisie River; 15th, Shallop River; 16th, Sheldrake; 17th, Thunder River; 18th, Magpie Bay; 19th, St. John River; 20th, Long Point; 21st, Mingan Harbour, distance about 305 miles.

From Mingan this line ought to be extended as early as possible after the completion of the foregoing lines, first to Natashquan and afterwards as far as Forteau lighthouse, at the narrowest point of the Strait of Belle Isle. This line would have the most beneficial results, both as regards the prosecution of the fisheries in those ports and the assistance to shipping and navigation; distance about 300 miles. There could be established on that line about 30 telegraph stations.

The system includes besides several small lines of one or two miles in length necessary to connect all the lighthouses with our telegraph system. When all this would be completed the head of the signal service in Canada would be able to know in a short time what takes place on any part of the coasts of Canada.

The lecturer contended that he need not go over again the arguments in the papers and in the report already referred to, to prove how many vessels might have been saved had such a system of telegraphy as that above suggested been in existence. It frequently happened that they went ashore during fogs and when there was very little wind. If assistance could reach them before the first or even sometimes the second storm after they ran ashore, there would be a good chance of hauling them safely off before their keels were broken. In the course of his 27 years experience in the gulf and river St. Lawrence, sixteen of which he was in command of the service for the protection of the fisheries, he had known many cases in which this might have been done and thousands and thousands of dollars saved, if only there had been speedy and sure means of communication with Quebec or elsewhere. With a proper system of telegraphy in existence, and a steamer rigged with proper appliances stationed at Gaspé Basin, enough would be saved annually by it to commerce, to pay for its first cost, and maintain it in working order four or five times over. In 1865, when the lecturer was in command of the government Cutter "La Canadienne," the "North Briton" was wrecked on the south coast of Anticosti. He proceeded immediately to the scene of the wreck and found the people there without shelter, exposed to the inclemency of the weather, to the sun and the flies, having some difficulty in getting food, and yet they were kept waiting there nearly a month for assistance to arrive, though with proper telegraphic communication it would have been forthcoming in three days, and the telegram from the captain to the owners of the steamer that he took back to Percé, had to be sent from there to the nearest telegraph station at Metapédia, a distance of 170 miles, which took nearly three days. But now a line is built along the coast I have said before and there is a telegraph station at Percé.

The lecturer then referred to three cases that had occurred during the present year.

The "Lake Megantic" had been wrecked with a full cargo of grain and 270 cattle from Montreal, by being driven ashore by the velocity of unknown currents, after the captain, who was a man of experience, and had done his best under the circumstances, had believed himself quite clear. The vessel was stranded at the distance of 90 miles from Cape Gaspé in the vicinity of which there is a telegraph station, yet it took eight days before his despatch for assistance reached the station, and five days more elapsed before a steamer from near Cape Rosier arrived to render relief to the passengers and crew. Another vessel went ashore at Fox Bay, north-east point of Anticosti, and the captain contrived to send a message to Quebec for assistance. The necessary machinery, &c., was dispatched by the agent in this city, but after so long a delay, owing to the late receipt of the message, the vessel in the meanwhile had been righted and floated by fishermen at the scene of the wreck. The s. s. "Memphis" broke her shaft in the vicinity of Anticosti, and seven days after found her way into Douglstown under sail, the s. s. "Teutonia," which had received instructions to look out for her, spending seven days in steaming about the Gulf in the search. Dr. Fortin here read the following letter published in the CHRONICLE of 10th September last from Mr. Yarker, one of the "Teutonia's" passengers, giving particulars of the cruise, and arguing very strongly in favor of a line of telegraph from Quebec to the Gulf.

SIR,—I was a passenger along with 27 others by the s. s. "Teutonia," of the Dominion Line, on her recent voyage from Liverpool, and upon arriving in Quebec yesterday morning I learned that her unexplained detention gave a good deal of anxiety to friends in the West who were not aware of the utter lack of telegraphic advantages in the lower part of the Gulf of the St. Lawrence.

The alarm of friends is a small matter compared with the helplessness of captains of vessels navigating the Gulf, through this amazing defect in the facilities of communication. My experience as a passenger in this instance gravely brought this want before me, illustrating it in a most aggravating way.

The "Teutonia" left Liverpool on the afternoon of Thursday, the 22nd of August, and making a splendid run reached Anticosti early on the morning of Saturday, the 31st, thus due to arrive at Quebec on Sunday night, which would have been a very satisfactory voyage. But just east of the Island of Anticosti we picked up from a small boat an officer and four seamen belonging to the s. s. "Memphis," and learned that their vessel had broken her main shaft on the Wednesday preceding. These poor men were about and upon the island, where there are plenty of lighthouses, for four days unable to communicate with any points where assistance could most likely be obtained, and hence the disabled steamer, passengers and cargo were at the mercy of the sea and storms all that time.

But worse than even that, the "Teutonia" instantly steamed off in the direction of the lately prevailing winds in search of the missing steamer. She made circles of the Gulf N.E., E. and S.E. of Anticosti

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for many miles. She crossed over near Labrador and passed down near the Strait of Belle Isle, keeping a sharp lookout every hour of the long and tedious days, and sending off rockets, &c., at night. Our gallant captain then ran his steamer up the coast of Newfoundland, passing several lighthouses. At Cape Ray a boat's crew was sent ashore, expecting to obtain telegraphic information, but even this prominent place disappointed us. We then passed on ten miles, and at a small village, stupidly known by the misleading name of Channel, we found the wires, and learnt that the "Memphis," through the great exertion and skill of Captain Mellon, had managed, in seven days, to reach Gaspé under sail, and on Thursday evening, September 5th, the "Teutonia" took her in tow, and in a little over two days, safely lodged her in the harbor of Quebec. With captain, officers and crew greatly fatigued, and steamships being almost powerless under sail alone, it is distressing to imagine what might have happened had the "Memphis" encountered stormy weather and been driven upon the rocks off Gaspé Point, about two miles from which she must have passed.

Had there been a cable from Anticosti to Gaspé, about 100 miles, and overland wires from end to end of the Island, about 120 miles, the "Memphis" would have obtained assistance at the latest the day after the accident, and thereby much valuable time and property saved and anxiety of passengers and crew speedily relieved.

Surely this question of telegraphic communication in the Gulf cannot be taken up too soon, if this noble outlet to the Atlantic is properly valued by Canada. The art is so simple and easily learnt that the lighthouse keepers or their sons or daughters could perform the duty, and thus no expense for labor and skill is necessary. At prominent points such as Anticosti, Belleisle and Cape Ray a system of sight signals could be arranged to give information to passing steamers, without even stopping them, and the value of such an advantage as enabling a steamship to quickly reach a vessel in distress can hardly be estimated, particularly when it is remembered that much more danger is apprehended in sight of land than in the open sea. What interest and joy to the lonely lighthouse people to be in communication with the more favored parts of the world and to be active and instrumental in saving life and property?

Might not, say, \$500,000 be well appropriated in this work, so that in a short time hence every lighthouse in the Gulf would be a telegraphic station? And who can estimate then the enhanced value to the Dominion of this great natural route, to say nothing of the advantageous fact that travellers and ships would be heard from five days after leaving Londonderry! I hope some one more interested will take up this important matter and agitate it to a successful issue.

I have trespassed upon your space too much perhaps already, but I would like room for another, though a trifling matter. After our search it would appear that at times, at night, we were within fifteen or twenty miles from the "Memphis," and had she put fire balloons instead of rockets, must we not have seen her? What say those who know?

Allow me in conclusion to say that the passengers on this "voyage of search" cheerfully and patiently gave up a week which they expected to enjoy "at home," and during the long trip of seventeen days, exposed of course to more than usual danger, they had good reason to appreciate the endurance, care, kindness and great skill of Captain Gibson, the efficiency and geniality of officers Couch, Braniff and Nelson, as also the excellent steaming qualities of the good steamship "Teutonia."

Yours truly,

G. W. YARKER.

Quebec, Sept. 9th, 1878.

P.S.—I have just learnt that the s.s. "Lake Megantic," recently wrecked off Anticosti, was actually lying there for several days before her owners became aware of the accident, and her passengers were upon the Island for days, while their friends imagined they were nearing Liverpool! What a pertinent illustration of the subject of this letter; and as I notice an investigation into the cause of the accident is to be held, I trust the telegraphic question will be made prominent and take some practical steps.

G. W. Y.

The lecturer said he could also read the report of Capt. Gibson, master of the "Teutonia," which showed the necessity of the telegraph and signal system of the islands of the Gulf of St. Lawrence, but it would take too much time.

The hon. gentleman hoped that enough had been said to prove the utility and necessity of a proper scheme of telegraphy with the Gulf in the interest of shipping and navigation.

A perusal of the minutes and statements of the report of the Committee of the House of Commons appointed in 1876 will show how many vessels with their valuable cargoes would have been saved by means of such a system.

OF THE TELEGRAPHIC SYSTEM AS AN AUXILIARY TO THE FISHERIES.

The lecturer would now speak of the system as auxiliary to the fisheries, which have certainly a great importance when it is considered that they represent an annual value to the country of ten, or even sometimes twelve millions of dollars, of which seven millions are exported to foreign countries, and that the extent of coast along which they are prosecuted is 3,160 miles, divided as follows:

EXTENT OF SEA COASTS OF EACH PROVINCE.

Province of Quebec.....	1,320 miles.
" of Prince Edward Island.....	325 "
" of New Brunswick.....	455 "
" of Nova Scotia.....	1,060 "
	<hr/>
	3,160 miles.

As these fisheries being carried on principally in the Gulf, the telegraph would prove of the utmost value to those engaged in them. The most powerful maritime nations were always those which had been largely interested in the fisheries. In support of this argument the lecturer instanced the Dutch, who at one time almost held the supremacy of the sea; the Norwegians, who at least hold a maritime equality with other powers which have a far greater population, and in Great Britain itself, the greatest maritime power that ever existed, large numbers of her best sailors, both commercial and military, were drawn from its fishermen. The economy of France was well known, and was now doing it good service, yet that power had spent millions of dollars in the fisheries off the coast of Newfoundland, to train good men for its military fleet. The Canadian fishermen who are engaged in the fisheries in the Gulf and along the North Shore of the St. Lawrence have to go, so to speak, quite blindly about their work. They know when they start out, where they are going, but they do not know how they will succeed when they reach their destination, as they are completely ignorant whether the fish have already arrived there. They do not know whether they are within fifteen or twenty miles of them, but are simply playing at hazard. In a certain way, the extension of the system of telegraphy now advocated, would make the fishermen sure of their voyage. All the fishing stations would be connected by it, and bulletins could be displayed, indicating the state of the weather, the existence of bait, the whereabouts of the fish, &c. Dr. Fortin expressly explained that this idea was not new, and that he did not desire to take credit for it. He then exhibited a chart of the Norwegian coast, showing what Norway had done for its fishermen in the way of telegraph stations at the various fiords along the coasts, by which the fishermen frequenting these harbors such as abounded on the coast of Labrador, were immediately informed of changes in the weather, of the arrival of the fish at any point, &c. It will be seen that the Norway telegraph system girdles her whole coasts, and that there are many stations, especially at the celebrated Luffoden Islands, which are kept open only for the purpose of assisting the fisheries. The chart had been given him by General Rasloff, of Denmark, who was here some years ago with reference to a projected telegraph line from Scotland to America by way of Iceland, and from whom he had received a large amount of useful information. He added that what Norway had done we should do. Norway is like our country, a cold, hard country; its coasts are pretty much like our coast of Labrador. If Norway had not encouraged her fisheries in every way as she did, there would not be in that country enough of food for her population.

Then the lecturer read the following extract :

EXTRACT from the Report of Her Majesty's Vice-Consul General at Christiania, on the Cod and Herring Fisheries of Norway, for the year 1866.

" The population directly and indirectly interested in the fisheries is probably not less than 150,000, and the fishermen actually engaged in them at one time, not less than 60,000. These latter move to-and-

fro with their boats along the coast, according to the reports they hear of the so-called "sights," i.e. straw herring, sea birds, whales, &c., &c.; and formerly—before the telegraph was impressed into their service—the inability to test the accuracy of the reports, and the great distance they had to traverse before reaching the neighborhood of the shoals, were the cause of endless disappointments and failures, and the catch was frequently lost for the want of hands to capture fish. This is now all changed as far as the herring fishery is concerned. Telegraphic stations are now erected, or in course of erection, at the principal points along the coast, and the Inspectors cause daily notices of the appearance and position of the shoals to be posted up at each station, and keep up constant communication with all these stations now in operation. "Field" telegraphs are kept in readiness to join on to the main line, and thus the slightest movements of the shoals are carefully watched and communicated, and it is a curious sight to witness the sudden exodus of thousands of fishermen with their train of buyers, salters, &c., with boats, barrels and appliance hastening to a distant place at the call of the wire. The men seem to prize highly this valuable coadjutor, and when the catch is chiefly attributable to its agency, they call the fish "telegraph herrings." The Inspectors likewise, every morning post up at the different stations a statement of the quantities fished, and quotations of prices paid per barrel, which they continue to do until the spawning time is passed, which is indicated by the milky appearance of the water."

"Although the herring is fished during three months, the chief fishings only extend over about six weeks, during which from 10,000 to 20,000 tons are taken weekly."

"The benefit likely to accrue from the use of the telegraph is incalculable, for it is not only likely to increase the yield of the great annual cod and herring fisheries, but it will enable the scattered dwellers along the coast and on the shores of the large Fjord to assemble at given spots during other seasons of the year, and to prosecute with advantage the minor but numerous other fisheries of the country, especially that of the fat and much esteemed summer herring, which, in plumpness and delicacy of flavor, fully competes with the Dutch or "North herring."

The following statement will show the paramount importance of the fishing industry in Norway, and it must be remembered that a still larger quantity of fish is taken for local consumption, making the total catch at nearly \$30,000,000:—

FISH OF ALL KINDS EXPORTED FROM NORWAY IN 1876.

	Quantity.	Value.
Salmon, Fresh.....cwt.	5,622	\$106,243
Mackerel and other fresh fish.....cwt.	29,474	90,126
Codfish, Stockfish, dried without being salted.....cwt.	393,674	1,692,087
Codfish, split, salted and dried.....cwt.	680,761	3,739,264
Herrings.....barrels.	897,108	5,132,272
Anchovies.....boxes.	167,821	115,290
Lobsters.....thousands.	1,270	130,329
Fish oils.....barrels.	96,494	1,431,216
Fish offals for bait.....barrels.	45,203	540,075
Fish guano.....cwt.	2,003	242,487
		<u>\$13,270,911</u>
Stockfish exported in Italy and in Austria.....cwt.	166,802	
Dried Codfish exported in Spain.....cwt.	474,207	
“ “ “ in Portugal.....cwt.	58,671	
“ “ “ in Italy and Austria.....cwt.	10,620	

The products of the French sea-coast fisheries, including those carried on off Newfoundland and Iceland, amounted in the same year, 1876, to 88,990,591 francs, equal to about 17 millions of dollars. 21,268 vessels and boats, manned by 79,676 men, were employed in these different fisheries.

He contended that if Canada did not do something to make the labors of the fishermen less arduous and more profitable by facilitating their intercourse with the north shore and the islands by means of telegraphic communication, and he would add by the way by steam communication, their earnings will be found inadequate to the wants of a fast increasing population. Their increase in numbers is larger than that of their means of subsistence, and if nothing in that way is provided for them, they will emigrate to the States, as numbers of them are already doing. It was well known that the Gaspé fish was the best cured cod in the world, owing to the facts that it was brought ashore immediately after being caught, was split at once, and cured in a dry atmosphere free from fogs such as were so common in Newfoundland. Gaspe finds now its principal competitor, however, in Norway, where last year 900,000 quintals of fish were cured, and 70,000 quintals sent to Oporto alone. He reminded his hearers that whatever they did to assist the fishermen was also helping themselves, for those hardy men, while producing a very important article of domestic and export trade, were very large consumers of manufactured goods, requiring always to be well clothed, well fed, warmly dressed,

&c. He hoped and he had no doubt that his appeals in favor of so useful and deserving a class as the fishermen would find an echo in the heart of every Canadian.

SIGNAL SERVICE.

In speaking of this telegraph system as applied to the signal system, Hon. Dr. Fortin explained that he alluded not merely to the signalling of vessels, but also to the signal service as established in the United States, under the direction of General Myer, and in Canada, with a head office presided over by Professor Kingston. As illustrative of the great value of this service in the United States and the degree of accuracy to which it has attained, the lecturer read the following extracts from an interesting article in Frank Leslie's popular *Monthly*, from which it appeared that the meteorological observations deduced from reports received by General Myer, frequently showed 82 per cent. of accuracy. It also appeared that the reports from all the signal stations scattered throughout the States, were frequently concentrated at Washington in the space of 40 minutes.

"The Signal Service of the United States owes its development and present importance very largely to the ability and efforts of General Albert J. Myer, who, in 1866, after distinguished services in the war of the rebellion, was made Chief Signal Officer in the Army. Under an Act of Congress, approved in February, 1870, he was charged with the special duties of the observation and giving notice, by telegraph and signals, of the *approach and force of storms on the sea-coast and northern lakes*, at the military posts in the interior, and at other points in the States and Territories.

"Addressing himself with genuine enthusiasm to the work assigned him, and foreseeing, apparently, results of which the average mind had no conception, he at once organized the meteorological division of the signal office on an efficient basis. By a subsequent Act, he was charged with the special duties of telegraphing, etc., being authorized to establish *signal stations at lighthouses*, and at such of the *life-saving stations* as are suitable for the purpose, and to connect these stations by telegraph with such points as may be necessary.

"The Acts providing for the meteorological work necessarily require the duties of the service to be performed militarily, the officers and men being instructed for the different branches of the service at a signal school of instruction at Fort Whipple, in Virginia, some three miles from Washington, and at the central office in that city. The term of enlistment is for five years, and the service is open to any American citizen of good character who can face the rigid tests of the preliminary examination. The course of instruction includes the use of meteorological instruments, the modes of taking observations, and the forms and duties required at observation stations and for the display of storm signals. The men are also taught telegraphy, and are drilled with arms and in the usual duties of soldiers—the design being to qualify them for any possible exigency that may arise.

"The Signal Service as now organized consists of 18 commissioned officers, 150 sergeants, 30 corporals, and 220 privates. This force has the management of 217 stations, extending from the *Dominion of Canada*

to the *Rio Grande*, and from the *Atlantic* to the *Pacific Ocean*. Of these stations, 143 take meteorological observations, 24 are known as sunset stations, 11 as display stations, 24 as special river stations, 12 as commercial stations, and 3 as printing stations. Telegraphic and mail reports are also received from 4 stations in the West Indies, and 19 in *Canada*. At stations furnishing telegraphic reports, the men are required to furnish tri-daily, on each day, the results of observations made at three fixed hours, and embracing in each case the readings of the barometer, the thermometer, the velocity and direction of the wind, the rain-guage, the relative humidity, the character, quantity and movement of upper and lower clouds, and the condition of the weather. These observations are taken at such hours, at the different stations, as to secure absolute simultaneity—allowance being made for the differences between the fixed time (7.35 A.M., 4.35 P.M., and 11 P.M.,) and the local time, at the different stations. Three other observations, at 7 A.M., 2 P.M., and 9 P.M., local time, are also taken and recorded at each station, and a seventh and special observation is taken and recorded at noon on each day. When such instrumental changes are noted at this observation as to cause anxiety, the fact is at once telegraphed to the central office at Washington. An eighth observation is taken at the exact hour of sunset at each station, and this, embracing the appearance of the western sky, the direction of the wind, the amount of cloudiness, the readings of the barometer, thermometer, and hygrometer, and amount of rainfall since the last preceding report, is communicated to the central office, with the midnight report. So perfect is the discipline, and so trustworthy the work of the force, that the reports from the stations, covering the whole expanse of the continent, are frequently concentrated at the central office at Washington, in the space of forty minutes."

"It is upon the data thus accumulated at the central office that the daily *official deductions*, or *weather forecasts*, and the especial deductions in pursuance of which orders are issued for the display of cautionary signals, are based. The tri-weekly synopses, which are found in all the daily papers, show the meteoric conditions existing over and near the territory of the United States for each period of twenty-four hours immediately preceding the publication of the report. The "Indications," or "Probabilities," foreshadow the changes which seem to be suggested as probable by a study of the charts, in connection with the meteorological rules and generalizations which experience has more or less clearly established. Eight charts, exhibiting the date of the observation reports, as to the barometric pressures, relative humidities, cloud-conditions, dew-point variations, etc., are draughted and examined before, and are essential to, each official announcement. The statements designed for publication, issued thrice daily, are telegraphed at the moment of their issue to the principal cities, and reach, it is believed, fully one third of the entire population of the country. The average per centage of verifications of statement comprising the predictions of the barometric pressures, temperatures, wind directions, and character of the weather to be expected in the districts to which they had reference, was, during the year 1877, just 86.16 per cent. The per centage of accuracy, however, limited to the pre-announcement

of the weather to be expected, exclusive of the other conditions named, was 90.05 per cent. That such a degree of perfection has been achieved, with only seven years of labor, is certainly remarkable; but the Chief Signal Officer gives it as his opinion that it would be possible to do much more, and predict, with almost absolute precision, the weather conditions for each individual State, were *the number of stations to be so multiplied as to enable him to command local and neighborhood observations.*"

"The confidence which the uniform accuracy of the announcements of the Signal Office has inspired among shippers and sea-faring men, affords a very conclusive testimony as to its utility and value. The danger signal of the Service is not, indeed, infallible, but it is seldom disregarded—and when it is, the consequences are not unfrequently disastrous. These signals are displayed at the different lake and sea ports, and upon the coasts in pursuance of orders from Washington, based on the reports of observers indicating threatening weather. Thus, a red flag with a black centre displayed by day, or a red light shown by night at Norfolk, or Buffalo, or Sandy Hook, or Detroit, or elsewhere, indicates a probability of stormy or dangerous weather for the particular port or place, or in the vicinity of the place in which it is so displayed.

"The vessel which goes to sea with the cautionary signal flying, simply braves possible disaster. The United States' Steamer *Huron*, last November, with strange perversity, ignored the warning signal at Norfolk, and ship and crew, caught in the terrors of the storm which that signal foretold, perished at Kitty Hawk.

"The *Huron* had a crew of 135 men and she was worth \$700,000.

"Carefully compiled statistics as to the benefits which have accrued to commerce from this branch of the Signal Service show that, since the introduction of the system, hundreds of vessels, by remaining in port in obedience to the warnings given, have avoided peril and loss; that, in a word, the annual average of disasters occurring at or near points at which cautionary signals have been displayed, has been vastly lessened during the years in which such displays have been made.

"But it is not alone in the display of cautionary signals that the Signal Service sustains a most important relation to the commerce of the country. The distinctive Sea-coast Service, as connected with the Life-saving Service, is entitled to special mention. The Service has under its direct control 543 miles of telegraph wire, extending from Sandy Hook to Cape May, from Norfolk to Hatteras, and from Wilmington to the mouth of the Cape Fear River—the most frequented, and, in some places, the most dangerous coasts of the United States.

"These lines and the signal stations, located for the most part at lighthouses and life-saving stations, are directly on the coast. The observers command a full view of the sea, and disasters by shipwreck cannot escape their eye. They have from Washington, at all times, the latest reports of the weather conditions all along the coast, and of the sea itself as far as they are attainable. They are able, therefore, to warn by signals of coming danger, all vessels passing within their view.

"Being practiced in the signals of the International code, ships of any nationality in distress can communicate with them, and so command instant help. Many instances of the service rendered in this way might be given, as illustrating the expedition with which the men at these stations perform their work. It is mentioned that, on the occurrence of the wreck of the brigantine *Nipoli*, a telegraphic station communicating with Washington was opened on the scene of the wreck, and had reported the facts to the central office before the life-boat, brought from a station comparatively near, had reached the grounds.

"A notable illustration of the usefulness of the Coast Service was furnished in March, 1877. On the 21st day of that month, a storm of unusual severity was signaled from the central office, as threatening the middle Atlantic coast. On the morning of the 22nd, when the fog had lifted, the sergeant in charge of the station at Cape Henry discovered a large vessel stranded on a dangerous shoal off that station; he at once notified the wreckers of Norfolk, and reported the fact to the main office. Nothing was known at that time of the nationality of the vessel, the port from which she had sailed, her cargo or condition. The life-boat from the life-saving station was driven back while attempting to reach her.

"With the earliest light the sergeant displayed at his station the attention-flags of the International code. The answering signals soon flew from the stranded ship, and it was telegraphed by flags of the International Code that the vessel was the English ship *Winchester*, which had sailed from Liverpool in ballast, bound for Norfolk, with a crew of twenty-seven men. The captain further desired that two steam-tugs should be telegraphed for at the nearest port to come to his assistance.

"This message was at once sent to Norfolk by electric telegraph, by the men of the Signal Service, who were keeping up at the same time communication by code-flags with the endangered vessel. The official signature of the sergeant in charge of the station was a sufficient authority to the wrecking steamers telegraphed for to start to the rescue. By the same electric wires the facts were at the same time telegraphed to the central office at Washington, whence, being communicated to the Life-saving and other departments, the whole force of the United States could, if needed, have been brought into action.

"The work went on at Cape Henry, the vessel asking by signal that a safety-line might be fired to them, and the Life-saving service making the attempt. The range was, however, too great. Later in the day, a line was floated ashore from the ship, a life-car put in operation and a number of the crew landed. The crew were reported all safe. Before sundown, as the storm diminished, active efforts to save the ship had commenced. A part of the crew remaining on board, a plan of night-signals was arranged, which, shown from the vessel, should call for the launching of the life-boat to bring them off in case of need in the night.

"The next morning, March 23rd, the captain of the vessel came on shore, the life-car being still kept working to the vessel. The men of the crew were sent back to aid the wrecking parties as soon as the

sea should permit the steamers to approach the vessel. The work commenced on the 23rd and was continued on the 24th. On the latter day the cautionary signal was again ordered up at the station, another storm-area then approaching from the southern Atlantic coast, and especial warnings were sent to the ship and those employed on her to take such precautions as would enable them to land in case of danger.

"On the evening of March 25th a violent storm, with very heavy sea-swell, had reached Cape Henry. On the next morning it still continued, and with the light the sergeant in charge of the station discovered three barks stranded near the *Winchester*, all within a mile of each other. The storm continued violent. The wreckers at Norfolk were at once notified of the new disaster, and the facts related to the Chief Signal Office at Washington. The "attention signal" was again flown for the bark which seemed most in danger. No attention was paid to it. Soon after the main and mizzen masts of the bark were carried away. The life-boat could not reach her. Later her name was read by a telescope, as the *Pantzer*, and the crew of the life-saving station succeeded in firing a life-line over her. But, strange to say, while the danger seemed great, the crew neither recognized the signal kept flying, nor hauled in on the life-line, their only chance for safety. A surf-boat from the wreckers succeeded in boarding the other stranded barks, and found them to be the Italian barks *Franceshino* and *Monte Tabor*. Telegrams were then sent by the Signal Service men to Baltimore, asking for additional aid, anchors, cables and tugs.

"Late in the day, and some time in the afternoon, the *Pantzer* showed the "answering signal" of the International Code. The vessel was then ascertained to be a Norwegian bark, and it is supposed her crew had not before realized that on a foreign coast she could ask for aid. Almost immediately after her signal was answered, the *Pantzer* signaled, "Please send a life-boat." In response to this the signal station showed the signal, "Haul in on the line;" it seeming that in all the danger the crew of the bark were not aware of the uses of this line, which had been fired across her deck early in the morning.

"The line was at once hauled on board the *Pantzer*, the crews of the life-saving stations had made the life-car ready, and by nine o'clock at night her crew, eleven men all told, were safely landed. In the rough weather which followed, this vessel went to pieces.

"Of the others, the ship *Winchester* was safely floated after some days' labor, and the two barks *Franceshino* and *Monte Tabor*, saved without great difficulty.

"Commenting on these incidents, the chief signal officer says: "Had no Signal Service existed, there would have been no telegraphic wire to Cape Henry; had there been telegraphic wires to Cape Henry without the Signal Service there would have been no men capable of at once working the electric wires and of communicating with vessels by international signals. Had either of these been wanting, it is quite likely that very valuable vessels would have been totally lost, because aid could not have been quickly enough called for from adjacent ports, nor could the efforts of the salvors have been wisely or safely directed without the constant knowledge of the weather changes, had, as they

were, during all the time the vessels were endangered. The crew of the *Pantzer* could not have learned how to draw on board of their vessel the life-car, and might have perished. The wreckers would not have been present, as they were, to aid in the unusual case of four vessels stranded together, and the crews of the life-saving stations could not have had, as they did, the immediate supervision of their chief (the chief of the Life-saving Service) at Washington. As a test of skill exercised in communication, it is pleasant to consider that vessels of two different nations, the English and the Norwegian, sailing from distant ports, and finding themselves together in distress on the coast of the United States, found also such provision there made, that each could make known his wants, each in his own language, as if on their own coasts at home. They were, perhaps, even more promptly succeeded than they would have been on a foreign coast."

"Recently, the observer at Barnegat, telegraphed to the central office, "Vessel has just come ashore. Help wanted." In twenty minutes from the time at which the despatch left the Barnegat station, it had reached its destination, and an order had gone to the nearest wrecking-steamer at Sandy Hook to proceed to the relief of the disabled vessel. It may be added, as showing the perfection of this branch of the Service, that in cases where the telegraphic wires have been broken at inlets or in violent gales, communication has been maintained uninterruptedly, for considerable periods, over extensive reaches of land and water, by flags and torches, used as signals.

"The importance and value of a service of this character on our dangerous coasts are obvious. Could the lines of communication be extended from New York to the Gulf, with capable observers and life-saving crews at every available point, the losses from shipwreck would speedily be reduced to a minimum. As it is, the benefits resulting to commerce are almost beyond estimate.

"With a view of promoting the efficiency of the Service, a permanent committee is established with each Board of Trade in the principal cities of the country, which undertakes to state monthly to the Chief Signal Officer the condition and character of the Service in that city and vicinity—whether it is well conducted, has been useful, and can be improved in any way suggesting itself to them, for the benefit of the cities and populations they represent. Similar committees are established, so far as is practicable, with different agricultural societies throughout the United States. As these committees are composed of prominent men, resident at the places and in the districts they represent, and interested in whatever may benefit them, their formally stated opinions are of peculiar value.

"Such is the record, and such are some of the results, of the American Signal Service; but, great and illustrious as their achievements are, they are only prophecies of grander and wider results which are yet to be accomplished in the field of meteorological inquiry. What has been done here may be done everywhere; and with the development and expansion of the international work, as advised by the Vienna Congress of 1873, we may reasonably expect that before the close of the present century, all the nations north of the equator will enjoy, interchangeably, approximately accurate daily reports of

the meteoric conditions which distinguish each. This international work at present covers the territorial extent of Algiers, Austria, Belgium, Great Britain, Central America, Denmark, France, Germany, Greece, East Indies, Italy, Japan, Mexico, the Netherlands, Norway, Portugal, Russia, Spain, Sweden, Switzerland, Turkey, British North America, the United States, the Azores, the Bermudas, the Aleutian Islands, Sandwich Islands, West Indies, and South America—one uniform observation, of such a character as to be suited for the preparation of synoptic charts, being taken and recorded daily at stations in each of these territorial divisions. The average number of daily simultaneous observations so made in foreign countries is 293; while the whole number of stations from which reports are regularly entered in the bulletin is 463. Of these stations, 44 are on British territory, 43 in France, 23 in Germany, 23 in India, 33 in Italy, 27 in Russia, etc.

"The Signal Service is, as our readers see, one of the great triumphs of our century, destined, as time perfects experience and instruments, to be instrumental in anticipating and averting disaster in all parts of the country."

The benefit resulting to the shipping and navigation of the United States by the signal service is oftentimes very great. Cautionary storm signals are never disregarded at seaport towns and it almost invariably happens, as in the case of the ill-fated "Huron," that a vessel which is daring enough to brave the danger and go to sea in defiance of such a signal, meets with disaster.

The following are extracts from the valuable report of Professor Kingston, Superintendent of the Dominion Meteorological service:—

To the Honorable

The Minister of Marine and Fisheries.

SIR,—Having described in detail in former Reports the objects of our Meteorological System, it will be sufficient here to repeat in brief terms a statement of those objects, and to shew the extent to which they have been advanced during the year. The objects of the system are twofold:—

I. The collection of Meteorological Statistics (including the statistics of storms), and their arrangement in forms adapted for the discussion of sundry physical questions; the combination of materials collected in a series of years, and the deduction therefrom of the climatic character of different parts of the Dominion; and the furtherance of a knowledge of the facts and principles of climatology generally, and of Canadian climatology in particular.

II. The practical utilization of the facts and principles thus acquired, especially for the prognostication of the weather.

.....
Telegraph Stations.—There are fourteen stations in all, where observations are recorded and reported by telegraph to Toronto, three times a day, at 7.25 a.m., 4.25 and 10 50 p.m., Toronto mean time.

Publishing Telegraph Stations.—I. *Cautionary storm-signal stations.*—These stations (of which there are thirty-nine) are places to which

warnings of the probable approach of storms are sent, on receipt of which the agent in charge hoists a storm-signal, and posts a notice stating that a storm may be expected, and what places are warned.

Prognostication of the Weather.—The data on which predictions are based are received by telegraph three times a day from certain stations in the Dominion and the United States. The times at which these observations are taken are 7.25 a.m., 4.25 p.m., and 10.50 p.m., Toronto mean time.

The information contained in the reports consists of the following: The reading of the barometer reduced to a temperature of 32° Fahrenheit and to sea level; the reading of the thermometer; the relative humidity; the direction and velocity of the wind; the state of the sky, and, lastly, the quantity of rain or snow, if any. The morning reports contain a record of the minimum temperature recorded since last observation. Reports are now received from 41 stations in the morning, 31 in the afternoon, and 24 at night.

Storm warnings, based on the information above mentioned, are despatched to the various cautionary storm-signal stations throughout the Dominion; also, on the receipt of a storm warning from Washington, the warning is forwarded or not at the discretion of this office.

A warning is sent to any port whenever, in the opinion of the person whose duty it is to attend to the prognostication of the weather, it is considered that a storm will probably occur within a distance of one hundred miles, by water, of that port; so that when a port is warned, it is not intended to be understood therefrom that the storm will necessarily rage at that port; but it is intended to warn those connected with shipping that a storm will probably rage within such a distance that ships leaving port might be affected by it.

The importance of issuing the warnings as promptly as possible, has been shewn on former occasions. Out of the 510 warnings which were verified, 483 were issued in full time to give notice of a storm's approach. In only a few instances, owing to delay in telegraphic transmission, did they arrive after the commencement of the storm. At twenty-seven places the storm had begun before the warning was issued from Toronto; but in seventeen of these cases the storm continued to increase in violence after the warning was forwarded.

District.	No. Issued.					No. Verified.					Percentage Verified.				
	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Year.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Year.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Year.
Lakes.....	83	17	221	351	.....	18	26	188	262	.....	57.8	55.3	85.1	71.6	
St. Lawrence River and Gulf.....	13	.....	112	125	.....	9	.....	72	81	.....	69.2	.....	64.3	64.9	
Ocean.....	73	15	32	157	267	57	.....	5	105	167	78.1	0	22.7	66.9	62.5
Total.....	73	111	69	490	745	57	57	31	365	510	78.1	51.4	44.9	74.5	68.6

Reports have been received of nine storms for which no warning was issued. Five of these were purely local, and four more general. The above table gives the number of warnings issued for each quarter of the year, and for the whole year, and the percentage of their verification. The percentage in the St. Lawrence and ocean districts is low owing to lack of sufficient stations from which telegraphic reports are received. As regards the St. Lawrence, this fact was pointed out last year.

Telegraphing reports and stations are needed on Magdalen Islands, Anticosti, North Shore, Newfoundland, (and the proposed system would supply them).....

G. T. KINGSTON,

*Superintendent of Meteorological Service
Dominion of Canada.*

Dr. Fortin stated that he had written to General Myer and to Professor Kingston to know if results of observations taken at the meteorological stations that would be hereafter established on all the coasts and islands of the Gulf, by means of the projected telegraph system, would prove of service in the deduction of their meteorological forecasts. In reply he had received the following letters, which he read :

To the Hon. P. FORTIN, Representative in the House of Commons, President of the Quebec Geographical Society, Quebec, Canada.

SIR,—I have received and examined with much pleasure the papers and the chart you sent me.

I am always and everywhere in favor of the extension of sea-coast telegraph lines. The use of such lines on the coast of the United States has demonstrated their value, and we need only the money and the force to extend their scope.

The year just passed has been crowded with instances of their utility. Writing, as I do, from an office which converses, when needed, with wrecked ships anywhere on the coast from New York Harbor to Cape May, and from Norfolk to Smithville, with the memories yet fresh of the instances of the "Metropolis," the "Huron," and more recent disasters, it is hard to conceive that any one who thinks can fail to favor them.

I forward to you a copy of my annual report for the year ending June 30, 1877, in which you will find reference to this branch of the service. I will also forward to you, when printed, the report of the year 1878.

The chart you send me is beautifully illustrative and is already filed among our valued papers.

With many thanks for your courteous attention and many wishes for the success of your plans,

I am, with sincere respect and regard,

Very truly your obdt. Servant,

ALBERT F. MYER,

Brig.-Genl. (Brt. Assg.)

Chief Signal Officer of the Army.

War Department,
Office of the Chief Signal Officer,
Washington, Dec. 2, 1878.

Letter of Professor Kingston giving his views upon the proposed telegraphic extension, and its probable relation to the Signal Service of the country :—

TO HON. P. FORTIN, QUEBEC :—SIR,—In reply to your letter of the 29th ult., asking for my views regarding the proposed extension of the telegraphic system to the North Shore and to the islands of the Gulf of St. Lawrence, I beg to state that the benefit to be derived from this movement has been often before me and that some time ago I expressed myself in favor of such a scheme to the Dominion Board of Trade.

The proposed extension would be valuable to the Meteorological Service in a two-fold manner :—1st. It would enable us to receive additional reports by telegraph, on which to found our prognostications of weather in the Gulf of St. Lawrence and Nova Scotia. Reports from the North Shore would be particularly important in connection with prognostication, as at present we have no means of foretelling changes which are approaching from the North. If telegrams in connection with the Meteorological Service were allowed to pass over Government wires free of charge, as is the case in other countries, your scheme would extend the usefulness of the storm warnings by furnishing means for giving information of the approach of storms to all the lighthouses on the islands and on the coasts, and thence to passing shipping and fishermen.

I may further state that if the temperature of the sea water were systematically telegraphed to this office, from lighthouses on the coasts, it would furnish data by which, according to opinions expressed by recent writers, the probable arrival or departure of various kinds of fish might be foretold.

I hope I may soon be able to congratulate you on the completion of this important undertaking.

I am, Sir,

Your obedient Servant,

G. T. KINGSTON,

Supt. of Meteorological Service,
Dominion of Canada.

METEOROLOGICAL OFFICE,

Toronto, Canada, Dec. 9th, 1878.

The lecturer continued, explaining that there were three different methods of making signals to ships from a signal station. When there was sufficient wind to stretch them out, flags were used in accordance with the provisions of the International Code, but when there was no wind, balls and pendants had to be used. A better system than either was the use of semaphores, which are now extensively used in France, Spain, and which are beginning to be used in England and elsewhere.

On application to the French Government, while he was Speaker of the Legislative Assembly, the honorable gentleman had received, for the use of the Parliamentary library in this city, a descriptive book of instructions upon the semaphore system, with charts and plates, which he laid before the meeting. The semaphore consists of a high mast with arms upon each side which are moved with chains and cranks

from below, and when placed at certain angles, and in certain relations to each other, represent ciphers which indicate the names of ships or constitute the words of a message, according to the International Code, the books of which are translated in the languages of all civilized nations. At St. Malo, in France, the lecturer witnessed the working of a semaphore in 1868, and described to the meeting how the signal man in the course of a very few minutes received a signal from a passing vessel in the roadstead, and transmitted it in reply a telegram which was waiting its master from the owner, ordering it to Antwerp to unload. So that this vessel coming from a distance had been able to get an order from her owner in the space of about fifteen minutes, without anchoring, without sending a boat ashore, paying ship's dues, &c., &c. He did not desire immediately the adoption of the semaphore system in this country, but thought that at first the service might be performed with balls and pendants. The lecturer said he had been going down the river and Gulf of St. Lawrence for twenty-seven years and he would tell how things were there as regards signalling. While there were a number of lighthouses in the Gulf and Lower St. Lawrence, there was only one, so far as he knew, (Father Point), where a vessel might signal herself and receive signals in return. Not even at Cape Rosier the most projecting point on the south coast, and where there is a lighthouse that has cost perhaps \$100,000, can this be done, though Norwegian vessels, accustomed to this elsewhere, had frequently remained in front of the lighthouse giving signals but receiving none in reply. He had been told by the keeper of the Bird Rock lighthouse, that he could not signal and had no international code or signal book. This too was a situation where sometimes for two or three days together, and often much more, no landing could be effected by reason of the sea breaking upon the rock. He mentioned this to show how far this country was behind in this respect, and what had to be done to place our coasts on a par with those of Great Britain, Norway, France, and all civilized countries. The lighthouse keepers might be made to understand the system of signalling well, and to remain at their post ready to signal passing vessels or to receive signals from them.

"When the system recommended is in full operation, we will have at the projecting points of nearly all our sea coasts which lie in the track of vessels (as may be seen on the chart I have prepared and handed to the committee) telegraph stations, ready at all times to report any wrecks or accidents to shipping occurring in the vicinity of such a station, stating the circumstances and assistance required. With a steamer such as the "Napoleon," provided with a steel cable tow-line and other appliances for assisting wrecks, stationed at Gaspé Basin, which is nearly in the centre of the system for the Gulf and Lower St. Lawrence, that timely assistance so much needed by distressed crews, and of such importance in the saving of property in peril, would be rendered in most cases in twenty-four hours after the accident had occurred. On the coasts of Prince Edward Island, Nova Scotia and New Brunswick, the vessels stranded, or in distress, can be aided in about the same time. The semaphores, on the other hand, would be of great use in reporting the vessels passing at Gaspé, the

Bird Rocks, Cape North, Scatari, on Cape Breton Island, Cape Canso, Cape Sable and Briar Island, in the same way as it is done now at Father Point."

It appeared to him that money spent in building canals, deepening channels, improving harbors, &c., would not be profitably spent unless the navigation of the Gulf and Lower St. Lawrence was made as secure as possible, and the best and most complete means adopted of sending assistance to ships stranded or in distress.

A word on life saving establishments.

We have no life saving stations on the sea-coasts of the Dominion of Canada either kept up by the Government or at private expense; and he is not aware that any organization has ever been made at the lighthouses with a view to assist in a prompt and efficient manner, except on Sable Island, shipwrecked crews and passengers in the vicinity of lighthouses. It is true that there might be some boats there, but they are not life-boats, nor rigged nor equipped for the saving of life; and were they so rigged and equipped, there are, at several of the most important lighthouses, keepers totally unfit to manage a boat and to go to the assistance of the distressed sailors and passengers.

With the telegraph along all our sea-coasts, a life-saving system could be organized with competent lighthouse-keepers who could then render to a certain extent the same kind of assistance that is given so ably and so nobly by the life-boat service in England and other European countries and some ports of the United States.

Fancy the despondent ideas which are depressingly agitating the minds of the poor sailors and passengers who are in danger of being cast away on our shores during a tempest. If it were on the coast of England, they know that there are, at all the most important places, all kinds of appliances in readiness to help them and save their lives if possible. The telegraph will call for the needed assistance, and by-and-by the life-boat with its crew of heroic men comes in sight and extends them the succoring hand.

On the coast of Canada, principally on the deserted coast of Anticosti, part of the Magdalen Islands and the coast of Labrador, there is no organized assistance for the distressed mariner.

As had been well said by Mr. Cramp, the President of the Montreal Harbor Commission, "It was of no use making improvements in the upper waters of the St. Lawrence, and deepening the channel between Montreal and Quebec, unless the lower portion of the river and Gulf of St. Lawrence were equally well served." He also stated at the same meeting that as the representative of the Harbor Board of Montreal, that body would support Mr. Fortin's views. Going back again to the subject of our competition with New York for the carrying trade of the Great West, the lecturer referred to the 3, 4, 5, 6 and even 10 per cent. insurance rates sometimes paid on freight to Quebec, as compared with the 1½ or 1¾ paid on a similar cargo via New York sailing vessels, and acknowledged that he himself, if an insurer, would not care, as he knew the helplessness of ships in distress in the Gulf, to insure them for less than the present Quebec rates. Even their cargoes were not at all times in safe keeping for their owners. As an illustration, he alluded to the barque "Cameo,"

which loaded here last year with a cargo of the best oak timber, estimated at a value of \$16,000. The vessel having been wrecked upon Anticosti, the cargo was bought by the well-known firm of Messrs. Julien & Co., for the purpose of shipping it when brought back to this port to England. Mr. Julien had already sent for two schooner loads of the cargo which had been brought to Quebec, but in September, two strange schooners, supposed to belong to one of the Maritime Provinces, came to the ship, beat off her guardian, took forcible possession of the property and having loaded with the best of timber, made off with it for parts unknown. On account of the defective means of communication, a month elapsed before this strange fact for a civilized country was made known to the proprietor, Mr. Julien. Although that gentleman has used every means in his power to identify the thieves, by communicating with Collectors of Customs at various ports, his efforts have met with no favorable result. Had there been telegraphic communication, such as suggested by this project, it is likely this bold robbery would not have been attempted, and if perpetrated, telegraph news would have been sent all over the country to watch and detect the thieves, even probably before they could have entered their own port. If our ships and cargoes, for ships have been robbed in the same way as the cargo of the "Cameo," can be exposed to such robberies at our very door, how can we expect to bring down the rates of insurance at least on a par with New York; and without accomplishing that how can we expect to compete successfully with that port, which is only twenty-one miles distant from the Atlantic, while this port is distant 840 miles from Cape Ray.

The lecturer concluded by expressing his thanks for the attention manifested during his remarks, and solicited the assistance of the Quebec Board of Trade and of the merchants and shippers generally in carrying out the project which he was confident was fraught with so much importance not only to Quebec, but also to the whole world.

Hon. Dr. Fortin sat down amidst loud applause, having spoken for nearly two hours.

Mr. A. Joseph, President of the Dominion Board of Trade, said that the thanks of the meeting were largely due to the lecturer for the interesting address he had given them upon a subject which he had made a life study, and he therefore felt that all present would gladly acquiesce in the resolution he held in his hand. He then moved, seconded by James G. Ross, Esq.:

"That the thanks of this meeting are due to the Honorable P. Fortin, M.P., for his very able discourse on the subject of a more extended telegraphic communication in the River and Gulf of St. Lawrence, an undertaking which is of the greatest importance to the shipping and commercial interests, not only of Quebec, but of the whole Dominion."

Mr. James G. Ross was much pleased and gratified with the lecture, and hoped that good would result from it. He trusted to see more interest taken in matters relating to Quebec. Our commerce was decaying, and what little trade we had seemed to be going from us. He urged that the merchants of Quebec should oftener met and discuss matters affecting their common interests. There was the question of

the fisheries for instance, which to many people in Quebec was little more than a myth. Things had gradually come to such a pass that he trusted some change would shortly occur to prevent the loss of all our trade, and to furnish employment to our young men and thus keep them at home.

Hon. P. Garneau suggested that the Board of Trade should invite Hon. Dr. Fortin to be one of the delegates from this city to the Dominion Board, where he would meet the intelligent delegates from the Lower Provinces and be able to personally present his ideas upon this very important matter.

The President declared the vote of thanks unanimously adopted, and tendered the same to the hon. lecturer.

Hon. Dr. Fortin in reply, returned his thanks, for the compliment paid him, and with reference to the suggestion of Hon. P. Garneau, said that if necessary, he was prepared to go to Ottawa in any capacity whatever in support of his enterprise. He favored the carrying out of the whole system at once, with the exception of the Labrador line, which might be built afterwards. To ensure this the better, he suggested that a pamphlet be published, embodying extracts from the report of the committee of the House of Commons, testimonials and other statements in favor of the project, with the chart, which he considered the most important of all. This pamphlet should be distributed to Members of Parliament, Senators, Boards of Trade and the Press. With regard to the cost, he said that the land lines could be built as the Matane and Fox River line, by means of a Government subsidy paid once for all, while the building and working of the submarine lines would be secured by an annual subsidy.

With regard to the ways and means, he would say that part of the expense of the scheme could be taken from the fishery award, meaning that portion of it intended to benefit the fisheries. That award, he must say, for the twelve years' lease by the Americans of our fisheries, over an extent of 3,160 miles of coast, represented the dearest interests of the fishing population of the Dominion, and should be applied for the encouragement and development of the fisheries, in the manner best suited to supply the pressing needs of those engaged in that important industry, such as an effective system of protection of the fisheries, the building of piers, break-waters and other improvements to benefit the fisheries and the fishermen. He would not recommend the laying out of the capital, but the sum might go into the Treasury as a special fund, and the interest applied to the object above stated. The Americans do not seem very much inclined to renew a lease of our fisheries under the same conditions, since they paid under protest, and it might be that no treaty would be hereafter made for granting permission to the Americans to use our fisheries. In that case we would require a number of steamers to protect our fisheries by excluding the Americans from our municipal waters, and a large amount of money would be required for that object. It is therefore a wise precaution to have the means in readiness. It must be remembered that it was the giving up to the Americans of the Canadian fisheries from 1854 to 1860, that secured their reciprocity treaty, which was so profitable to the commercial and agricultural portion of the population

of the Dominion, while the Canadian fishermen received nothing in return, but the contested advantage of selling their fish in the States.

Dr. Marsden said he was convinced that the Government would do as requested in the matter so soon as the subject was represented to them.

The meeting then broke up about 4.15 P.M.

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MEMORIAL OF THE COUNCIL OF THE MONTREAL BOARD
OF TRADE.

OFFICE BOARD OF TRADE,

Montreal, Nov. 14th, 1878.

Hon. J. C. POPE,
Minister of Marine and Fisheries,
Ottawa.

SIR,—The Council of this Board have long had under consideration the very important question of connecting by telegraphic communication the Island of Anticosti and the Magdalen Islands with the main lines on the shores of Gaspé, Prince Edward Island, Capé Breton, &c.

This subject, which in the opinion of this Council is one of the most important that could engage the attention of the Government, was prominently introduced by the Hon. Pierre Fortin at a meeting of this Board, at which were present also members of the Harbour Commission. The details of his scheme, illustrated by a carefully prepared map showing the proposed routes to be taken, were fully developed and clearly explained by the honorable gentleman.

The Council feel that they cannot too strongly urge upon your Honorable self, as the specially appointed guardian of the shipping interests of the Dominion, the great importance of this subject, and in so doing would beg you to note that total and partial wrecks are of yearly occurrence on the Island of Anticosti, a list hereto appended giving the names and dates of twenty of the most disastrous that have happened since the year of 1860, twelve of which were entirely lost. One vessel mentioned on this list, the Royal Mail Steamer "North American," went ashore on the 26th of June, 1867, and remained there more than two weeks before tidings of the disaster reached Quebec and Montreal, the passengers and crew meanwhile living in tents or huts on the Island. In other cases vessels have been cast ashore late in the fall and supposed to have been lost with all on board, but the following spring the survivors of their crews were found on the Island, and they have proved that had it been possible to have made known the situation of their vessels in time, all could have been saved, many of them remaining ashore but slightly injured for five or six days, and afterwards broken up by storms. It may suffice to particularize one other instance: the steamship "Lake Megantic," of the Beaver line, left Quebec on the morning of the 20th July last, and at midnight of the 22nd went ashore on Anticosti, seven miles east of its southern point; there were some eighty souls on board, and a cargo valued at about \$200,000; fortunately a small and unseaworthy schooner was found at the south point, on board of which the Captain of the Steamer and a few of his crew embarked on the 26th, reaching Gaspé, after a perilous voyage, on the 29th July, from whence the owners were telegraphed. It is of course well known to you that this fine steamer, valued at about \$300,000, became a total wreck. Additional

instances might be cited of vessels becoming totally lost that in all probability could have been saved by timely assistance, the money value of any one of which was greater than the estimated cost of the proposed telegraphic scheme.

The premium of insurance on outward and inward bound cargoes in the fall of the year forms a very serious item against exporters and importers by the River St. Lawrence, frequently operating as an effectual bar to shipments by this route, but there is every reason to believe that provided with such ready means of succor in the event of disaster as would be secured through the proposed telegraphic system, marine risks would be so far diminished that rates of insurance would decline, and thus the country would be benefitted far beyond any probable cost of the telegraphic scheme.

The Council, in conclusion, would say that they earnestly hope that the subject which they now have the honor to lay before you, may engage the early attention of the Government, and they trust that the commercial community may see this important work placed under construction at the earliest possible date.

I have the honor to be,

Sir,

Your obedient Servant,

(Signed,)

HENRY LYMAN,

President.

LIST of principal wrecks of Ocean Vessels on the Island of Anticosti since 1860.

Lord Warrish.....	wrecked Dec. 11, 1860.
Commerce.....	" May 2, 1861.
Neva.....	" May 29, 1863.
James Glasson.....	" Sept. 16, 1863.
Able Seaman.....	" April 12, 1864.
Ship Shard.....	" Aug. 5, 1865.
S. S. North American.....	" June 26, 1867.
Tadousac.....	" Nov. 4, 1867.
Tanari.....	" July 25, 1870.
Clutha.....	" Sept. 25, 1870.
Russia.....	" Dec. 6, 1870.
Lake Huron.....	" Nov. —, 1871.
Tadmor.....	" May 5, 1872.
Royal Charter.....	" May 5, 1872.
Barque Agda.....	" Aug. —, 1872.
Ship Shandon.....	" Oct. 9, 1874.
Barque Northumbria.....	" Nov. 6, 1877.
S. S. Lake Megantic.....	" July 22, 1878.
City of Manitowac.....	" Aug. 19, 1878.
S. S. Vindolana.....	" Aug. 20, 1878.

Of the above, twelve were total wrecks.

[COPY.]

MEMORIAL OF THE COUNCIL OF THE QUEBEC BOARD OF
TRADE.

OFFICE OF THE QUEBEC BOARD OF TRADE,

Quebec, 28th December, 1878.

SIR,—On behalf of the Council of the Quebec Board of Trade, I beg to address you on the subject of telegraphic communication to Anticosti and other Islands in the Gulf and River St. Lawrence, and on the north shore to Forteau; an undertaking of the greatest importance to the shipping and commercial communities of the Dominion.

It would be needless here to detail at length the disasters and enormous losses which have taken place during the past decade, through wrecks on the Island of Anticosti, and in the Lower St. Lawrence, many of which it is supposed would not have occurred had a general system of telegraphy existed, but the Council cannot refrain from laying before you the desirability of adopting measures in the establishment of some such comprehensive system of telegraphic connection as that proposed by the Honorable P. Fortin, as will tend to lessen marine losses, ensure greater safety to life, and improve the navigation of our great waterway.

Respectfully praying that the foregoing subject may receive your serious consideration.

I have the honor to be,

Sir,

Your obedient Servant,

(L.S.)

(Signed,)

JOSEPH SHEHYN,

President.

To HON. J. C. POPE,
Minister of Marine & Fisheries,
Ottawa.

COAST TELEGRAPH CHART

OF THE

GULF

AND

LOWER ST. LAWRENCE

AND

MARITIME PROVINCES

DELINEATED UNDER THE DIRECTION

OF

Hon. P. Fortin

by

L. N. DUFRESNE,

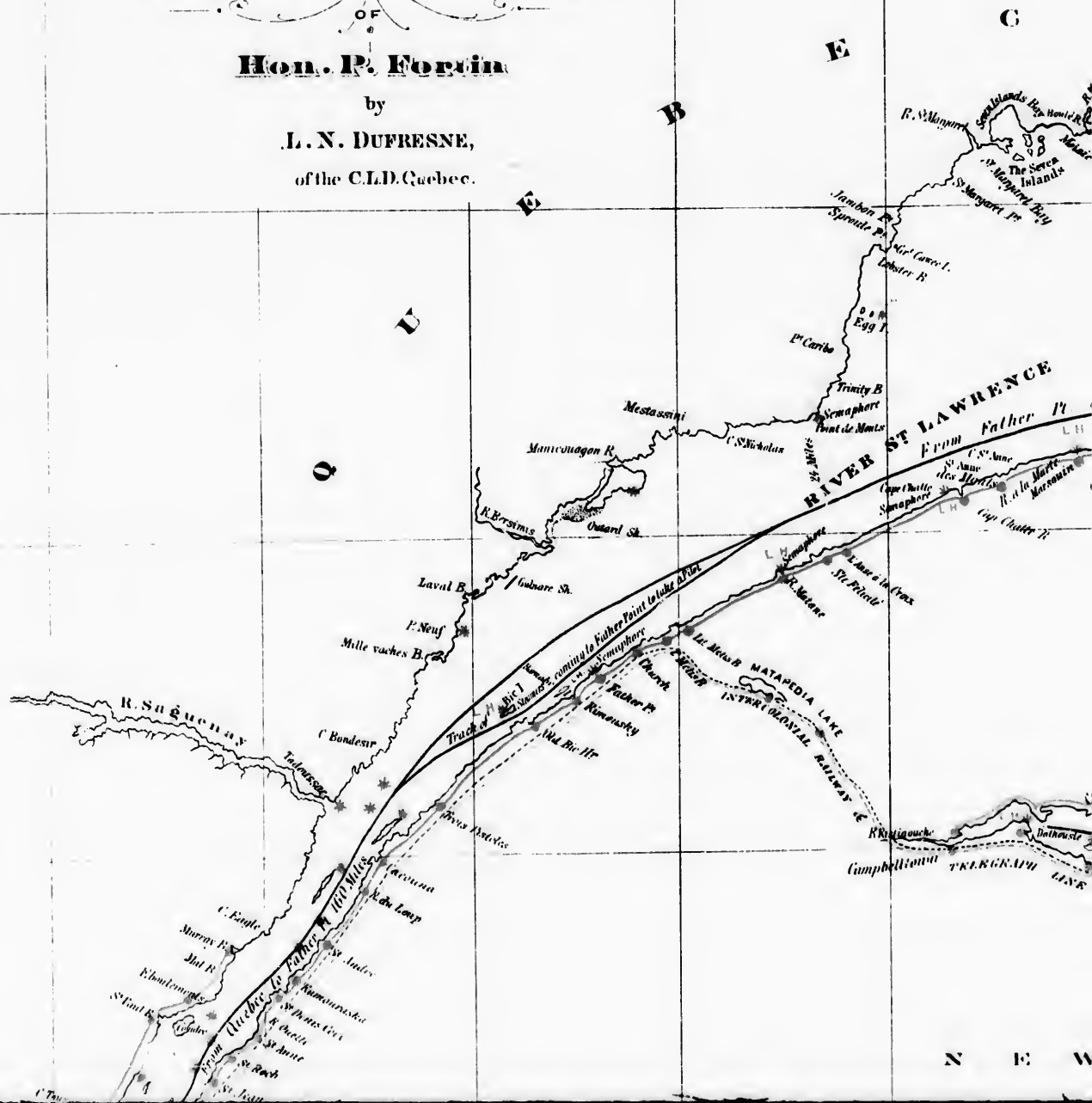
of the C.L.D. Quebec.

51°

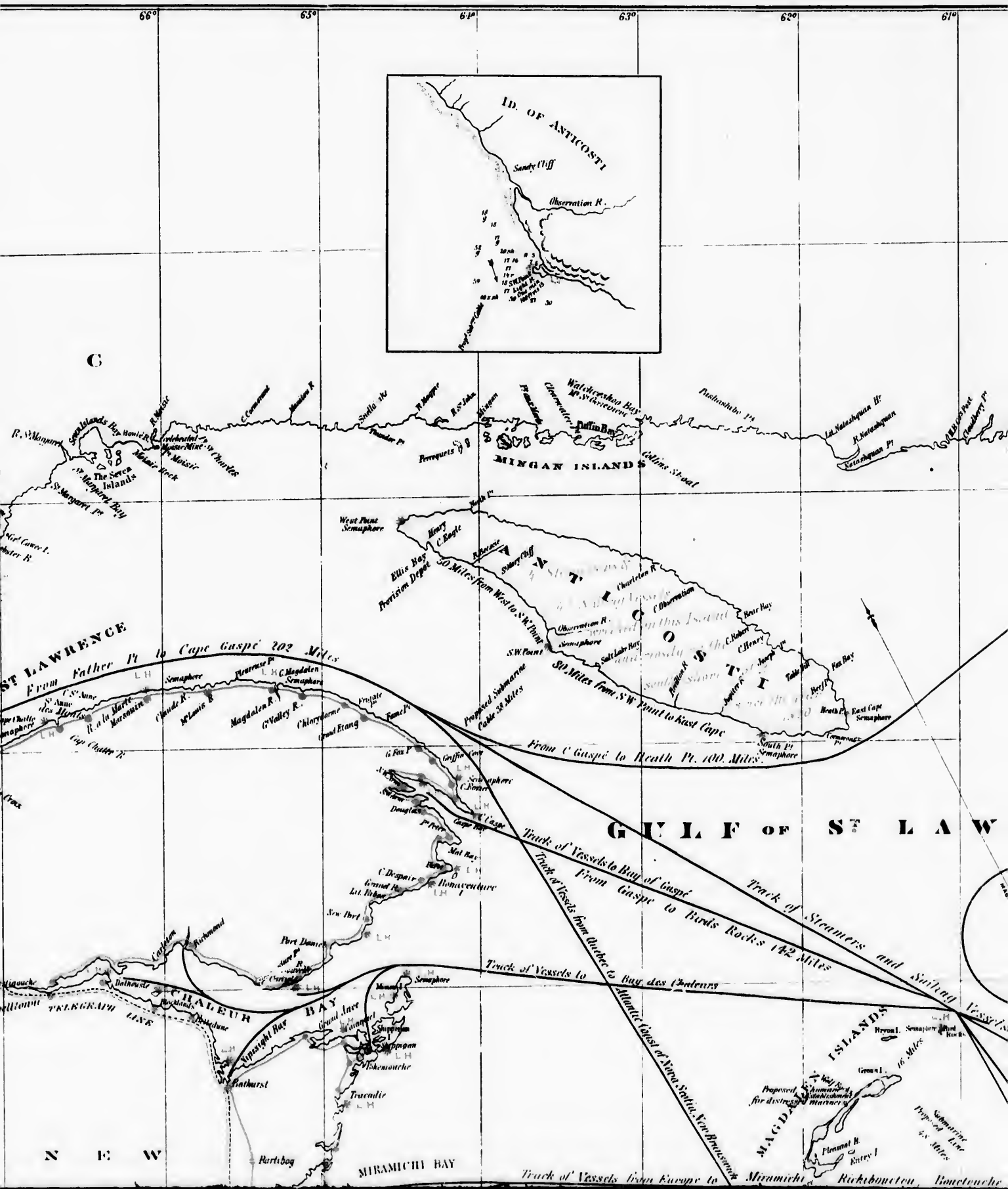
50°

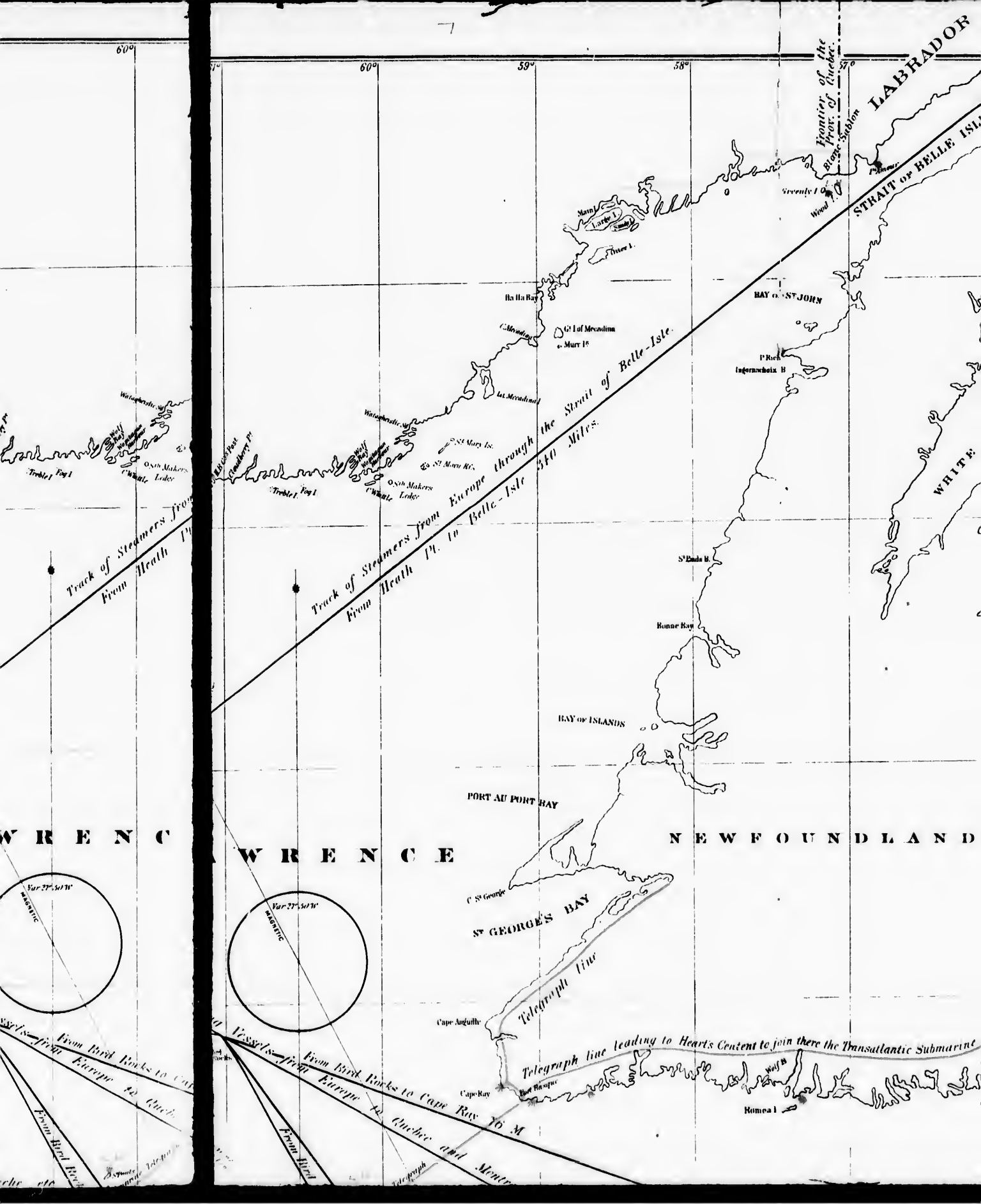
49°

48°



N E W





60°

60°

59°

58°

57°

Frontier of the Prov. of Quebec.

LABRADOR

STRAIT OF BELLE ISLE

BAY OF ST. JOHN

P. Rich Ingersholm B.

S. B. M.

Bonne Bay

BAY OF ISLANDS

PORT AU PORT BAY

C. St. George

ST. GEORGE'S BAY

Cape Angilly

Cape Ray

Romea I.

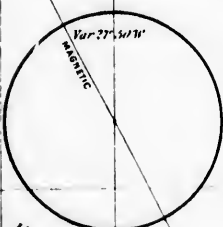
Track of Steamers from
From Heath Pt.

Track of Steamers from
From Heath Pt. to Belle-Isle 340 Miles.

W R E N C

W R E N C E

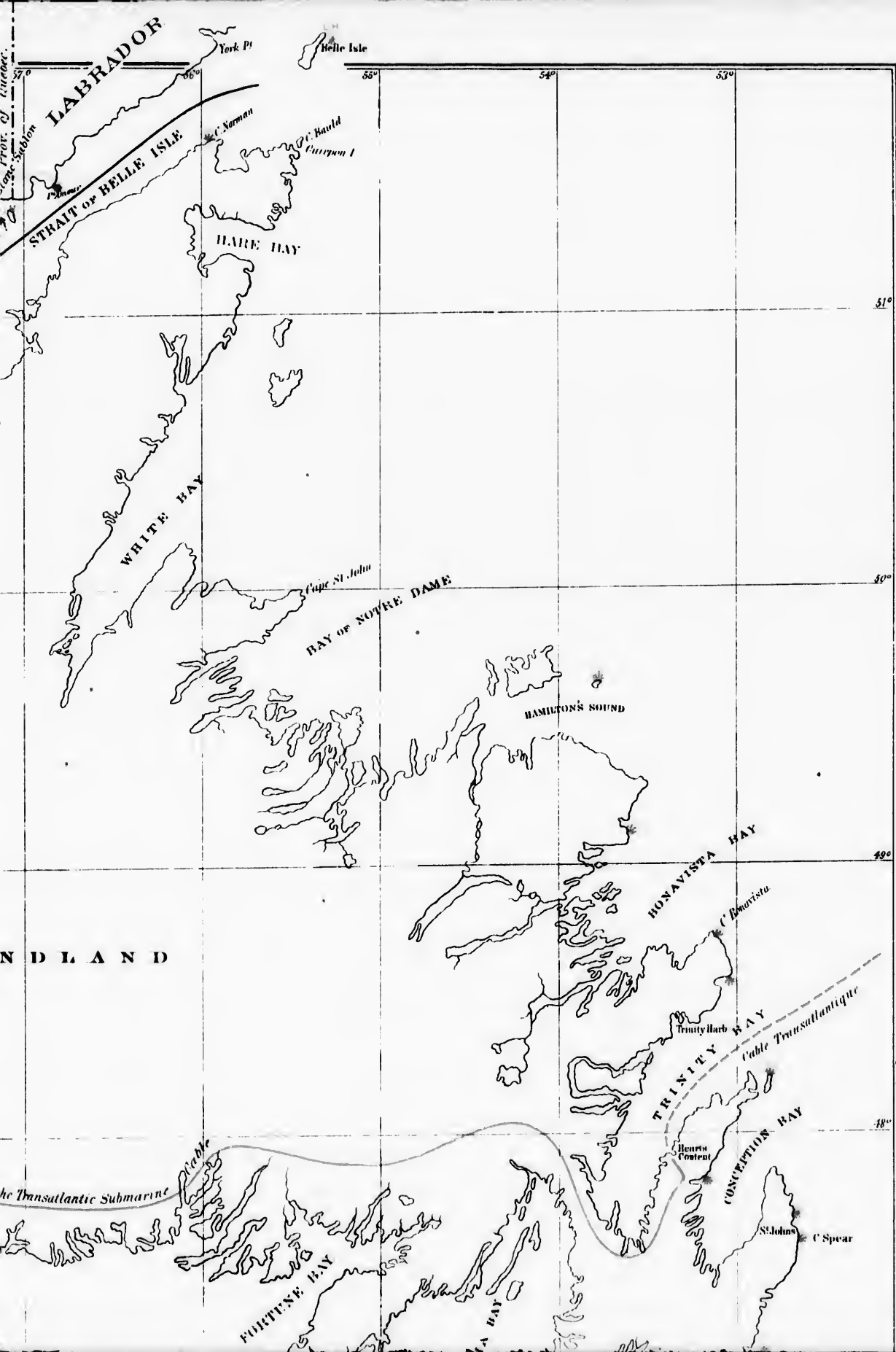
NEWFOUNDLAND



From Bird Rocks to Cape
From Bird Rocks to Cape
From Bird Rocks to Cape
From Bird Rocks to Cape

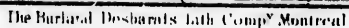
From Bird Rocks to Cape Ray to M
From Bird Rocks to Cape Ray to M
From Bird Rocks to Cape Ray to M
From Bird Rocks to Cape Ray to M

Telegraph line leading to Heart's Content to join there the Transatlantic Submarine

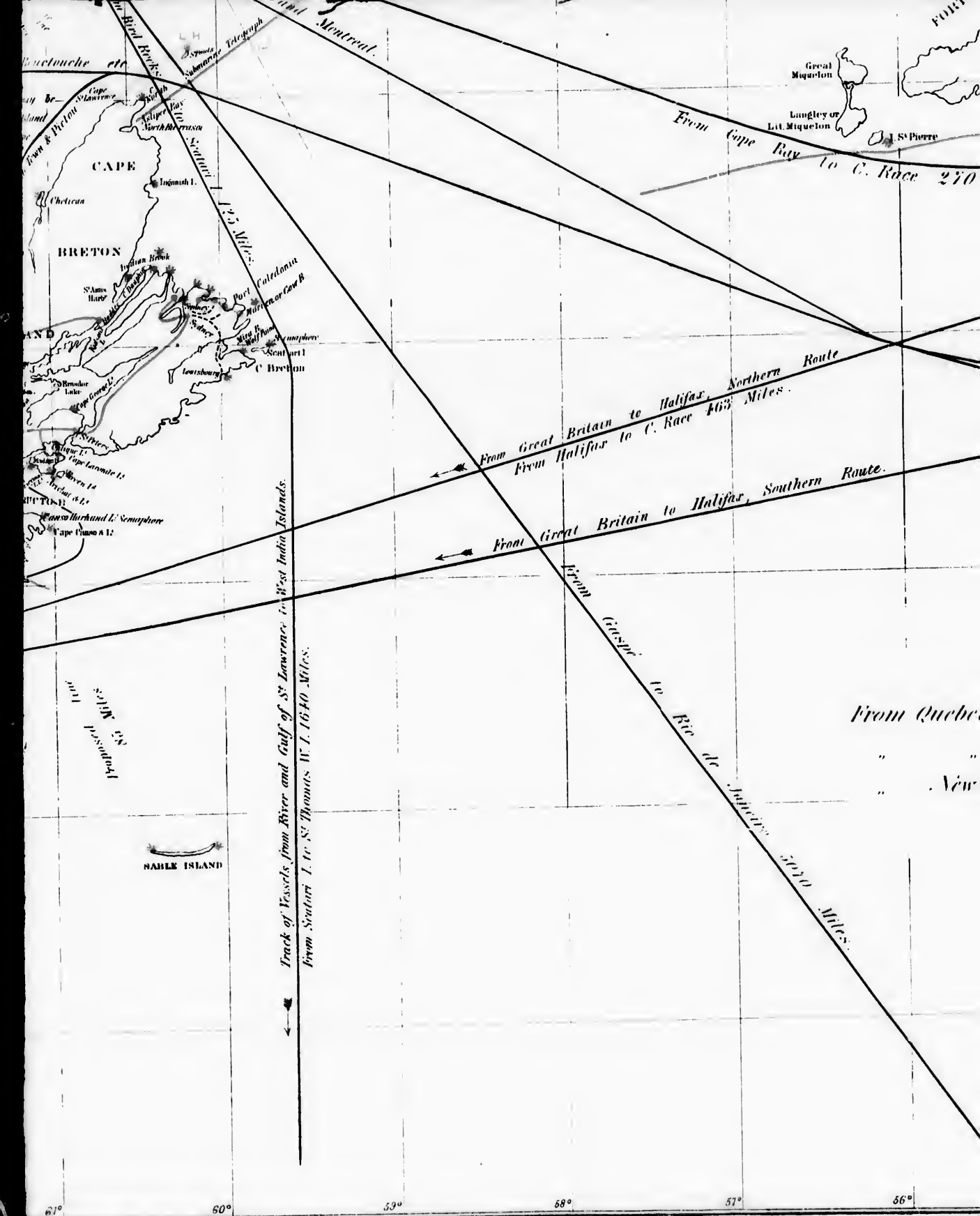


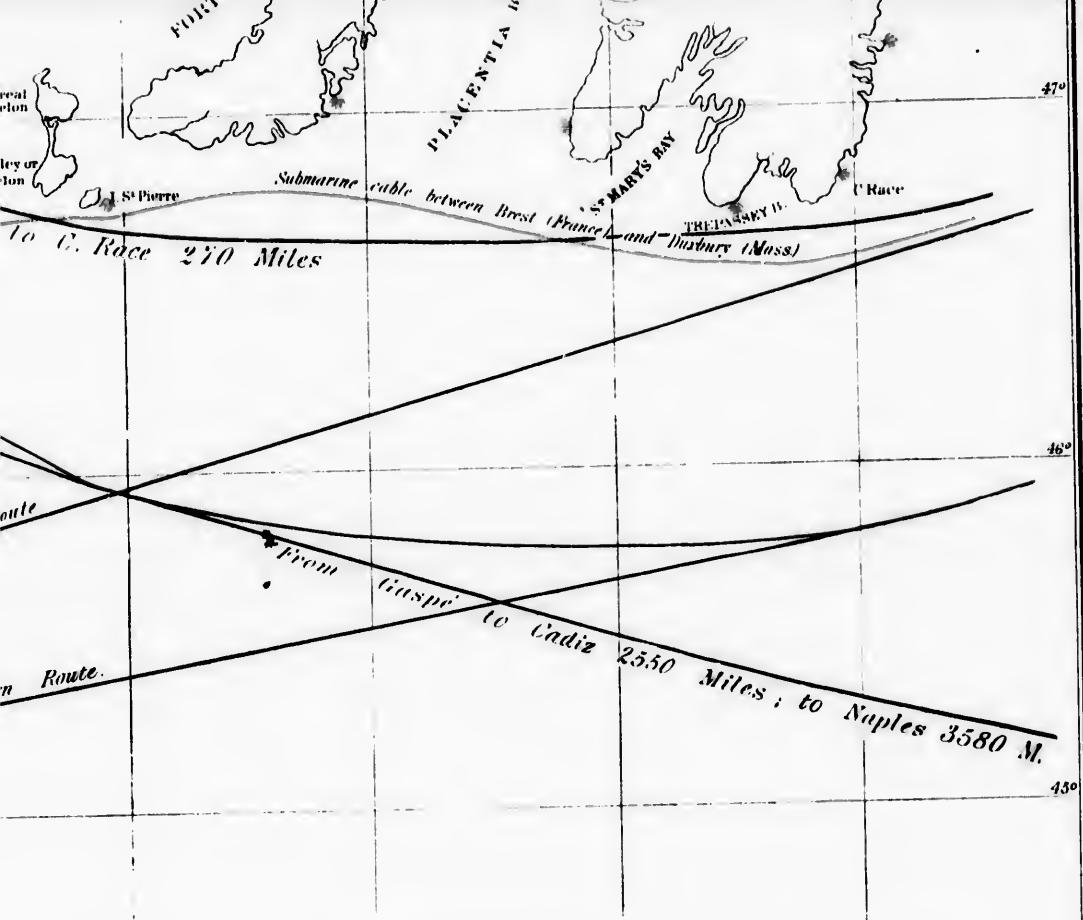
B R U N S W

NAUTICAL MILES









Distances:

	<i>Miles.</i>
<i>From Quebec to Liverpool via Strait of Belle Isle</i>	<i>2650</i>
<i>" " " via Cape Race</i>	<i>2850</i>
<i>" New York to Liverpool</i>	<i>3040</i>

