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*Public Works Department of Canada*

*with written compliments*

*June 11 1880*

A MINORITY REPORT *St. John*

ON THE

PROPOSED BAIE VERTE CANAL,

BY

J. W. LAWRENCE.

1876.

SAINT JOHN, N. B. :  
DAILY TELEGRAPH STEAM JOB PRINT.

1876.

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## INTRODUCTION.

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At the close of the evidence on the proposed "BAIE VERTE CANAL," at the request of my colleagues, I fully stated what I considered should be the leading features of the report.

When the draft was submitted, I took exception to it because of important omissions, as well as to portions of its contents. Failing in effecting all the changes I regarded as essential, I voted against its adoption, at the time stating I would prepare a "*Minority Report*," (one of the Commissioners adding "It was perfectly proper I should do so,") for I felt that the Government has a right to know the impressions entertained by *all* at the close of the inquiry.

The *Minority Report* has been printed in St. John, enabling me thereby to attend to the correction of proof. The mechanical execution of the work does no discredit to the Maritime press.

The evidence and report have been printed at Montreal.

J. W. LAWRENCE.

Saint John, N. B., January, 1876.



A MINORITY REPORT  
ON THE  
PROPOSED BAIE VERTE CANAL.

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To the HON. RICHARD W. SCOTT,  
*Secretary of State for Canada.*

Sir,—

On the first day of July last the following was received from your department :

" OTTAWA, 28th June, 1875.

SIR,—

I am directed to inform you that the attention of His Excellency the Administrator of the Government has been drawn to the propriety of appointing a Commission to investigate the nature and extent of the commercial advantages to be derived from the construction of the Baie Verte Canal, to connect the waters of the Bay of Fundy and the Gulf of St. Lawrence, and that His Excellency has been pleased to authorise the appointment of such a commission.

The commission will be required to consider and report on the following subjects :

1. The distance from the St. Lawrence, via the proposed Canal to the Great Sea Ports of South America and the West Indies, and the Ports along the United States coasts, as compared with the route by the Straits of Canso or round Cape North.
2. The extent of the existing trade with these Ports and its probable prospective increase.
3. Whether it is probable that any or what portion of the Coal Trade from the Northern coast of Nova Scotia and Cape Breton, or the Southern coast of Newfoundland will be likely to seek an outlet by the proposed Canal.
4. The size of the vessels that might fairly be expected to trade through the proposed Canal, and whether sail vessels, or steam vessels will be on the same comparative footing as on the existing routes by the mouth of the Gulf.
5. The nature and extent of the Local Trade affecting only the coasts of the Bay of Fundy and the North coasts of New Brunswick and Prince Edward Island.
6. The nature and extent of the difficulties which might be encountered in getting into and out of the Canal on account of the extremely high tides in the Bay of Fundy.

I am further to state that his Excellency has been pleased to appoint the Honorable John Young, of the City of Montreal, Chairman of the Commission, and to associate with that gentleman, for the purposes of the proposed investigation, The Honorable W. P. Howland, C. B., of Toronto, Peter Jack, Esq., of Halifax, and yourself.

I am to add, that it is considered advisable that the Commission should visit Halifax, St. John, Charlottetown, Quebec and Montreal, and such other places as may seem desirable, and take such evidence at each of those places as may enable them to gather carefully the opinions of the commercial community and especially of Captains and Sailing Masters of vessels as to the commercial value and advantages of the proposed canal.

I have the honor to be, Sir,

Your obedient Servant,

[Signed]

EDWARD LANGEVIN,

*Under Secretary of State."*

July the First, the Commission opened at Montreal. Meetings were afterwards held at Charlottetown, Summerside, Newcastle, Chatham, Bathurst, Campbellton, Pictou, Halifax, Amherst, Sackville, Gloucester, Mass. Montreal, Quebec, Baie Verte, and St. John. Witnesses were examined from Digby, Windsor, Moncton, and Hillsborough.

Differing with my colleagues on the Commission, I feel that I should fail in the discharge of my duty did I not submit to the Government the conclusions I have reached as "to the nature and extent of the commercial advantages to be gained from the construction of the Baie Verte Canal."

Before doing so, a brief recital of the early and later movements in connection with the work will be of interest, as for over half a century it has occupied more or less of public attention, and has been most favorably reviewed by the first commercial men of the Dominion.

One of the early movements in favor of the Canal, took place at the City of St. John, August 9th, 1822, when the following gentlemen were appointed a committee to get a survey of the Isthmus, viz: Hon. Ward Chipman, Hugh Johnston, Thomas Millidge, Thomas Heaviside, Charles Simonds, and Laughlan Donaldson.

To that duty Robert Minette, C. E., was assigned, and at once entered on the work. His report was so satisfactory, that it was followed by Sir Howard Douglas, Lieutenant Governor of New Brunswick, appointing Francis Hall, C. E., to make a further survey. This gentleman, in 1825, reported on a line from Shediac to the Bend of Petitcodiac, also, on one from Shediac via Memramcook River to Dorchester, and on a third, across the Isthmus from AuLac at the head of Cumberland Bay to Tidnish at Baie Verte, with a recommendation in favor of the last.

Mr. Hall suggested that the Canal should begin three and a half miles up the AuLac, and terminate two miles from the mouth of the Tidnish, to have a depth of 8 feet water on the sills, with 21 feet width at bottom and 45 feet at top. His estimated cost was \$298,000. If made  $4\frac{1}{2}$  feet in place of 8 feet, the cost would be reduced to about \$198,671. The length of the Canal would be 15 miles.

THOMAS TELFORD, C. E.

Sir Howard Douglas submitted the report of Mr. Hall to Thomas Telford, the celebrated English Engineer of that day. He recommended a Canal of 30 feet at bottom, and 72 feet at water surface in



deep cuttings, but 45 feet bottom, with 95 feet water surface elsewhere. The depth on sills to be 13 feet with locks 40x150 feet. Mr. Telford's estimated cost was \$682,952.

#### CAPTAIN CRAWLEY, R. E.

In 1838, the Chamber of Commerce of St. John memorialized the Government of New Brunswick to obtain further surveys. This eventuated in the appointment of Capt. Crawley, R. E., at the joint expense of Prince Edward Island, New Brunswick, and Canada. He reported for a Canal 45 feet wide at bottom, with 85 feet at water surface; the depth to be 9 feet on sills, with locks 40x150 feet. The difficulty with him was the water supply.

#### NOVA SCOTIA AND THE CANAL.

About this time the Legislature of Nova Scotia passed an Act authorizing the Lieutenant Governor to incorporate such persons as were willing to build the Canal. The time allowed was ten years.

In 1867 the Legislature of that Province again took steps towards the prosecution of the work, by incorporating a number of gentlemen to build the Canal, limiting them to five years.

From this date a new impulse was given to a project which had for some years lain dormant.

#### THE SENATE AND COMMONS OF CANADA.

In the following year the Senate and Commons of Canada passed an address to His Excellency the Governor General, praying "that copies of all documents and surveys relative to the construction of a Canal connecting the waters of the Gulf of St. Lawrence with those of the Bay of Fundy, may be procured from the Governments of Nova Scotia and New Brunswick and submitted to the Minister of Public Works for his report thereon, to be laid before Parliament at its next session.

In compliance with the above address, the Secretary of State forwarded to the Department of Public Works papers containing plans, surveys and reports relating to the proposed Canal, all of which were submitted to Mr. Page, Chief Engineer, for his examination.

#### MR. PAGE, CHIEF ENGINEER.

May the 7th, 1869, Mr. Page reported "He was of opinion that an abundant supply of water could be obtained by adopting a lower level." In the following year he was instructed to have further surveys made; to that duty G. F. Baillairge, C. E., was assigned.

#### A CANAL COMMISSION.

In 1870, the Government of Canada appointed a Commission to

report on the Canal system of the Dominion, as well as on "The construction of a Canal through the Isthmus dividing the Bay of Fundy, from the Gulf of St. Lawrence at Baie Verte."

The Commission reported in favor of a Canal with 15 feet on water sills, and 100 feet bottom, with locks 40x270. They divided the works reported on by them into *four* classes, in the *first* of which they say "we have placed all those works which it is for the general interests of the Dominion should be undertaken and proceeded with as fast as the means at the disposal of the Government will warrant."

It is noteworthy as shewing the estimate held by the Commission of the Baie Verte Canal that it was placed in the *first* class.

The gentlemen delegated with this trust, as is apparent from their report, brought to the discharge of their duties, *research* and *fidelity*. On their suggestions the Government is now acting, in the enlargement of the St. Lawrence and Welland Canals.

G. F. BAILLAIRGE, C. E.

In 1872, Mr. Baillairge reported favorably on a Canal with 15 feet water sills, 100 feet bottom, and locks 40x270 feet. The Western entrance to be at AuLac near the mouth of that river. The Eastern entrance to be near Tidnish Head, Baie Verte.

MESSRS. KEEFER AND GZOUSKI.

In 1873, the above gentlemen reported on a Canal via La Planche to Baie Verte at an estimated cost, for 15x100 feet, of \$5,317,000.

The reports on the Canal culminated December, 1873, with Mr. Page's recommendation for the AuLac and Tidnish route, on the following estimates:

Half Tide Canal,.....	\$7,700,000
Three Quarter " .....	8,100,000
Full Tide " .....	8,500,000

Before going into the questions submitted to the present Commission, there are two points of an "incidental" character growing out of these figures which may be introduced here, figures which occupy an important place in the evidence, and generally adverse to the Canal.

#### WILL THE CANAL PAY ?

The propriety of the inquiry may fairly be questioned, for what public work pays? Yet it has been often asked will the Canal pay? Before this point can be determined, the prior one, what will it cost has to be settled. On that point there is a wide divergence of opinion, between Telford, Keefer and Page, which will never be decided until the work is offered to competition.

In the Canadian *Hansard* for 1875, is the following: "If it is possible to execute the work, at prices corresponding somewhat with Mr. Keefer's estimate, which was originally \$3,500,000, and subsequently \$5,000,000, it might be a very considerable advantage to do so."

There are numbers unfriendly to the work at \$8,000,000, who would regard it favorably could a Canal be constructed for \$5,000,000.

Francis Giles, one of the leading Engineers of his day, declared the building of a Railway across the "Chat Moss Bog," next to impracticable, or if built, it would cost \$1,350,000. On the other hand, George Stephenson declared it not only practicable, but carried it out for \$140,000, or a little over *one tenth* of Giles' estimate.

With the aid of the labour saving machines of the day, not unlike those at work deepening the channel through Lake St. Peter, between Quebec and Montreal, lifting up 250 yards per hour of the bed of the St. Lawrence, a sum *greatly less* than \$5,000,000 should construct a *full tide Canal*, adequate for all the ends of commerce across the Chignecto Isthmus, uniting thereby the waters of the Bay of Fundy and the Gulf of St. Lawrence.

HENRY Y. HIND, M. A., OF WINDSOR, NOVA SCOTIA.

That the waters of the Gulf and the Bay of Fundy at one time met, there is no room for doubt.

If a navigable river existed between these places to day, none would question but it would be largely followed.

Professor Hind's suggestion of opening up the "old water course," and securing thereby a tidal communication, in place of constructing a Canal, merits attention, especially from an economic stand point. Whether it would be proved (if traceable) too tortuous and unnecessarily long, is a question. Or whether from the long lapse of years it has been closed, it would not be as expensive to open, as a more direct channel, is a point for consideration.

If a channel was opened on the AuLac and Tidnish route of the proposed Canal, with a breadth of 70 feet bottom, and with a depth for 12 feet draught, it could be tested as a tidal river, and if found to answer, could, if required, be enlarged. Should it be found not to serve the ends of commerce as well as a Canal, there would be no loss, as the work done would all be required. The suggestions, therefore, of Professor Hind might be acted on in part with advantage, and that without any delay to the work.

The tidal highway will possess one of the prerequisites which Stephenson regarded as indispensable to make the Suez Canal a suc-

cess, viz., a tidal action to secure to it a scouring. It will also, at daily intervals, have throughout a uniform level.

#### THE MARSH LANDS OF THE ISTHMUS.

Much of the Marsh Lands of the Isthmus, at present have but little value; the opening of a channel, either as a tidal river or for a Canal, would enable them to be drained, adding to their value, in the opinion of Mr. Hind, \$100 per acre, in all over One Million and quarter of Dollars.

Richard Thompson, Esq., one of the leading amateur farmers of New Brunswick, drained a portion of his farm at Lancaster, St. John County, at a cost of \$100 per acre, and found it a highly profitable investment.

Mr. Page, in his report, has not overlooked the value to the marsh lands, from the opening of a Canal, for he says, "the elevation of the water level is such as will admit of the marshes being perfectly drained, and the arrangements proposed will guard against private property being inundated in the valley of the Tidnish."

#### IS THE CANAL PRACTICABLE?

Whatever may be the supposed difficulties of opening the Canal, the Engineers are all agreed, there are none that cannot be overcome.

The Welland Canal, the Bridging of the St. Lawrence and the Suez Canal, at their inception, all met with strong opposition. The Welland Canal has been built and to-day is undergoing a second enlargement. The St. Lawrence has been bridged at a cost of \$6,300,000, although once regarded as a work not only impolitic but impossible. To-day a charter is sought for the construction of another bridge in sight of the present one.

The opposition to the Suez Canal was such as to claim more than a passing notice.

#### THE SUEZ CANAL.

This Canal was projected by Napoleon in 1798, when in command of the French army in Egypt. Some years after a Commission was appointed to report on its practicability. The Red Sea being found *thirty feet lower* than the Mediterranean, the report was in consequence adverse to the work.

In 1830, another examination was made of the country, resulting again in a report unfavorable to the Canal; but from a different cause, the two seas were this time found to be of *uniform level*.

Sixteen years later, Robert Stephenson in company with a French

and Austrian Engineer, carefully examined the route ; their report was opposed to a Canal, as from the two seas being on the same level, it could not, they alleged, be kept open, as scouring from either end was impracticable.

The last time Stephenson addressed the House of Commons, it was to caution his countrymen against investing in the proposed Canal.

1st. Because of the impossibility of keeping it open, except at an enormous expense.

2nd. Because it would not be long used, as there would not be traffic sufficient to pay its working expenses, and would prove a commercial failure.

3rd. Because of the difficulties of *approaching* the Canal. "The moment," he said, "you construct a harbour at Port Said, and project piers into the sea, you immediately arrest the course of the mud, and will never be able to keep the port open. It would be the most extraordinary thing in the world to project two jetties into an open sea on a lee shore, which has for almost three months in the year, a North-east wind blowing upon it. There is no seaman, except in fair weather, who would venture to approach such a place."

The objections of Stephenson to the Suez Canal are not unlike those which the Baie Verte Canal is contending against.

#### HAVE HIS PREDICTIONS PROVED TRUE ?

On the 27th November, 1869, the Canal was opened, when the "Brazilian," a ship of 1809 tons, passed through. In 1870, 491 vessels used the Canal, and in 1871, 765 of the aggregate tonnage of 1,000,000. In the month of February, 1873, the receipts from the Canal were £73,640 stg.

From the report of the British Consul at Port Said, for 1874, in that year, "1,649,188 tons of shipping passed through the Canal, of which 1,209,612 was under the British flag, being over 70 per cent. of the whole." The Consul adds, "the traffic is steadily augmenting." Tolls received 1870, \$1,001,865 ; 1871, \$1,798,735 ; 1872, \$3,281,525 ; 1873, \$4,679,465 ; 1874, \$4,971,875.

If anything further is required to show the value of the work, and the *short sightedness* of a *far-seeing* man, the following will suffice. The "London Times," of November 26th, 1875, says :

"It has reason to believe, that the British Government has bought of the Khedive of Egypt, four millions pounds worth of shares of the Suez Canal Company, viz., 177,000 out of the 400,000 shares into which the capital of the Company was divided."

Of the purchase, the New York "Tribune" says :

"If England did not make a penny—nay, if she got no interest at all, the advantage of having a decisive voice in the management of the Canal would

be worth to her many times the cost of her investment. The gross receipts for 1874 were nearly \$5,000,000, with a market value of 38 above par."

Through the adverse representation of Robert Stephenson, with whose name some of the great works of the age are inseparably connected, to France fell the honor of carrying to completion and success the grandest work of our time. The promptitude of England's purchase and the general approval of the act unmistakably show that a great mistake was made in not being identified with the work at first; fortunately, circumstances of an exceptional character, have enabled her to right herself, first in the Khedive being necessitated to sell, and secondly, in the unwillingness of France to buy.

There is so much that is parallel in the history of the inception of the Suez and proposed Baie Verte Canals, that the reference to the former may be studied by all to advantage.

The Government having submitted six questions for the consideration of the Commission, they will now be examined in detail. All are subordinate to the leading enquiry "as to the nature and extent of the commercial advantages to be derived from the construction of the Baie Verte Canal."

"*Question 1.*—The distance from the St. Lawrence via the proposed Canal to the Great Sea Ports of South America and the West Indies, and the Ports along the United States coast, as compared with the route by the straits of Canso or round Cape North."

FROM	VIA CAPE NORTH.	VIA CANSO.	VIA CANAL.
	<i>Nautical.</i>		
Montreal to Montevideo,.....	6,445 miles.	6,429 miles.	6,479 miles.
“ Rio Janeiro,.....	5,330 “	5,319 “	5,369 “
“ St. Thomas,.....	2,513 “	2,439 “	2,449 “
“ Havana,.....	2,598 “	2,504 “	2,406 “
“ New York,.....	1,519 “	1,459 “	1,314 “
“ Boston,.....	1,302 “	1,279 “	1,104 “

If there are any who suppose the construction of the Canal would shorten the voyage from the Gulf Ports to South America, a glance at the map, independent of the table of distances, will dispel the illusion.

The Government hold no such views, for at the last session of Parliament the Premier justly stated "the cruise of the gulf was chiefly to South America, the West Indies and Europe, and he had no doubt whatever in his own mind, that that trade would seek an outlet by the ordinary channels now pursued by vessels." The ad-

vantage to the West India and South American trade from the construction of the Canal, would be largely indirect and incidental.

"Question 2.—The extent of the existing trade with these ports and its probable prospective increase."

EXPORTS from *Ontario* for the year ending 30th June, 1874, of its Growth, Produce and Manufactures :

To the British West India Islands,.....	\$6,785 00
" " Spanish " " " .....	629 00
" South America,.....	26,409 00
	<hr/>
	<u>\$33,823 00</u>

EXPORTS from *Quebec* for the year ending 30th June, 1874, of its Growth, Produce and Manufactures :

To the British West India Islands,.....	\$255,197 00
" " Spanish " " " .....	2,192 00
" South America,.....	967,615 00
	<hr/>
	<u>\$1,225,001 00</u>

EXPORTS from *Prince Edward Island*, for the year ending 30th June, 1874, of its Growth, Produce and Manufactures :

To the British West India Islands,.....	\$29,587 00
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EXPORTS from *New Brunswick*, for the year ending 30th June, 1874, of its Growth, Produce and Manufactures :

To the British West India Islands, .....	\$ 63,612 00
" " Spanish " " " .....	459,556 00
" " French " " " .....	2,380 00
" South America, .....	77,375 00
	<hr/>
	<u>\$602,923 00</u>

EXPORTS from *Nova Scotia*, for the year ending 30th June, 1874, of its Growth, Produce and Manufactures :

To the British West India Islands,.....	\$1,603,752 00
" " Spanish " " " .....	783,994 00
" " French " " " .....	369,629 00
" " Danish " " " .....	62,809 00
" " Dutch " " " .....	3,869 00
" British Guiana,.....	177,756 00
" Other Islands,.....	140,214 00
" South America,.....	16,543 00
	<hr/>
	<u>\$3,158,566 00</u>

IMPORTS into *Ontario*, for the year ending 30th June, 1874, and entered for consumption from South America and the West Indies :

From the British West India Islands,.....	\$ 50,264 00
“ “ Foreign “ “ “ .....	181,506 00
“ South America,.....	20,067 00
	<hr/>
	<u>\$251,837 00</u>

IMPORTS into *Quebec* and entered for consumption :

From the British West India Islands,.....	\$395,563 00
“ “ Foreign “ “ “ .....	543,888 00
“ South America,.....	452,486 00
	<hr/>
	<u>\$1,391,937 00</u>

IMPORTS into *Prince Edward Island* and entered for consumption :

From the British West India Islands,.....	\$19,652 00
“ “ Foreign “ “ “ .....	22,832 00
	<hr/>
	<u>\$42,484 00</u>

IMPORTS into *New Brunswick* and entered for consumption :

From the British West India Islands,.....	146,090 00
“ “ Foreign “ “ “ .....	174,426 00
	<hr/>
	<u>\$320,516 00</u>

IMPORTS into *Nova Scotia* and entered for consumption :

From the British West India Islands,.....	\$413,067 00
“ “ Foreign “ “ “ .....	463,258 00
“ South America,.....	152 00
	<hr/>
	<u>\$876,477 00</u>

EXPORTS for the year ending 30th June, 1874, of the Growth, Produce and Manufacture of *Canada* to the *United States* :

From Ontario,.....	\$19,609,089
“ Quebec,.....	5,299,219
“ Nova Scotia,.....	2,425,182
“ New Brunswick,.....	1,247,364
“ Prince Edward Island,.....	193,571

IMPORTS for the year ending 30th June, 1874, into *Canada*, and entered for consumption from the *United States* :

By Ontario, .....	\$31,694,999
“ Quebec,.....	12,703,967
“ Nova Scotia,.....	3,581,722
“ New Brunswick,.....	3,894,484
“ Prince Edward Island,.....	394,803



The probable prospective increase is asked in question Two. As it refers more especially to the West India and South American trade, the following from the Report of the Commission, appointed to enquire into the trade with those countries, will show what a rich field is open to Canadian enterprise :

	IMPORTS 1864.	EXPORTS 1864.	POPULATION.
British West Indies,.....	\$ 28,866,408	\$ 31,678,539	• 1,115,028
Spanish “ “ .....	139,922,207	171,412,100	1,999,651
Independent “ “ .....	11,706,665	10,975,000	1,150,000
Other West India Possessions, ....	13,000,000	13,000,000	420,000
Brazil,.....	61,522,937	64,735,350	10,045,000
	\$255,018,217	\$291,800,989	14,729,679

The West India Commission say “the argument naturally follows that the trade of British America with countries so commercially active, having so considerable a population, whose products are different from ours, yet as necessary to us as ours to them, ought to increase from its present magnitude, viz., \$3,727,862 of Imports, and \$4,670,653 of Exports to several times the amount.”

In 1875, the *St. John Globe*, writing on the same subject says :

“There is no reason why, with energy and watchfulness, Canadian produce should not be able to secure a comparatively large and profitable share of the West India and South American trade. The United States sends annually to the British West Indies alone from ten to fifteen millions worth of their goods and to the other West India Islands and South America, wares to the value of sixty millions more. The field is a tempting one to Canadian enterprise. In many classes of goods we should be able to supplant the American producer, because of the cheapness of labour here, and the facilities which we possess for producing many classes of goods used in the southern portions of America and now furnished by the United States.”

The probable prospective increase of the trade between Canada and the British and Foreign West India Islands is partly met in the above, but more fully in the following from a carefully prepared paper read before the Dominion Board of Trade, at its first Annual Meeting, 1871, by its president :

“It would be difficult to point out all the advantages which would result to Prince Edward Island, Nova Scotia and New Brunswick by the construction of the Baie Verte Canal. If the 900 ton propeller could deliver Western or Canadian products at Halifax or St. John, these places would become cheap depots for such products. Assorted cargoes of fish, hoops, shooks, lumber, &c., would be made up at these ports for the West India Islands and South America, and could bring back return cargoes from these countries of sugar,

coffee, hides, tallow, &c., to be again re-shipped as return cargoes to Canada and the United States by the inland propeller and thus delivered at less cost by such means than by any other possible route."

From the above views of the Montreal delegates, the following conclusions are arrived at:

1. All the advantages to the Maritime Provinces that would follow from the opening of the Baie Verte Canal "would be difficult to point out."
2. The 900 ton propeller could deliver Western products at Halifax or St. John.
3. These places would become cheap depots for such products.
4. Assorted cargoes could be made up at these places for the West Indies.
5. From the West Indies return cargoes would be brought to St. John and Halifax.
6. The 900 ton propeller would pass through the Baie Verte, St. Lawrence and Welland Canals, with tropical products for the Western States, Ontario and Quebec.
7. These products consequently "would be delivered at less cost than by any other possible route."

The Dominion Board of Trade was so strongly impressed with the importance of the Canal, that it adopted the following resolution:

*Resolved*,—That in the opinion of this Board, it is desirable that the Dominion Government be recommended to construct at as early a day as possible the Baie Verte Canal.

#### NEW YORK ALBION.

As far back as 1827, the New York *Albion* wrote:

"Would not the Mother Country grant a sum in aid of the Baie Verte Canal, since it would make St. John an excellent depot for articles of prime necessity in the West Indies? If once opened, the produce of Canada, Prince Edward Island, the coast of Labrador, and that of her own soil, would concentrate at the Capital of New Brunswick, it would be equally the mart for return cargoes of West India Produce."

The agreement in sentiments between the President of the Dominion Board of Trade, 1871, and the New York *Albion* of 1827, is as striking as the views are reasonable.

#### THE CANAL COMMISSION.

The Canal Commission, 1871, says: "The Ontario and Quebec merchants can supply the firms of St. John interested in the West India trade, with the description of merchandise for which there is an ever ready and remunerative market in the tropics, and in that same way get back sugar, molasses, and other West Indian and South American produce, which is now supplied indirectly to so large an extent through the United States."

In the enquiry as to the probable prospective increase of trade with the West India Islands and South America, the views of the

authorities cited above must carry great weight. In their opinion, if Canada is to build up a British and Foreign West India trade for her Western products, she must have Maritime depots.

The Baie Verte Canal is regarded by them as indispensable to the extension of the commercial relations of Canada with the British and Foreign West India Islands.

The construction of the Canal should not be dependent on the extent of the existing trade between the Dominion and these Islands, but on the trade which the Canal will create.

While the total imports of the Islands and Brazil in 1864 was over \$255,000,000, of that only \$3,727,862 was from Canada. In 1874, ten years after, while the trade of the Dominion in all its departments had greatly increased, its exports to these places were less than in 1864.

The construction of the Canal, if the opinions given are to be regarded as entitled to any weight, is imperatively demanded in the interests of the trade and commerce of the country.

All the reasons urged for its construction before the enlargement of the Welland and St. Lawrence Canals was accepted as the policy of the Government, exist to-day.

When Telford reported favorably on the proposed Canal, it is true there were no railways in America, and only one, the "Darlington" line, in England. Yet it is not the less true when, in 1871, the Dominion Board of Trade and the Canal Commission, composed almost entirely of Western representative men, urged the construction of the Baie Verte Canal on the Government, all the existing lines of Railway between the West and the Atlantic were open, in course of construction or incorporated.

"Question 3.—Whether it is probable that any, or what portion of the Coal trade from the Northern coasts of Nova Scotia and Cape Breton, or the Southern coasts of Newfoundland, will be likely to seek an outlet by the proposed Canal?"

If tables of distances are to have any weight in determining the question, whether the Canal will be used, the following will show that more or less of the "coal trade" will pass through it, not only from Pictou to St. John and the United States, but from the Bay of Fundy coal fields to the Gulf Ports, as well as to Quebec and Ontario.

	Via Cape North.	Gut Canso.	Canal.
From Pictou to St. John,.....	560	480	170
" " " Boston,.....	690	600	440
" " " New York,.....	930	750	660
" Windsor to Montreal,.....	1330	1250	820

	Via Cape North.	Gut Canso.	Canal.
From Parsborough to Montreal, .....	1310	1220	790
“ Hillsborough “ .....	1315	1235	760
“ Joggins Coal Mine to Montreal, .....	1210	1240	750
“ St. George Newfoundland to St. John,.....	620	630	394
“ “ “ “ Boston,.....	712	720	66½
“ Fortune Bay “ “ St. John,.....	669	768	500

The Spring Hill, Joggins, and the Albertine Coal Beds belong to the Bay of Fundy, also, the Windsor and Hillsborough deposits of Gypsum, these with the Steel Works at Londonderry, Colchester, on the Minas Basin, are waiting for the Western markets, by the opening of the Baie Verte Canal.

The Albert Mining Company, this year, paid 12½ per cent. on its capital of \$250,000. Considering the state of Mining Companies at the present time, the great value of its productions will be understood.

The Spring Hill Coal Company can ship either at the mouth of the Canal, distant by the Intercolonial Railway 25 miles, or by the Parsborough Railway at Minas Basin.

The Joggins Coal Beds are in Cumberland Bay, within 25 miles of the mouth of the Canal.

The coal fields of the Bay of Fundy are inexhaustible, and for steam purposes are unsurpassed.

#### WILL THE PICTOU COAL FOLLOW THE CANAL ?

One Pictou witness says, “only a very small portion of the coal trade will pass through the Canal, in consequence of ice which forms in the Fall and holds on in the Spring, at these seasons the passage would be taken by the Straits of Canso.”

If this statement is correct, it shows that for the greater portion of the season of navigation the Canal would be followed, and the Canso route only taken at the opening and close of navigation.

That the Canal will secure the Fall trade of the Gulf there is but little doubt, as the navigation of the Gut at that season is extremely dangerous, which is fully established by the table of Insurance rates, to which attention will be called.

#### THE BAY OF FUNDY RICH IN OTHER MINERAL WEALTH.

A late issue of the *Halifax Chronicle* says, “the most important enterprise now being carried on in Nova Scotia, and perhaps the most important in the Dominion, is that of the Steel Company of Canada, at Londonderry, Colchester County.

The Company is composed of a few English capitalists incorporated both in this Province and in England, with a capital of two and a half million of dollars.

In October, 1873, the Company purchased the Acadian Iron Mines, Londonderry, for the purpose of engaging in the manufacture of steel rails, &c. Operations were commenced in the summer of 1874, and have since been vigorously carried on. In addition to the purchase price of the property, the Company have already expended about half a million dollars in prospecting and raising ore; in the erection of two large blast furnaces, for the making of coke pig iron; in building two rotators, and a melting furnace with regenerative gas producers, for the making of steel from the ore, by Simens' direct process. The Company hold the patent right in Canada, and the inventor, Mr. Simens, is their Chairman. The Company own about fifty square miles of the County of Colchester.

The works of the Steel Company of Canada, already take high rank among the greatest mining and manufacturing concerns in the Dominion. Yet they are only in their infancy, small when compared with what the Company propose to make them ultimately. It is expected by next August, the Company will be able to supply the Canadian market with coke pig iron, for foundry purposes at prices that will defy competition.

The Company will proceed to erect rolling mills and shops capable of producing all the steel rails required in Canada, and large quantities for exportation to the United States."

Londonderry, the head quarters of the Company, is only two miles from Minas Basin, Bay of Fundy. A vessel can enter and leave the wharf with 13 feet draught at half tide. Steel rails for the West can be delivered at any point on the lakes through the Canal without breaking bulk, at greatly less cost than by any other route.

#### THE BAY OF FUNDY PLASTER BEDS.

The same is true of the products of the plaster beds of Hillsborough and Windsor. Mr. Tomkins the manager of the former, has furnished valuable information in reference to them.

The export of Gypsum Rock from these places is about 120,000 tons per annum of the value of \$110,000 in its crude state, this is shipped to the United States and there ground one half into 420,000 barrels of Calcined Plaster worth \$420,000, the remaining 60,000 tons is ground into 360,000 barrels of Land Plaster worth \$216,000,

making \$636,000 against \$110,000, or a difference of \$526,000 per year, and giving employment to about 1000 workmen.

From the evidence of Mr. Tomkins it appears, 5000 barrels of ground plaster were shipped this year to Montreal, part in vessels round the Nova Scotia coast and through Canso. It is a noteworthy incident that on their return voyages, with cargoes of flour, the one was driven ashore between Canso and Halifax, the other between Canso and Pictou, where they will remain until the opening of navigation. Both vessels are owned in St. John. Their owner says, that had the Canal been open, they would have used it, and not only escaped the casualty which befel them, but could have made two voyages. By the Gut of Canso the distance from Hillsborough to Montreal is 1235 miles, by the Canal only 745. It is singular that the two vessels with the first shipments of Plaster from the Bay of Fundy to Montreal, should on their return have passed the Baie Verte entrance of the Canal in safety, and afterwards met with disasters. If the Canal was opened a large market for plaster would be found in the West, much that is shipped from the Bay of Fundy to New York is there ground and sent to the Western States for farming purposes. Here we see a Maritime industry as yet in its infancy, capable of great expansion. One ton in rock worth less than one dollar, the same manufactured worth six dollars.

The mineral resources of the Bay of Fundy are great, abounding in Iron Ore, Gypsum, Granite, Free Stone and Coal. For all these there is a growing demand in Quebec and Ontario, as well as the Western States. These are all bulky articles, and to them the Canal is a necessity.

If the Western merchant can deliver Western products by rail, or water and rail, the products of the Bay of Fundy can only be sent back by all water with any profit.

One object of the Canal is the development of a trade reciprocally beneficial, through the interchange of the products of the East, for those of the West.

#### NEWFOUNDLAND AND THE BAY OF FUNDY.

Between Newfoundland and the Bay of Fundy there is no trade. Fortune Bay to St. John, via Cape North, is 660 miles, by Canso 768, by the Canal only 500, while from St. George to St. John, the manufacturing centre of the Bay of Fundy, via Cape North or the Gut, is over 620 miles; by the Canal it would be under 400. St George will be the Western terminus of the Newfoundland Railway. The

opening of the Canal would soon create a community of interests where none at present exist.

“Question 4.—The size of the vessels that might fairly be expected to trade through the proposed Canal, and whether sailing vessels or steam vessels will be on the same comparative footing as on the existing routes of the Gulf?”

Of the six questions submitted to the Commission, the above is second to none, as it will determine the size of the Canal. If found that one less than 15x100 feet will answer, millions of dollars will be saved to the country.

The American fishing vessels that frequent the Gulf, are from 80 to 100 tons burden, and when loaded have a draught generally of 10 feet.

A company was incorporated to build and sail propellers for the carrying of coal from the Spring Hill mines. Their draught loaded was to be eleven feet. The intention was to send them to the Gulf ports through the proposed Canal, as well as to the United States. In the Winter they were to be sent to the West Indies. A number of those Islands, like some of the Gulf ports, have bar harbors that will not admit of vessels of greater draught.

The International Steamers running from St. John to Boston, are of the following draught and tonnage :

New Brunswick, loaded,	.....8 feet 9 in.	935 tons,
City of Portland, “	.....9 feet 6 in.	1025 “
New York, “	.....9 feet 6 in.	1100 “

A class of vessels that might be expected to use the Canal are three masted schooners, vessels of large carriage and cheaply worked. For the carriage of lumber, coal, West India or Western produce, they are admirably adapted, as the following will show :

Moss Glen, 195 tons register, capacity under deck 2000 barrels, or 300 tons of coal.

Draught in ballast,	..... 6 feet.
“ with flour,	.....10 “
“ “ coal,	.....11 “

Fredrick E. Scammell, 234 tons register, capacity under deck 2300 barrels, or 391 tons of coal.

Draught in ballast,	..... 6 feet.
“ with flour,	.....10 “ 6 in.
“ with coal,	.....11 “ 6 “

Tonnage of large capacity is not always dependent on draught. A propeller called “Her Majesty,” shortly after the Confederation of the Provinces, ran between Toronto and Halifax; it carried 7000 barrels of flour, yet only had a draught, loaded, of 10 feet 6 inches.

## THE 1870 CANAL COMMISSION.

This Commission say : " The largest class of screw steamers, which must originate as one of the results of improving the inland navigation, can also in the autumn proceed to the lower ports, and thence to the West Indies, where it is quite possible, for them to find employment during the Winter season, instead of laying up five months in the year in Upper Canadian Ports."

## A NEW VOICE FROM THE DOMINION BOARD OF TRADE.

The President of the Dominion Board of Trade at its 1874 meeting, spoke with great emphasis :

" I tell you gentlemen we are not true to Confederation, if we do not have these Canals enlarged, because the facilities for trade, thus created, would form a stronger tie between the Provinces than any political one. If we could pass up our Canals, vessels large enough to bring coal, and iron and other products from the Maritime Provinces, which they would give in exchange for our products, instead of sending up money for all their purchases we would do more to make them all thoroughly Canadian and united with us, than could be done in any other way."

The Toronto delegate who uttered the above finds no difficulty in forecasting the effect of the enlargement of the Canals on the transportation between the Lake ports and the Maritime Provinces, nor does he share in the opinion that the 12 feet propeller would not find it profitable to continue her voyage down the St. Lawrence and through the Canal into the Bay of Fundy. The Toronto Board of Trade, four years before, advanced the same views ; they said : " We are satisfied that by the deepening of the Canals, the trade with the Maritime Provinces would be carried without breaking bulk, from the lakes to the ocean, creating thereby a reciprocity of interest, and connecting our several provinces more closely."

The Maritime propeller of 12 feet draught could pass through the Baie Verte, St. Lawrence and Welland Canals, and deliver its cargo from the Bay of Fundy ports, without breaking bulk, at Montreal. For the trade between the Maritime Provinces and the Lakes, large vessels cannot compete with those of lighter draught, as the cost of transshipment with its delays, would be greater than any possible saving in freight in larger tonnage.

The Montreal Merchant understands the drawback from breaking bulk ; it is this that has led to the deepening of the channel through Lake St. Peter.

Freight from the Bay of Fundy, and other Eastern shipping points, for Lake and other Western ports, should reach its destination in the vessel in which first laden.



### THE TORONTO CORN EXCHANGE.

“Reciprocity of trade,” says the Toronto Corn Exchange, “upon which we must count as the only basis of legitimate commerce, and the one great means of uniting the Provinces, in the strong bonds of mutual interest, remains undeveloped and will continue so until our water communication shall have been permanently established on such a scale as to induce the building of vessels suitable at once for the Lakes, the Canals and the Ocean.”

#### IS THERE A TRADE BETWEEN THE BAY OF FUNDY AND THE UPPER PROVINCES ?

The following are the quantities and value of goods imported into St. John from Quebec and Ontario, via Grand Trunk Railway to Portland, and Western Extension :

1865.....	\$ 247,374
1866.....	301,556
1871.....	1,898,223
1872.....	2,374,393
1873.....	2,544,600
1874.....	3,241,795

This is independent of what reached St. John via the Gulf and the Shediac Railway. Until the Baie Verte Canal is opened, the products of the Bay of Fundy cannot find their way to the West; consequently there is no reciprocal trade; the Maritime Provinces for what they purchase, have, as the Toronto delegate stated, to send up money.

#### AN INCONTROVERTIBLE POSITION.

The Canal Commission in their Report, 1871, say :

“The growth of Intercolonial trade depends on cheap transit, since the merchandise passing between the Maritime Provinces and Ontario, must be of a bulky character, requiring large vessels and rapid dispatch to be really profitable. When a propeller can go direct with a cargo of coal or other products of the Eastern Provinces, to Kingston and Toronto, and there get a return freight of flour, barley and other Western products, International trade will have entered on a new era.”

At the meeting of the Dominion Board of Trade (1874) the Hon. T. R. Jones said :

“I may state that ever since trade has sprung up between the Upper and the Lower Provinces, at all events since Confederation, we have great difficulty in getting through freight to the Maritime Provinces. During this year I have had goods delayed on the road, between Montreal and St. John over six weeks.”

Mr. Jones expressed the hope that the building of the Megantic line would secure more speedy transit. Yet with all the drawbacks

to the development of a trade between the Lower and the Upper Provinces, the importation of St. John by Western routes has increased from \$247,874 in 1865 to \$3,241,795 in 1874.

If in these few years there has been such a development of trade, with everything adverse to its growth—a trade in no way reciprocal, who can tell the dimensions it will attain after the opening of the Canal, permitting the bulky products of the Bay of Fundy Ports, to find a market in the West?

#### WATER VERSUS RAIL.

If there are any who maintain that the trade between the Bay of Fundy ports and the West, can be carried by rail or water and rail, as cheap as by all water, the following table will dispel the illusion. Those who advance such views know little of the economies of transportation. The following tables, from a report of 1858, on the Harbour of Montreal, and republished in 1873 by the Montreal Board of Trade, are instructive and conclusive, and as illustrating the point involved, most opportune:

From Chicago to New York via Buffalo and the Erie Railway—

	Sailing Vessel.	Steamer.
Chicago to Buffalo, <i>water</i> , 914 miles,.....	\$1 83	\$4 20
Buffalo to New York, <i>rail</i> , 414 “ .....	6 66	6 66
Transshipment at Buffalo,.....	20	20
	<u>\$8 69</u>	<u>\$11 06</u>

From Chicago to New York by the Welland, St. Lawrence, Caughnawaga and Champlains Canal—

	Sailing Vessel.	Steamer.
Chicago to New York, <i>all water</i> , 1632 miles,.....	\$3 26	\$5 71 ✓
Toll on a 167 miles of Canal,.....	50	50
	<u>\$3 76</u>	<u>\$6 21</u>

	Sailing Vessel.	Steamer.
Water and Rail via Buffalo from Chicago to New York, .....	\$8 69	\$11 06
All Water, via Caughnawaga, .....	<u>3 76</u>	<u>6 21</u> ✓

Saving by River and Canal over Water and Railway, \$4 93      \$4 85

Nothing but a want of reflection, or what is worse, a determination to defeat the Baie Verte Canal, could lead any one to suppose for a moment the Canal could not compete with established routes, for its water stretches in proportion to Railway are much shorter than the Caughnawaga.

If the Baie Verte Canal will be unable to compete with established routes, why the enlargement of the Welland and the St. Lawrence

See Young. 1876 Canal by J. C. Smith also make St. L. + Welland 1879

Canals? And why in the "draft treaty" was provision made for the construction of the Caughnawaga, with such a magnificent railway system open all the year parallel to the Canals?

While the Canal Commission of 1870 placed the Caughnawaga in class *three*, the Baie Verte Canal was placed in class *one*. Had the Commission looked at their relative claims from a sectional, in place of from a Dominion stand point, the position assigned might have been different, for nearly all the gentlemen were residents of Quebec and Ontario. Testimony from such a source, as to the comparative value of the two works, is entitled to very great consideration.

#### THE CANAL NATIONAL IN CHARACTER.

At the first annual meeting of the Dominion Board of Trade, a paper was read by its President, entitled "Internal Navigation and the effects of the Canal system of the Dominion on the general commerce." In it is the following:

"If the Baie Verte Canal is possible of construction, the work will be highly important, and in its results of a *truly national character in all its aspects*. The city of St. John, N. B., as well as other places in the Bay of Fundy, would be brought 430 miles nearer Montreal, Quebec or Toronto, for the water-borne vessels than at present, and if such a Canal was constructed, the propeller of 900 tons sailing from Lake Superior, Michigan, or Ontario could proceed direct to Halifax or St. John with Western produce or Canadian products. If the navigation of the River Richelieu were improved and a connection made with it into the Caughnawaga Canal, then the 900 ton propeller could load coal, fish, &c., as a return cargo, and without breaking bulk, sail into Lake Champlain to meet and facilitate the manufacture of iron, from the inexhaustible deposits of ore in the State of New York, on the West side of that Lake."

In the above it is stated that on the enlargement of the St. Lawrence and Welland Canals, and the opening of the Baie Verte, "the 900 ton propeller will sail from Lakes Superior, Michigan and Ontario direct to Halifax and St. John with Western produce and Canadian products," and that "the Baie Verte Canal is highly important and in its results of a *truly national character in all its aspects*."

Thirty years ago the milling interest was a leading industry at St. John, receiving grain from the United States and the North of Europe. Could wheat be obtained by water from the granaries of the West in bulk, from the abundant supply of coal and fine water power, with direct shipments by the Canal, this old Maritime industry would revive and assume large proportions.

#### WHAT DEPTH WILL ANSWER FOR THE CANAL?

The Canal requires no greater depth than the enlarged St. Lawrence and Welland, viz, 12 feet on water sills. It was proposed to

make the Caughnawaga that size. In a letter to its President, the Hon. John Young, from Walter Shanly, C. E., is the following :

"I do not think such large capacity in respect of depth, at all events, is needful to ensure to a Canal connecting the St. Lawrence with Lake Champlain, its fullest measure of usefulness and success. The difference in cost between a Canal adapted to vessels of 12 feet draught and one of 2 feet less depth, would, in this instance, be not far short of probably one and a quarter millions of dollars. Ten feet is as much as is required, and on that basis, the Caughnawaga may be constructed for about \$4,250,000."

The length of the Canal will be  $29\frac{1}{2}$  miles, with 100 feet bottom.

HENRY BUDDEN, ESQ., MONTREAL.

Mr. Budden says "he believed a 12 feet Canal, with proportionate dimensions, would cost much less than the proposed one. If it is determined to build one of 15 feet depth, at a cost of \$8,000,000, he would be decidedly opposed to it. He does not mean to say a 12 feet Canal would pay the interest on the cost, but such a Canal will serve all practical purposes, and therefore an extra depth is unnecessary. If the Canal is built it should not be of greater depth than the St. Lawrence Canals."

J. H. GRANT, ESQ., QUEBEC.

Mr. Grant says "the proposed Canal is a work which has had his particular attention. If it can be built at a moderate cost, I mean of \$5,000,000, but even at \$8,000,000; I would be in favor of it, provided the dues would not give an advantage to the Gut of Canso as a competing route. I think if the Canal was made 12 feet instead of 15 feet as proposed, it would be of as much advantage."

R. R. CALL, MIRAMICHI.

Mr. Call says "if the Canal is made of the depth of the St. Lawrence Canals, it would be ample for all vessels that would desire to use it. Vessels at Miramichi getting offer of freight at St. John, or vice versa, would follow it." The following statement accompanying the evidence of Mr. Call, is important :

Report made in accordance with Section 8 of the Pilot Regulations, for the Port of Miramichi, in May and June, 1875.

Name of Vessel.	Tonnage.	Nationality.	Where From.	Draught in Ballast.
Alma, .....	541	Norwegian.	Christiana.	10 $\frac{1}{2}$ feet
Arethusa, .....	341	British.	Belfast.	9 "
Mavis, .....	627	Norwegian.	Norway.	12 "
Utter, .....	542	"	Arundel.	11 "
Nor, .....	456	"	Cardiff.	10 "
Eldarado, .....	224	British.	Belfast.	9 "

See from 1st July 1875 to 31st Dec 1875  
 5. 8. 1875

## ALLAN RITCHIE, ESQ., MIRAMICHI.

Mr. Ritchie says, "in looking over our books, I find our vessels could all go in ballast through the Canal, if of proposed depth of the St. Lawrence Canals. It would often be used by charterers in Gulf and St. John Ports."

Of the 37 vessels registered at Miramichi, (1874) only one was over 10 feet 6 hold. For the West India trade vessels of that depth are preferred, as they carry three tiers of hogsheads. As vessels from the Gulf or Bay of Fundy, to and from Europe and South America, would not follow the Canal, and as the class best suited for the West India trade, are not over 12 feet draught, there is no necessity for the Canal being of greater depth than the proposed enlargement of the St. Lawrence and Welland Canals, consequently in its construction, there will be a very large saving to the country if made of that size in place of the proposed 15 feet. The advocacy on the part of any person, of one of greater draught, can be with no expectation of or wish for its construction.

## WHAT BREADTH WILL ANSWER FOR THE CANAL ?

That a depth of 12 feet on water sill will be sufficient for the Canal few will question. What size will answer for its breadth ?

For a Canal of 13 feet depth, Mr. Telford recommended a breadth at bottom of 45 feet, with 95 feet at water level, except in deep cuttings, there the bottom would answer if of 30 feet width, with 72 feet width at surface.

Messrs. Gzowski and Samuel Keefer in their Report recommend "the cutting through the rock at the summit of the Canal, be reduced from 100 to 50 feet at bottom. The length of this cutting being about one and a half miles, a width of fifty feet will be sufficient, and whilst it will not injuriously affect the traffic of the Canal, it will materially reduce its cost."

Mr. Page says: "It may be observed that a channel of 80 feet wide would allow vessels the full width of the locks to pass each other freely under ordinary circumstances, in the reaches, by making the bottom of that width in place of 100 feet."

The Suez Canal, for 13 miles through rock, has only a breadth of 72 feet at bottom. Its actual width over the greater part of its length, will not permit of large vessels passing or crossing each other in the Canal, but there are numerous sidings by means of which ships can cross one another, and the passage is facilitated. Its total length is about 90 miles.

The Baie Verte Canal, with a depth of 12 feet on water sills, with 13 feet in Canal, with a breadth at bottom of 70 feet, should meet all the requirements of commerce. If years after a trade should develop itself, requiring a Canal of greater capacity it can be enlarged.

The Canal Commission of 1870 remarked in reference to the enlargement of the St. Lawrence and Welland Canals, "that while some recommended a draught of 12 feet, some 14 feet, and others 16 feet, it would be extremely unwise to embark in magnificent schemes, exceeding the resources of a young country, with the view of introducing ocean vessels into our Canals and Lakes."

In 1873 the Grand Trunk and Government gauge was 5 feet 6 inches, to-day both are changed to 4 feet 8½ inches. The Russian gauge is three feet 6 inches, and is not only adequate to the trade and travel of the Country, but yields a much larger return on cost and maintainance than if of greater breadth. There are not wanting indications that it will be the gauge of the future. The proposed size of 15x100 feet for the Baie Verte Canal may be reduced to 12x70 feet, at a saving of one third of the cost of the larger size, and that without any detriment to the trade that will seek the Canal.

The enquiry of the Government "as to the size of the vessels that might fairly be expected to pass through the Canal," has developed the facts that the ends of commerce will be served by the construction of one of smaller dimensions than the one proposed.

"If anything" said a Canadian statesman, "approaching 500,000 tons of shipping would pass through the Canal, the work should at once be commenced." This too after the estimated cost of \$8,000,000.

As a Canal of a reduced size will pass the shipping that would follow it, and will cost all of one third less, it should therefore be built, if anything approaching 300,000 tons of shipping will use it.

That a larger tonnage will follow it there is no room to question. The Canal will create a traffic for itself through the development of existing Maritime industries.

*Question 5.*—The nature and extent of the local trade, affecting only the coasts of the Bay of Fundy and the North coasts of New Brunswick and Prince Edward Island."

If there is but little trade between the Bay of Fundy and the Gulf Ports, it is chiefly because the Chignecto Isthmus is in the way of its extension. It is for this reason the construction of the Canal has been so long advocated.

Mr. Page, in his report, says, "the object proposed to be gained by the construction of the contemplated Canal, being to avoid the

dangers of sailing round the Atlantic coast of Nova Scotia, and the shortening of the sea voyage in the Bay of Fundy."

FROM		CAPE NORTH.	CANSO.	CANAL.	
Charlottetown, P. E. I., to	St. John,.....	678	498	144	254
"	" " Boston, .....	780	635	414	
"	" " New York.....	860	780	630	
New London, P. E. I.,	" St. John.....	658	535	240	
"	" " Boston, .....	740	635	509	
Chatham to	St. John,.....	720	620	225	
"	" Boston.....	840	710	480	
Dalhousie	" St. John.....	810	720	360	
"	" Windsor,.....	848	735	344	
"	" Boston.....	915	785	630	
Pictou	" St. John.....	560	480	170	310
"	" Boston.....	690	600	440	
Montreal	" St. John.....	1,239	1,179	829	350
"	" Boston.....	1,302	1,279	1,104	
"	" Windsor,.....	1,330	1,250	820	
"	" Hillsborough.....	1,315	1,235	760	

WHAT TRADE WILL FOLLOW THE CANAL ?

The Lumber resources of the Northern part of New Brunswick, as well as other points on the Restigouche and Bay Chaleur are very great, especially in a class of lumber that has disappeared from the River St. John and its tributaries, as well as from Nova Scotia. From the facilities the Canal would give in shortening the round voyage, and the avoidance of a dangerous coast, the American market which is now closed, would be re-opened, even without "Reciprocal Trade," as lumber is a necessity inseparable from many of its leading industries. When the depression of business disappears, the demand for lumber will be great.

SENATOR MUIRHEAD, OF MIRAMICHI,

Says, "one of the advantages to the Northern section of New Brunswick, from the construction of the Canal, would be a trade in small lumber now wasted from the want of a market."

WILLIAM ELDER, ESQ., M. P. P., OF ST. JOHN,

Says, "Edward Jack, Esq., a high authority on the lumber resources of New Brunswick, informed him that on the opening of the Canal, 100,000,000 feet of lumber could be shipped from the Gulf. The quantity there is inexhaustible."

THE DEVELOPMENT OF THE GULF FISHERIES

Would follow the construction of the Canal. This is well stated by

	Feet	Canal		
<i>Winnipeg</i>	<i>1458</i>	<i>1010</i>	<i>74</i>	<i>1015</i>
<i>Berlin</i>	<i>1278</i>	<i>1020</i>	<i>75</i>	<i>175</i>
<i>St John</i>	<i>1178</i>	<i>950</i>	<i>225</i>	<i>350</i>

the Canal Commission of 1870: "with the opening of the Canal there must of necessity, be a remarkable impulse given to the Mackerel Fisheries of the Gulf of St. Lawrence, to which a short and secure route will be given, not only to the people of the North and South shores of the Bay of Fundy, but to those of Yarmouth and Shelburne who are altogether engaged in Maritime pursuits." From this inexhaustible mine of Dominion wealth, the Bay of Fundy ports are shut out because of the long and dangerous voyage.

WILLIAM F. WHITCHER, ESQ.

Mr. Whitcher the Fishery Commissioner, says: the money value of the Fisheries for 1874 was \$11,681,886, an increase of nearly \$1,000,000 in excess of the previous year; these figures represent the fish exported. It is computed that ten per cent. should be added for domestic supply."

Even with the exclusion of the Bay ports from the Gulf fisheries, the catch of Nova Scotia and New Brunswick is large and growing.

	1870.	1871.	1872.	1873.	1874.
Nova Scotia,.....	\$4,019,424	\$6,570,739	\$6,016,835	\$6,577,086	\$6,652,301
New Brunswick,.....	1,131,435	1,578,695	1,965,450	2,285,661	2,685,703

ROBERT MARSHALL, ESQ., ST. JOHN.

Mr. Marshall, one of the Vice Presidents of the Dominion Board of Trade, says, "the proposed Canal would give to Canada a larger share in the Fisheries than they now possess, they are now largely monopolized by the United States; for that end the Canal is indispensable." The American catch is estimated at from six to eight millions; the total value of the fisheries for the year would be over \$18,000,000.

HON. MR. HOWLAN, OF PRINCE EDWARD ISLAND.

At a late meeting of the Dominion Board of Trade, Mr. Howlan stated: "Our Fisheries are only in their infancy, the Americans had 1000 vessels engaged in the mackerel fisheries alone, worth not less than \$5,000,000, manned by more than 12,000 seamen. The single town of Gloucester, Mass., sends out more than 400 of these vessels."

If the opening of the Canal will do nothing more than lead to a vigorous prosecution of the Gulf fisheries, the advantages direct and incidental that would follow would be very great.

To-day the markets of the World are open to the products of the Gulf, the Bays and Rivers of the Dominion. Mr. Whitcher says "the



condition of the fisheries yearly improve, and their production annually increases in quantity and value."

If Canada wishes to extend her trade with foreign countries, in no way can it be more effectively done than by the development of her exhaustless fisheries, to be followed by the expansion of shipping and other important industries.

It is not the existing trade between the Bay of Fundy and the Gulf of St. Lawrence that should determine the question, as to whether the Canal should be built, it is the trade the Canal will create and develop.

It is not the existing trade between Quebec and Ontario with Manitoba and British Columbia, that calls for the union of these places by rail, it is the traffic which the railway will create.

It is not the existing trade between the St. Lawrence and the Lakes that calls for the enlargement of the Welland and the St. Lawrence Canals, it is the increased traffic which they are expected to draw to Montreal and the Ocean.

Of these Canals Mr. Page says, "they have never done anything like the extent of business they might have been reasonably expected to do from their situation, connection and capacity." Yet to-day their enlargement is going on at the expense of the Country.

In determining the question as to whether the Baie Verte Canal should be built, let there be one standard and one measure for the East and the West, one rule for all. While the Western country is large with promise, and has a great future before it, of the Maritime section of the Dominion, it has been truly said, "evidence and observation which Commissioners have had the opportunity of making, have impressed them deeply with the vast resources of New Brunswick, Nova Scotia, and Prince Edward Island, and the large increase which may reasonably be looked for in their future trade and commerce." In the above I most cordially join my colleagues on the Commission, and feel it a duty consequent on such convictions, to commend the construction of a Canal. For such like reasons, it was pressed on the Canal Commission of 1870, as well as by the Dominion and other Boards of Trade of the country.

#### PRINCE EDWARD ISLAND.

The trade of the Island is fast expanding, and from the construction of its railway and the settlement of its land tenure, its farming interest will receive a great impulse.

HON. JAMES C. POPE, M. P. P.

Mr. Pope evidently studied the effect the Canal would have on the trade of the Island, when he said "the general impression, when the Railway was introduced, was that there would be nothing for it to do, but it far exceeds the expectations of the most sanguine." He is most strongly of opinion "that the proposed Canal would be of great advantage to the Island. It would shorten the distance to the United States very much, thereby cheapening the transit of our goods, and enabling us, particularly from the West end of the Island, to send fresh fish, which is our great product, almost every day to Boston. It is our best market. If we had a Reciprocity Treaty there would be still more advantages. Everything that could be raised from the ground, or taken from the sea, would go to the United States by way of the Canal. It is our natural market. If a Canal was built the Americans would remain on the ground and send their fish home through it. The shortest and cheapest route will make a trade for itself."

WILL THE CANAL SHORTEN THE DISTANCE ?

	Cape North.	Canso.	Canal.
From Charlottetown, P. E. I. to Boston.....	780	635	414
" Summerside, " " " .....	815	670	414

The remark of the Prince Edward Island witness who said "the Canal will draw the Island half way to Boston," was striking.

HON. MR. SINCLAIR, M. P. P.

At the last session of Parliament, Mr. Sinclair, of Prince Edward Island, stated "it was very difficult for any one to estimate the value of trade that would follow this Canal, because the increased facilities which it would afford, would enhance the volume of trade to an extent that could not now be estimated."

ANGUS McMILLAN, ESQ., P. E. I.

In evidence, Mr. McMillan stated "that a large number of American Fishermen go round the North Cape of P. E. Island from the Magdalen Island, when going home in the fall. He had seen 400 of them at a time going round. When there is a North-east storm they go that way. Vessels that wish to remain here all summer, could get their fish sent home by the Canal in steamers. Canals, like Railways, almost always draw trade. When we send a vessel to England in the fall, we are more anxious to get her clear of the Gut than all the rest of the passage."

HON. JOHN LEFURGY, P. E. I.

The evidence of Mr. Lefurgy is important. He says "he is a little

delicate in giving an opinion when so large a sum as \$8,000,000 is involved. Water communication is cheaper than rail. Thinks all our fish would go by Canal, and many of the American fishing vessels would go that way. Cannot say whether there is local trade enough to warrant the expenditure of so large a sum of money. The advantages from the Canal would not be well estimated until it was opened. We generally find that Canals and Railways give more advantages than at first anticipated. All improvements are the same. Thinks the Canal would be a very great advantage to the Lower Provinces and the Gulf. In saving time we save money. We can send potatoes now and pay duty, but the distance by present route is considerable, and the risk of their spoiling is great."

Prince Edward Island will become, after the opening of the Canal, the shipping point for the fisheries of the Gulf to the United States, and for supplies to the fishing vessels of outfits for their continuous voyages.

#### AMERICAN FISHING VESSELS.

That American fishermen for the Gulf will use the Canal, there can be no question. When they read the table of Insurance rates of Mr. Marshall, the Casualty record of the Bay of Fundy submitted by Mr. Barbour, the Fog table of Mr. Wilson, and Mr. Hyndman's table of distances, the Canal will be their favorite route. Bait, barrels, salt and men will be found in the Bay of Fundy or Northumberland Straits, as well as at Canso.

As the right to its use can only be obtained by Treaty, there is no difficulty in understanding why American fishermen profess indifference to the opening of the Canal. The higher the estimate put upon it by them now, the greater the concession they would have to make for its use.

#### REUBEN LUNT, ESQ.

The evidence of Mr. Lunt is valuable, for he has long been connected with steamers in the Bay of Fundy, and at the present time, with the Gulf navigation. If there are any who are unwise enough to declare, that for the trade from Prince Edward Island to the Bay of Fundy ports and the Eastern States, the Canal will not be used, its examination will dispel the illusion under which they are laboring:

"Distance from Charlottetown to Boston via Cape North,.....	780	miles.
" " " " " " " Gut of Canso,.....	635	"
" " " " " " " Baie Verte Canal,.....	415	"

the distance in favor of Canal over Canso is 220 miles.

"Supposing two propellers of 500 tons each, running at a speed of 9 miles

per hour are engaged on these routes, one running via Gut of Canso, the other via Canal, the season commencing say middle of April and ending middle of November, making seven months, this would be 210 days; allowing 100 hours for round trip via Canal, and one day in port at each end of the route, she would make in 7 months 35 trips. In the other case, via Gut of Canso, allowing 140 hours for round trip and a day in port at each end of route, in the 7 months or 210 days she would perform 26 trips, this would show that via Canal, she would make 9 round trips more during the season. In making the 35 trips via Canal, she would not consume as much coal as the steamer making the 26 trips via Gut of Canso, as in making the 26 trips she would steam 3640 hours, and in making the 35 trips via Canal, she would steam 3500 hours, showing a saving of 140 hours of steaming. Supposing the wages to be the same in either case, during the 7 months she would have to her credit the proceeds of the 9 trips which would be about as follows: Estimating the propeller to carry 3000 bushels, say of oats, there would be other products of the Island shipped, also, their fish, and Boston is their natural market, and with Reciprocity the trade from the Island would be very great, reckoning 3 bushels to a barrel, and 56 bushels to the ton (this being the Canal standard for oats,) the 3000 barrels would be about 160 tons, which, at a freight of \$4.50 per ton, would amount to \$720. Allowing same amount for the return trip, and this calculation would be under, as the return cargo being miscellaneous, would pay better than the cargo in bulk, would make \$1440 the round trip, and for 9 trips would be \$12,960; add to this the large room that would have been occupied by the 40 tons of coal extra, which the steamer would consume in the round trip via Canso, leaving room for freight, say for 30 tons (as the coal would possibly occupy less space than cargo) at \$4.50 per ton, would make \$3,510, making \$16,470. To this should be added the profit on passengers for the 9 trips which would be very considerable as passengers pay better than freight. From this amount the toll charges are to be deducted, and taking the St. Lawrence for a calculation which on  $42\frac{1}{2}$  miles long with 24 locks, while the Baie Verte Canal will be only  $21\frac{1}{2}$  miles long with 4 locks, the following would be the result: on 160 tons of cargo at 15 cents would be \$24, and  $1\frac{1}{2}$  cents per ton on vessels of 500 tons would be \$7.50 or \$31.50 each way. This would make \$63 on the round trip, or for 35 trips \$2205, leaving a profit of \$14,265 for the propeller running via the Canal, over the one running via Canso. So it is evident that the propeller running via Canso, could not possibly compete with the one running via the Canal. This is not all; there would be a large saving of insurance on vessel and cargo on the diminished distance of 440 miles. The Island would also ship largely of other articles—eggs, butter, potatoes, fish, &c. The amount of tonnage that would be required to carry the Island produce would be large. In one year the Island shipped to England 1,500,000 bushels of oats. The most natural and most profitable market for the Island is Boston and the New England States. To carry the above quantity of oats which would be equal to about 500,000 barrels, would require a propeller of 500 tons carrying 3000 barrels, to make 166 trips each way or 332 trips, which would be equal to a tonnage of 166,000 tons that would pass through the Canal for oats alone. The Island grows potatoes largely, and Boston is the natural market. Estimating the export at 750,000 bushels or equal to about 300,000 barrels, it would require a propeller of the same capacity as named, (3000 barrels) to make 100 trips or 200 passages through the Canal, or equal to a tonnage of 100,000 tons for carrying the quantity of potatoes alone. Thus, in two articles only, potatoes and oats, a tonnage equal to 266,000 tons would be required for transportation through the Canal. This is not the limit of the Island's capacity, for with the land dispute settled, and the Railway to facilitate

the transportation of produce to shipping points, a very large increase may be expected; 20 per cent. would not, perhaps, be an extravagant figure, but allowing 10 per cent. this would show a much larger tonnage that would require to use the Canal. It may be said to require Reciprocity to develop the above trade to the extent named. We presume, that few men in Canada doubt, that a Treaty on some basis will soon be agreed upon; it will include products of the field, forest and mine at least."

Messrs. Pope, McMillan, Lefurgy and Lunt point out with great force and clearness some of "the commercial advantages that will follow the opening of the Canal," and place it beyond a question that the trade of the Gulf with the Bay of Fundy and the Eastern States will follow it, as it is one of the laws of commerce "that the shortest and cheapest route will make a trade for itself."

#### THE BAY OF FUNDY PORTS AND THE CANAL.

While Canada is the fourth Maritime power of the world, two-thirds of its shipping is owned in the Provinces by the sea, the greater portion of which belongs to the Bay of Fundy.

As the enlargement of the Welland and St. Lawrence Canals will call for a larger and improved class of vessels, and for an increase of tonnage, the great shipping centre of the Dominion, the Bay of Fundy, should share in that trade.

This opinion was held by the Canal Commission of 1870 :

"The impulse that will be given to ship building and the carrying trade of the Dominion must be very considerable. Of late years the shipping interests of the British American Provinces, have made very great progress, and now they are entitled to the proud position of owning the largest commercial marine in the world, after England, the United States and France.

"Nova Scotia and New Brunswick have now taken the place formerly occupied on this Continent, by Maine and Massachusetts. Not only does Canada own her ships, she sails them; her flag is to be seen in every part of the world where commercial enterprise has found its way."

#### CANADIAN SHIPPING.

British Columbia,.....	36	Vessels.	3,611	Tons.
Prince Edward Island,.....	312	"	48,388	"
Ontario,.....	815	"	113,008	"
Quebec, .....	1,837	"	218,946	"
New Brunswick,.....	1,144	"	294,741	"
Nova Scotia, ..	2,786	"	479,741	"
	<u>6,930</u>	"	<u>1,158,435</u>	"

Of the Bay of Fundy tonnage, Nova Scotia has 246,977 tons, and New Brunswick 280,144. For every man, woman and child, the latter Province owns a ton of first class shipping. Although the year 1875 was exceptionally unfavorable to the shipping interest, New Brunswick added to her marine, tonnage to the value of nearly

three quarters of a million dollars. St. John, the commercial capital, is the fourth port in the British Empire in point of registered tonnage.

#### THE MONETARY TIMES

Says "the ships and shipping trade of Nova Scotia and New Brunswick, at present, are but a foretaste of what the future has in store for them. It is impossible, we think, for any one to reflect upon their position on the Atlantic, their numerous safe and spacious harbours, and upon the immense productions which the central portion of the Dominion must ultimately send to the ocean for shipment, as well as the increased development of their own invaluable fisheries and mines, without perceiving that a few decades must find the fleets of Nova Scotia and New Brunswick so numerous that their sails will be met on every sea."

"*Question 6.*—The nature and extent of the difficulties that might be encountered in getting into and out of the Canal on account of the extremely high tides in the Bay of Fundy."

No difficulties out of the ordinary kind will be encountered in getting into or out of the Canal. The danger from coast navigation is greatly less than in the past, consequent on the increased number of light houses, fog whistles, storm signals, captains' and mates' certificates of seamanship, and an improved class of vessels.

SAMUEL KEEFER, C. E.

"On the direct course up the Bay to Cumberland Basin, and in the Basin itself there is no bore, the water being too deep, and the course too direct to admit of such a phenomenon. Having observed the operation of the tides, both at Laplanche and at AuLac, I was surprised to see with what regularity it was done. The surface of the great Basin rises and falls almost imperceptibly, all the while preserving the appearance, in the absence of any wind, the placid appearance of a Lake." Captain Amos Barnes, who sailed for many years from the head of Cumberland Basin, as well as others, testify to the correctness of the foregoing.

P. S. HAMILTON, ESQ., OF HALIFAX.

At a meeting at Halifax, 1867, Mr. Hamilton read a paper on "The Tides of the Bay of Fundy." It closed with the following: "So many and strange reports have gone abroad about this Bay, that to many strangers it is a name of terror, yet to those acquainted with the place, its navigation is comparatively safe and easy, and these very tides are what conduce so much to the facilities of its navigation. Many of Nature's moods and changes there are known, can be calculated on

beforehand, and taken advantage of. I have myself gone all around and over the Basin of Minas and Cobequid Bay in a little open sail boat; I have seen men, from twenty miles up the Shubencadie River, away down the Bay near to Economy Point, in a log canoe crossing the Bay near Cape D'Or. Still it must be admitted that the Bay of Fundy is no place for a stranger without a good pilot. Finally, as to the dangers of navigation there, I will hazard the assertion that the number of marine disasters in the Bay of Fundy is less than on the same extent of coast in any other part of Nova Scotia."

The above is important testimony pertinent to the enquiry as to "the nature and extent of the difficulties that might be encountered in getting into and out of the Canal on account of the extremely high tides in the Bay of Fundy." Mr. Hamilton says "these very tides are what conduce so much to its navigation."

COMMANDER WILLIAM PEEL, R. N.

The late Com. Peel, in 1848, wrote to the *Nautical Magazine* :

"The tides of the Bay of Fundy though extremely rapid are very regular, and the winds during these months seldom blow with violence or without dispersing the fog in the immediate vicinity of the land, the water, also, in the Bay above Grand Manan is smooth, though rendered dangerous to small boats in many places from the rippling of the tides. A pilot is rendered necessary for a first acquaintance. But no where better than in the Bay of Fundy, from the vivid recollection of the land that is impressed on the mind by anxious attention, can one so quickly learn to dispense with his services."

MR. PAGE, C. E.

In his Report on the Canal, Mr. Page says "its Western terminus would be in a position that could be safely approached or left in any wind or weather that the Bay of Fundy could be navigated; there are no dangers in the vicinity, while it presents facilities for being made available at any stage of the tide, and is described in the sailing directions as good anchorage."

From the three-fold evidence of Messrs. Hamilton, Peel and Page, it is clearly apparent "that the extremely high tides of the Bay of Fundy" will not cause any difficulty in entering or leaving the Canal. Mr. Page not only states "there are no dangers in its vicinity;" he goes further. He says "it presents facilities for being made available at any stage of the tide."

THE BAY OF FUNDY TO SOME A NAME OF TERROR.

"So many strange reports," said Mr. Hamilton, "have gone abroad about this Bay, that to many strangers it is a name of terror." On

almost every page of evidence, its fogs and tides are assigned as a reason why the Canal will not be used. A few brief illustrations will be read with interest, and will be the more appreciated in connection with the following table of distances.

	VIA CAPE NORTH.	VIA CANSO.	VIA CANAL.
Charlottetown, P. E. I., to St. John,.....	678 miles.	498 miles.	144 miles.

As the evidence of four Prince Edward Island gentlemen has been given, who are favorable to the Canal, viz., the Hon. James C. Pope, the Hon. Mr. Sinclair, M. P., Angus McMillan, Esq., and the Hon. Mr. Lefurgy, the same number will be taken who are opposed to it. On which side the weight of testimony rests, it will not be difficult to determine.

One gentleman stated that "if he had a vessel to send to St. John, and the Canal open, he would prefer to send her by Canso, and round Cape Sable, and up the Bay of Fundy. The insurance by the Canal would not be less than double rate."

A second declares "there would be great danger from collision in the Canal in foggy weather, increasing the cost of insurance."

It is perfectly true that fog has been seen in the Bay of Fundy, but no one conversant with the head of the Bay, or Cumberland Basin, says it reaches the place designated for the Canal or its vicinity.

A third says "he would not go by the Canal on account of the navigation of the Bay of Fundy. Vessels would be subject to fogs and detention in Canal, and insurance would be greater."

A fourth "would not go into the Bay of Fundy for double wages, as you cannot tell where you are. It is an abominable place."

The objections stated are two fold. Fogs in the Canal and Bay, and high rates of insurance consequent.

#### INSURANCE RATES IN BAY OF FUNDY.

Robert Marshall, Esq., a leading Insurance Broker at St. John, prepared the following tables for the Commissioners :

Rates of Insurance from Ports in the Bay of Fundy to Ports in Great Britain or Continent :

	Hull.	Freight.
May,.....	2 per cent.	1½ per cent.
June, .....	1½ "	1½ "
July, .....	1½ "	1¼ "
August, .....	1½ "	1¼ "
September, .....	2 "	1½ "
October, .....	2½ "	2 "
November, .....	3 "	2½ "



Rates of Insurance from Ports South of Cape Tormentine in Northumberland Straits to Ports in Great Britain or Continent:

	Hull.	Freight.
May,.....	2 per cent.	1 $\frac{3}{4}$ per cent.
June, .....	1 $\frac{3}{4}$ "	1 $\frac{1}{2}$ "
July, .....	1 $\frac{1}{2}$ "	1 $\frac{1}{2}$ "
August, .....	1 $\frac{3}{4}$ "	1 $\frac{1}{2}$ "
September, .....	2 "	1 $\frac{3}{4}$ "
October, .....	3 "	2 $\frac{1}{2}$ "
November, 1st to 10th, 4	"	3 $\frac{1}{2}$ "
" 10th to 20th, 5	"	4 $\frac{1}{2}$ "
" 20th to 30th, 6	"	5 "

If the distance from Cape Tormentine to Europe was the same as from the Bay of Fundy ports, the superiority of the Bay navigation over Canso would even then be established; but when it is remembered that it is nearly 400 miles shorter than from St. John, and 500 from Sackville, the Western end of the Canal, the safety of the Bay of Fundy over the Canso route, stands unquestioned, and all the evidence hostile to the Canal, because of supposed fogs and tides and high rates of insurance of the Bay, can carry no weight and have no value.

#### THE FIRST CANAL COMMISSION.

The report of the Canal Commission of 1870 evidently was the result of careful research, and is entitled to great consideration. It says: "When we consider the shorter distance, and the lessening of insurance in the Autumn, on account of a safer route, than that now taken through Canso and round the Atlantic coast of Nova Scotia, so exposed at certain seasons to fogs and storms, it is safe to estimate the saving of freight on a ton of coal to Boston or Portland from Pictou, at \$1 per ton."

#### THE CASUALTIES OF 1873 IN THE BAY OF FUNDY.

The following from official records is in evidence:

The number and tonnage of Vessels that entered and cleared from and for sea at Bay of Fundy Ports, 1873.

Number of Vessels,.....	7,912
Amount of their Tonnage,.....	1,517,251
Number which met with Casualties in the Bay,....	28
Amount of their Tonnage,.....	9,359
Number of the 28 that were Total Wrecks,.....	16
"    " the 16 that were wrecked between April the 15th and December the 1st, the period when the Canal would be open,	11
Amount of their Tonnage,.....	1,570
Number of the 11 lost from Fog,.....	4
Amount of their Tonnage, .....	510

In the casualties above, Coasters of the Bay of Fundy are in-

cluded, but as there is no record of their arrival and departure available, they are not included in the 7,912 vessels with their 1,517,251 tons; consequently the aggregate of vessels navigating the Bay of Fundy is considerably greater.

THE CASUALTIES OF 1874 IN THE BAY OF FUNDY.

Number of Vessels which entered and cleared,.....	7,291
Amount of their Tonnage,.....	1,631,688
Number which met with casualties in the Bay,.....	25
Amount of their Tonnage,.....	6,374
Number of the 25 that were Total Wrecks, .....	11
“ “ “ 11, between April 15th and December 1st,...	3
Amount of their Tonnage,.....	245

Of the 25 casualties there were no total wrecks from fogs, and the two damaged from that cause, involved a loss of only \$3,100.

Mr. Hamilton, of Nova Scotia, wrote wisely when he penned: “I will hazard the assertion, that the number of marine disasters in the Bay of Fundy is less than on the same extent of coast in any other part of Nova Scotia.”

The Bay of Fundy is not the only place that has suffered from misrepresentation. What Mr. Page writes of the St. Lawrence is as true of the Bay:

“It may also be remarked that highly colored descriptions of the severity of the climate, and dangers of the River and Gulf navigation, together with underrating what has been done to overcome natural difficulties, have had a tendency to injure the Canadian route. Light houses have been erected on many head lands and salient points of the coast and islands; beacons and land marks, fog whistles and signal guns established, and other arrangements made for the guidance and benefit of vessels. There are, however, some writers on this subject who do not seem to be aware of this fact, and do not care to notice them, as they continue to describe in strong terms, dangers that have practically ceased to exist.” *See Appendix B.*

Every word of the above is as applicable to the Bay of Fundy as to the River and Gulf of St. Lawrence. To have recourse to such expedients at this day, to damage the long projected Canal, can only react on those unwise enough to use them.

If vessels of 3000 tons can pass in safety through the channel in Lake St. Peter, over 11 miles in length and only 300 feet wide and 20 feet deep, on their passage from Quebec to Montreal, what are the serious difficulties to be apprehended at the present day in navigating a channel  $3\frac{1}{2}$  miles long, with a depth of over 16 feet, and from 900 feet to one and a half miles wide, for vessels of 12 feet draught? As for entering and leaving the Canal at any stage of tide, and for overcoming supposed “serious difficulties,” that may be safely left to

the Maritime navigator, as the Bay of Fundy records attest to his skill and seamanship. See Appendix C.

#### CLEAR DAYS IN THE BAY OF FUNDY.

The records of Mr. Wilson, Light House and Fog Whistle Superintendent, at Partridge Island, Bay of Fundy, will show the number of hours of thick weather in each month for four years, from April to November inclusive.

Year.	April.	May.	June.	July.	Aug.	Sep.	Oct.	Nov.	
1871	H. M. 20.10	H. M. 38.10	H. M. 123.25	H. M. 164.40	H. M. 147.45	H. M. 56.30	H. M. 30.45	H. M. 30.00	1 day thick out of 9½ days.
1872	77.40	81.10	131.10	131.30	218.23	77.05	27.35	23.45	1 " " " 7½ "
1873	36.45	100.40	77.35	256.15	148.30	175.02	67.25	45.40	1 " " " 6½ "
1874	74.20	114.15	88.10	179.35	129.10	126.35	58 20	29.40	1 " " " 7½ "

The hours of thick weather include the night as well as the day. The largest average for the four years was in 1873, in that year only four vessels of 510 tons, were lost from that cause, out of a tonnage of over 1,517,257.

Yet, in the face of the foregoing records, the 1872 edition of the Admiralty sailing Directions of the Bay of Fundy, has the following :

"Ships navigating the Bay of Fundy have to encounter an atmosphere almost constantly enveloped in thick fog."

The great objection to the Canal are the fogs of the Bay. On almost every page of evidence they loom up as a dark head-land. It is quite apparent that those who state the Canal will not be used for that reason, have not given to the subject the consideration it merits, or have been relying on obsolete authorities.

Eliminate from the evidence all that is hostile to the Canal, because of the fogs and tides of the Bay of Fundy, and the opposition to it is most essentially weakened and damaged.

As the Bay of Fundy is the centre of the shipping interests of the Dominion, it would have been faithless in one living on its shores, to have allowed the persistent efforts everywhere discernible in the evidence, to defeat the Canal, by damaging the character of the Bay, without attempting its vindication ; it has an honorable record. The Bay of Fundy navigator meets only some of the perils the seamen on the inland waters are exposed to. From the day LaSalle sailed with the *Griffin*, the first vessel on Lake Erie, and the first lost, the casualties have been great. In 1875 the Lake disasters alone numbered 1056, involving a loss of \$3,791,300

## BAIE VERTE.

If there are any dangers of an exceptional character at the Baie Verte end of the Canal, they must be known to the Government for they gave no instructions to the Commission to enquire in reference to them. It is hardly possible that after the careful observations of the engineers delegated to this task, any fresh discoveries can be made, that will in any way militate against the usefulness of the Canal. Of the Baie Verte end, Mr. Page says: "A capacious harbour will be formed, the immediate entrance to which is in deep water, remote from shoals, reefs, or other dangers."

## DEPTH OF WATER IN BASIN.

The depth of water in Basin at low tide, will be over 16 feet. The report says: "During the nine and a half months the survey was in progress, the water was only once down to 66.86 feet, or to within 16 inches of the assumed low water line, but taking the lowest tide each month (for the whole time of the survey is the average) is 67.85 feet or 27 inches over the assumed low water mark." "These facts," adds Mr. Page, "together with the recorded observations of Admiral Bayfield, who gave much attention to the subject, leads to the conclusion that the available depth of water at low tide may fairly be taken at about 18 inches more than shown on the map." This, it is believed, might fairly be done judiciously, even if it were fairly established that at distant intervals the tide did fall to the above line stated, as it must be quite evident that such an occurrence could only be of short duration, as could not to any practical or even appreciable extent, interfere with navigation."

From the foregoing it is clear that at low tide, the depth of water in the Basin will not be less than 17 feet 6 inches, consequently, at no time would there be any difficulty in a vessel of 15 feet draught, entering or leaving it. Should the Canal be made for vessels of 12 feet draught, the depth of water in the Basin at low tide would be 14 feet 6 inches.

One of the Prince Edward Island witnesses said: "Baie Verte is a capital place, our vessels run into it, and go up as far as Tidnish Head, vessels run in there in the night drawing 15 feet 6 inches of water. We consider the Bay a very good place of shelter."

Francis Hall, C. E., in his Report, 1825, says, "from testimony of respectable and experienced ship owners, it appears, that the entrance to the Canal on the Baie Verte side, is safe and attended with no

difficulty, and that the Cumberland Basin is peculiarly adapted for shelter and accommodation."

Every attempt to defeat the construction of the Canal on physical grounds, after Engineers like Hall, Telford, Crawly, Gzouski, Keefer, Baillairge and Page, have pronounced the work practicable, must fail.

#### OBJECTIONS TO THE CANAL.

1st. There are those who think if the Baie Verte Canal is abandoned the money should be expended on other Maritime works, especially Branch Railways. This has operated greatly to its disadvantage. Once a policy of that kind is entered on by the Government, the end no one can foretell. While the great arteries of commerce should be owned and controlled by the Government of the country, branch lines of railway belong entirely to the domain of the Local Governments and private enterprise, and should find no place on the page of Hansard or the Dominion Statute Book.

2nd. Others are opposed to the Canal because to their section, it will be of no direct benefit.

3rd. Numbers oppose its construction, because, from the supposed difficulties attending the navigation of the Bay of Fundy from fogs and tides, the Canal would be but little used.

4th. Others, because the volume of trade would not meet the interest on \$8,000,000. The objectors to it on this ground, cannot be cognizant of the fact, that no test or standard of that kind has been applied to the enlargement of the St. Lawrence and Welland Canals. They have never paid anything like the interest on their cost, "or done the full measure of work they are competent to do."

If an expenditure of millions of the public money is justifiable on their enlargement, in the face of these indisputable statements, who, contemplating the diversity of interests that will be served, immediate and prospective, direct and incidental, from the opening of the Baie Verte Canal, can consistently oppose its construction ?

JOHN BOYD, Esq.

In a letter to the Canal Commission of 1870, to which letter Mr. Boyd referred the present Commission, he wrote, "there is no public work now presented to the Dominion, which will be so far reaching in its beneficial consequences, not only to Canada but to the whole of the Atlantic coast of North America. This Canal means, for Ontario and Quebec, cheap coal, iron, stone, fish, &c. For Nova Scotia and New Brunswick, a better market for all these. To us, of the Lower Provinces, it means cheaper flour and other products of the Upper."

## THE LATE JUDGE HALIBURTON, OF NOVA SCOTIA.

Haliburton, in his History of Nova Scotia, writes: "By the construction of the Baie Verte Canal, the long and dangerous circuit of Cape Breton, in the navigation between New Brunswick and the St. Lawrence will be avoided; and Canadian produce be sent to Nova Scotia and her sister Province. The resources of Gaspe, Bay Chaleur Prince Edward Island, and the country bordering on the Restigouche and the Miramichi, are neither generally known nor easily developed on account of the communication with these places being tedious, dangerous and expensive. A Canal will obviate the difficulty attending the navigation, and render the intercourse between the Colonies in British America, safe and expeditious. It will also have a powerful influence in cementing their union, by creating a reciprocal dependence upon each other, by facilitating the means of friendly intercourse and increasing their commercial relations."

Thus wrote one of Nova Scotia's most gifted sons, as to the "commercial advantages" that would follow from the opening of the Baie Verte Canal, chiefly by the avoidance of "the long and dangerous" circuit between the Gulf and the Bay of Fundy, which was "tedious, dangerous and expensive," while the route by the Canal would "be safe and expeditious."

## CUMULATIVE TESTIMONY.

The views of Messrs. Boyd and Haliburton, have been ably set forth and maintained by the Boards of Trade of Hamilton, Toronto, Ottawa, Montreal, Quebec and St. John; re-affirmed by the Dominion Board of Trade, and pressed on the Government by the Canal Commission of 1870, and accepted as a part of the Canal system of the Country.

To consign to oblivion this long projected work, because of evidence taken by the Commission, in the face of such an array of witnesses, comprising the first commercial minds of the country, and nearly all residents of Quebec and Ontario, witnesses whose opinions are corroborated by the Hon. Mr. Pope of Prince Edward Island, Messrs. Tomkins and Lunt of New Brunswick, and many others—a work which has been twice before the Legislature of Nova Scotia as before stated, and for the commencement of which, the Federal Government made provision in the estimates, and obtained the sanction of Parliament, would be strange.

If this work is to be passed over, the question may well be asked on what class and character of testimony, are the great works of the

Country to be undertaken, especially when the enlargement of the Welland and the St. Lawrence Canals is now going forward, notwithstanding neither have paid anything of note over their expenses, or been worked up to their present capacity ?

#### CONCLUSION

Having given to the trust delegated to me, as one of the Canal Commission of 1875, the most careful and studious attention, I would recommend to the Government, in the interests of the Dominion, the construction of a Full Tide Canal, of the size designated in this Report, believing it to be adequate to all the exigencies of commerce, at least, for many years. It is a matter, however, meriting the consideration of the Government, as to whether the suggestion of Professor Hind, for a tidal highway, might not be adopted, for, should it be found not to meet the requirements of trade, it could be made into a Canal.

It is a work which Sir Hugh Allan, Gzowski, Calvin, Gavreau, Jardine, Shannon and Keefer declared "was essential to give unity and completeness to the Canal system of the country, and was Canadian in design, and must prove national in its results." With my colleagues, I most cordially join in "the hope that the existing depression in business will prove temporary, and that with increasing population, and the extension of the industry of the country, the progress of the future will be equal to the past, and this will be greatly stimulated by the cheapening of transit from all points of the interior to the consumers of the East, and to the ports of shipment to Europe." To the attainment of these patriotic aspirations, what will do more than a connection of the waters of the Bay of Fundy with the waters of the Gulf of St. Lawrence ?

Whether the immediate commencement of the work should take place in view of the obligations now resting on the Country is a question its advocates should be patriotic enough to leave with the Government, knowing that its first duty is, the maintainence of the public credit, and the avoidance of unduly adding to the burdens of the people.

I have the honor to be,

Your humble servant,

J. W. LAWRENCE.

# APPENDIX.

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## A

### SAINT JOHN BOARD OF TRADE.

At its last January Session the following was unanimously adopted :

*Resolved.*—That we view with satisfaction the attitude of the Government in seeking full information as to the practicability of the building of the Baie Verte Canal, and trust our delegates will take an opportunity to interview the Minister of Public Works, pressing upon him the utility of opening a Canal or water-way between the waters of the Bay of Fundy and the Gulf of St. Lawrence, this Board fully agreeing in the report of a former Canal Commission designating the Baie Verte Canal as one of primary importance.”

## B

### ADMIRALTY SAILING DIRECTIONS OF THE GULF AND RIVER ST. LAWRENCE, COMPILED FROM RECENT SURVEYS. FROM 1872 EDITION.

Mr. Page says “there are some writers who do not seem to be aware of the changes and improvement going on, and do not care to notice them, but continue to describe in strong terms dangers that have practically ceased to exist.” Take the following from the 1872 Edition, above referred to :

“Lake St. Pierre is 22 miles long, and in some places nearly 8 in breadth ; but its Western part is encumbered with numerous Islands, which divide it into several channels, two of which are navigable, but that on the South side is the cleanest, deepest, and best, and is pointed out by a light vessel, and buoy. The banks here are low, and shelve off to a considerable distance, leaving only a narrow channel of from 12 to 18 feet water ; the river here is obstructed by masses of rock, and at the ebb tide, the descent of the rapid becomes so great that the utmost caution must be taken to pass it ; vessels, therefore, should wait for a proper time of tide, and if necessary, they may anchor at the bottom of the rapid until a proper opportunity occurs.”

The Admiralty Sailing Directions above are as untrue and unreliable in regard to the fogs and tides of the Bay of Fundy, as to the present state of Lake St. Pierre.

## C

### CAPTAIN ALBERT BETTS.

“I, Albert Betts, Master Mariner, of the City of Saint John, N. B., have followed the sea for over forty-three years, and have been master for thirty-nine years and never lost a vessel, and am now engaged as Surveyor for Marine Insurance. I have commanded ships belonging to this port to all



parts of the World, and have had no difficulty in navigating the Bay of Fundy in Summer or Winter. For several years I commanded steamers running from St. John to Dorchester and Sackville at the head of Cumberland Basin.

“There are no dangers from the mouth of the Bay of Fundy, by its Northern channel, to the mouth of the AuLac, out of the ordinary kind. The intricacies of its navigation are at its southern entrance, between Grand Manan and the Nova Scotia coast. Vessels from the head of Cumberland Basin to the United States, follow the Northern channel. Since I commanded a steamer to the head of the Bay, a number of additional Lighthouses have been erected. Fog whistles at that time were unknown to the Bay of Fundy; since their erection, fogs create no anxiety to the navigator beyond extra caution. Now, disasters from fog are very rare. The Bay of Fundy is very free from storms, and when they do occur are of short duration. There would be no danger in going up or down from the mouth of the AuLac, at any time of tide, for vessels of 15 feet draught of water, nor of entering or leaving the Basin (250 feet wide) at the mouth of the Canal. Steamers could enter and leave the Basin at any time during the twenty-four hours, and as easily at one time of tide as the other. Steamers, it is well known, are fast superceding sailing vessels in the carrying trade of the Dominion and they are a class of vessels, that, as a rule, carry their own pilots. A sailing vessel could leave the Canal at any time of tide, with a fair wind, or, if a calm, could leave on the ebb tide, and proceed nearly twenty miles down to good anchorage, while a sailing vessel, when within twenty miles of the Canal, could, in a calm, reach the Basin on the flood. The tides of the Bay of Fundy are well known to be of great assistance to its navigation.”

ALBERT BETTS.

St. John, N. B., Nov. 12th, 1875.

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### CAPTAIN WILSON ESTABROOKS.

“I, Captain Wilson Estabrooks, of schooner *Effie*, sailing between St. John, N. B., and Sackville River, have been to sea for the past twenty-two years. For fifteen years I have sailed from AuLac to St. John, and occasionally from AuLac to Boston and other places in the United States. I have also piloted vessels as large as 600 tons, from AuLac. At the mouth of the AuLac there is good anchorage, also, at Botsford's Creek, and at five fathom hole, between AuLac and Barnes' Reef. From the Reef to Rockport there is anchorage all the way down. Vessels drawing 15 feet of water safe at anchorage. Vessels of that draught running, at low water, half a mile up Sackville River. No difficulty in entering or leaving basin of Canal at any time of tide. The tides of Bay of Fundy are a benefit to navigation. Coasters require neither tugs nor pilots. Fog is very rare at head of Bay. At Cape Enrage there is a lighthouse and fog whistle, the Cape is 30 miles from AuLac. For vessels of fifteen feet draught there is no difficulty of going to or from Canal at any time of tide. In Cumberland Bay, and, also, in the Bay of Fundy, by the North channel, there are no dangers out of the ordinary kind. As a rule vessels can leave Sackville 20th March. I know of no place where navigation is safer, than from mouth of Bay of Fundy, on North side, to head of Cumberland Bay. The Bay is well lighted and provided with fog whistles. I know of no safer channel to navigate, than from Rockport to AuLac.

WILSON ESTABROOKS.

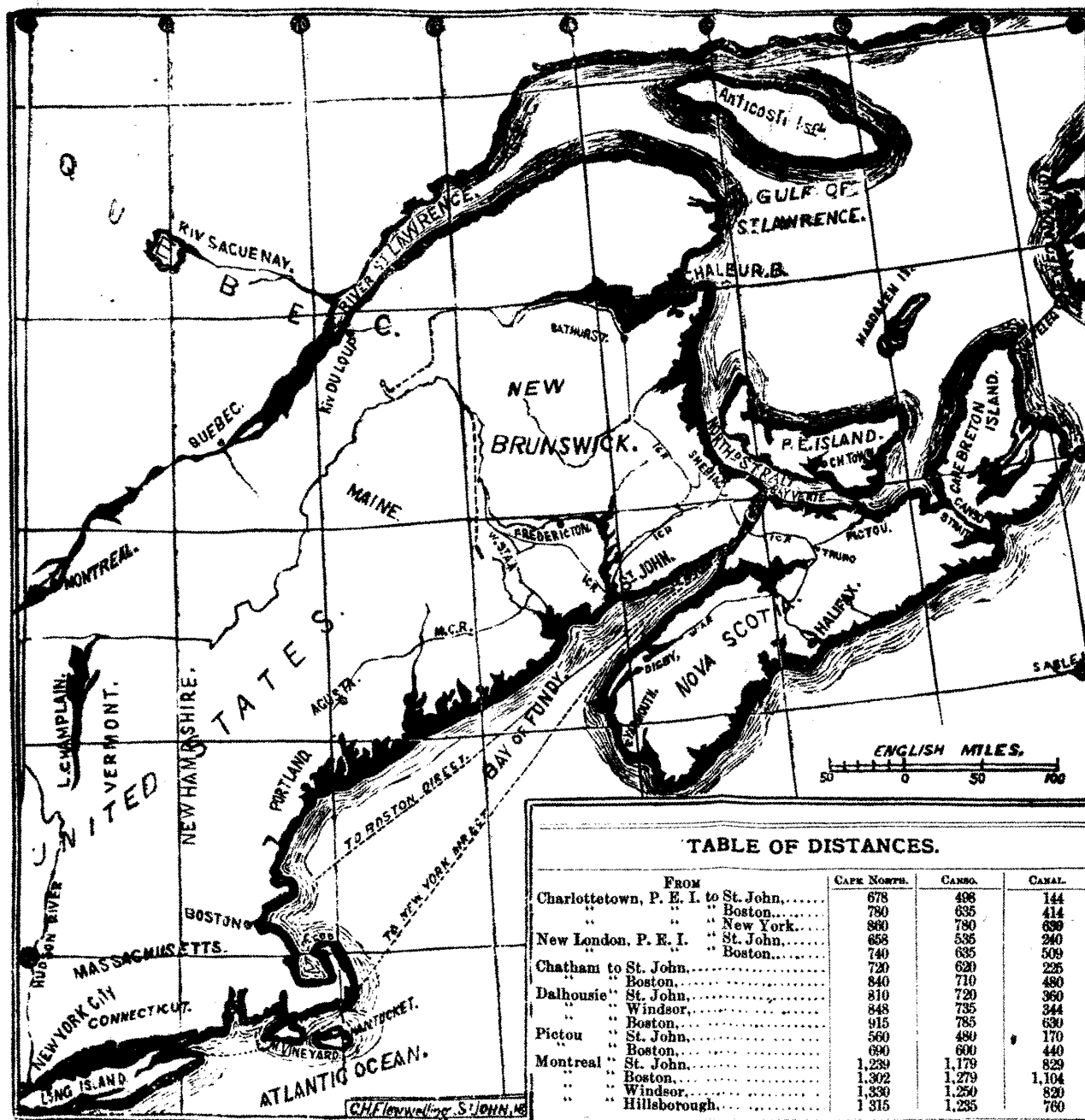


TABLE OF DISTANCES.

FROM	CAPE NORFOLK.	CANAL.	CANAL.
Charlottetown, P. E. I. to St. John,.....	678	498	144
" " " Boston.....	780	635	414
" " " New York.....	880	780	639
New London, P. E. I. " St. John.....	658	538	240
" " " Boston.....	740	635	509
Chatham to St. John.....	720	620	225
" " Boston.....	840	710	480
Dalhousie " St. John.....	810	720	360
" " Windsor.....	848	755	344
" " Boston.....	915	785	630
Pictou " St. John.....	560	480	170
" " Boston.....	690	600	440
Montreal " St. John.....	1,239	1,179	829
" " Boston.....	1,302	1,279	1,104
" " Windsor.....	1,330	1,250	820
" " Hillsborough.....	1,315	1,285	760