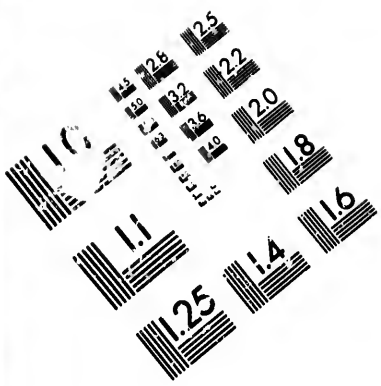

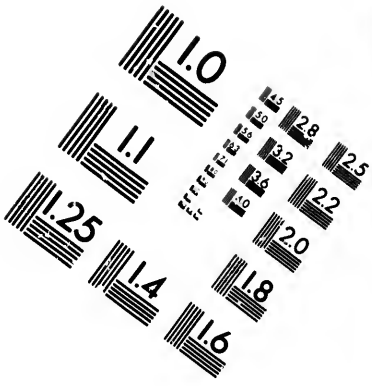

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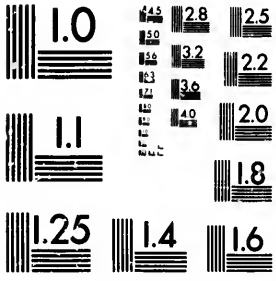

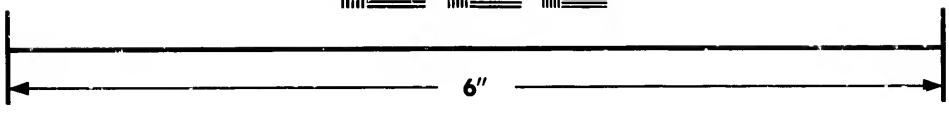

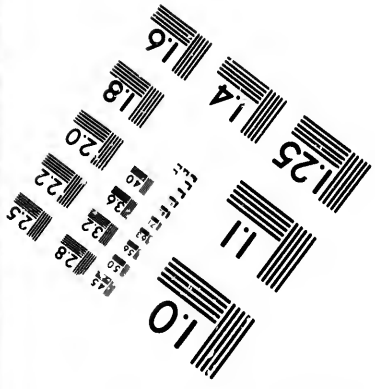

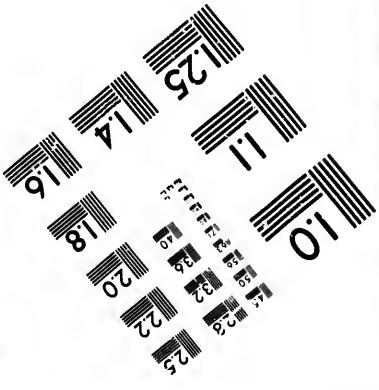

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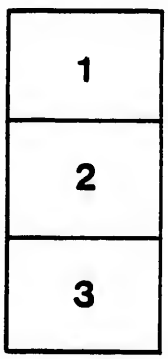

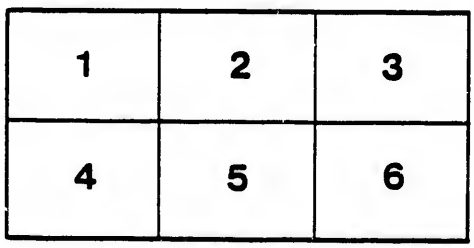

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4.

CANADIAN PUBLIC WORKS.

THE

ST. LAWRENCE CANALS

AND

THE CARRYING TRADE OF THE NORTH-WEST.

BEING A REPRINT, WITH ADDITIONS AND MODIFICATIONS, OF ARTICLES ORIGINALLY PUBLISHED IN THE "SOUTHPORT DAILY NEWS" AND "MANCHESTER EXAMINER AND TIMES," DURING THE EARLY PART OF THE YEAR 1877.

BY

R. R. HATHORNTHWAITE.

SOUTHPORT:
PRINTED AT THE "SOUTHPORT DAILY NEWS" OFFICE, 13, NEVILL STREET,
1877.

PREFACE.

In an exceedingly able and comprehensive article that recently appeared in the *Fortnightly Review*, Professor Goldwin Smith enlarged upon "the difficulties which beset the union . . . of two countries in different parts of the world, . . . bound together by no real tie of common interest, and *ignorant* of each other's concerns." There can be no doubt that the ephemeral associations of mere vague sentiment, will in themselves be found incapable of maintaining the stability without which a great Empire or Confederation cannot hope to subsist long.

Great Britain and "the Great Dominion," might certainly possess many more interests in common, if they mutually understood more of one another's position and prospects. "Ignorance of the future can hardly be good for any man or nation," as Goldwin Smith remarked, in opening his forecast of the "Political Destiny of Canada," and ignorance of the good which the future would bring forth with due exertions to attain it, cannot but be regarded as a lamentable evil to be eradicated by all the means in one's power. Even the strongest advocates of "Canadian Independence," are forced to acknowledge that England "has been a generous mother," but, unfortunately, "the old country" has not always possessed the due knowledge to enable her to guide her generosity aright.

On the one side may be noted the disastrous results of the attempt to construct and work Canadian Railways according to "English ideas," and on the other the inefficacious efforts of Canadian Statesmen, amid the disconcerting influences of factions that know no patriotism. The purport of this

publication is to endeavour to exhibit in a true light, both the responsibility that attaches to the Dominion Government, with respect to the most important department of Canadian Public Works, and also one particular direction in which British influence and British capital might be thrown with great advantage both to Canada and the future of our relations with the great grain-growing areas of North-west America. "Millions for railways—not one cent. for navigation," has been too much the Canadian policy of the past quarter of a century. The Administration of Public Works requires as a first principle, that the development of the geographical advantages of a country should be stimulated by all legitimate means, and in this point it is to be feared, the Governments of Canada, both before and after provincial confederation, must be weighed in the balances and found wanting.

An account is hereafter given of the previous expenditure upon, and present condition of, the capacious water-line of the St. Lawrence and the Western Lakes, with the object of proving that a link of water communication is imperatively called for with the seaboard of the Eastern States, and that such a connection which can be readily supplied, would place the principal advantage of the immense carrying trade resulting therefrom, to the credit of Canada. The writer, who has lately inspected the St. Lawrence Canals, and examined the country lying along the boundary line of the Province of Quebec and the Eastern States of America, hopes that if any readers, whether English or Canadian, should come to the conclusion that the advantages which he has pointed out cannot be acquired by Canada as long as she is under British rule, they will carefully bear in mind that *they* advance a practical argument, and *not he*, in favour of annexation to the United States.

May 3rd, 1877. R. R. H.

THE ST. LAWRENCE CANALS

AND THE

CARRYING TRADE OF THE NORTH-WEST.

In the great question of "cheap transportation," the unsettled condition of which is at the bottom of the excessive competition that continues to disturb the relations of States and of public companies in the West, an important factor has been present in the resources of the St. Lawrence route, if a Statesman could have been found sufficiently sagacious, powerful, and fearless—and it may be added, sufficiently patriotic—to have taken the matter in hand with the determination of effecting a solution favourable to the interests of the Dominion and of Her Majesty's subjects in North America. How ill-advised has been the policy of the Grand Trunk Railway Managers in bidding for traffic that could never benefit the shareholders of the company, and the attempt to compass which has really been detrimental to the local trade of the provinces of Quebec and Ontario, I have shewn in a previous communication; and I will now endeavour to prove that if a fraction of the immense and unproductive capital of 300,000,000 dols. invested in Canadian Railways had been judiciously employed in enlarging the St. Lawrence and Welland Canals, and in carrying out some needful extensions that have been proposed during the past quarter of a century, the commercial centres of the Dominion would now have occupied a far more commanding position with respect to the grain-producing areas of Western America, and the

costly rivalry among railway and water routes would never have distracted commerce and upset the equilibrium of business both in the United States and in Canada.

It is remarkable that whenever an opinion has been given in detail by any acknowledged authority, public or private, with respect to developing or extending any portion of the St. Lawrence route, the authority almost invariably preferred to approach his subject by way of that mighty plateau, beyond the western lakes, "the territory surrounding which, in the salubrity of its climate, in the fertility of its soil, and its various productions, combines advantages superior to those of any other portion of the globe." Now, unless the principal object of the engineering projects under consideration had been to secure closer communications with the area in question, there would have been no purpose in leading off the inquiry with an examination of its resources and geographical approaches. A still more striking fact is that engineers and public officials, after closely discussing the rival advantages offered by other water and land routes to the grain-producing provinces of the West, have always summed up strongly in favour of the lake and river route in the possession of the Dominion, and have confidently recommended any well-advised scheme that had for its object the furtherance of this line of communication.

Turning to the introductory sentences of two important works that I have at present before me—namely, the Report on Montreal Harbour delivered by eminent engineers in 1857, and Mr. Patterson's latest annual report on the Commerce of the Dominion, I find prominence given to the facts that "Montreal is 120 miles nearer to the ports on the lakes than are any of the other seaports on this Continent," and that "the distance from Chicago, or from any other lake port to Liverpool, is 480 miles less via Montreal

than via the port of New York." Further, it is established beyond all doubt that the rivers and lakes of Canada, whilst affording the most convenient waterway from the Western to the New England States, also "connect, in the shortest possible distance, by means of the most capacious, speedy, and economical mode of communication to the ocean, the greatest food-consuming country in Europe (England) with the greatest food-producing country in America—inhabited by the parent and offspring of the most favoured race of men."

If then these peculiar recommendations belong to the river-gate of the St. Lawrence, whether considered with reference to communications with the Eastern States of the American Union, or with the civilised nations of the Eastern Hemisphere, the leading inquiry becomes: "What obstructions have interfered with the progress which the river-route and its principal port ought legitimately to have attained in comparison with the land and canal routes, and the principal seaports connected with them in the States?" It is certainly the duty and the privilege of the Government of every country to make the most of the geographical advantages which nature has placed to their account; and the great question, therefore, upon a truthful answer to which the statesmen of the Dominion must be judged, is: "Have you done your best to develop the natural advantages of the Canadian water-route in proportion to the requirements of traffic and the circumstances of your position?"

There have been times during the past fifty or sixty years when Canadian legislators and capitalists have apparently been conscious that the St. Lawrence route was the golden avenue to Western traffic, but no steadiness of policy characterised their efforts in developing this route; and during the past quarter of a century in particular, the interests of the canals

seem in a great measure to have been passed over in favour of railways. That a precious opportunity for securing a splendid and lucrative monopoly has so far been permitted to go by unimproved, is a fact hardly to be questioned by the most devoted admirer of Canadian Governments; and if a tendency has been evinced in the course of the past three years to pursue a more enlightened policy with regard to the great water high-ways, there is still considerable room for doubt whether the members of the Dominion Cabinet really appreciate the full requirements of the St. Lawrence and its associated system of canals, and whether also the due energy is being exercised in carrying out the plans, the outlines of which appear, illustrated by maps and statistics, in the general report of the Minister of Public Works.

Before entering into a detailed account of the characteristics and existing deficiencies of the St. Lawrence Canals, I may be allowed briefly to allude to two Northerly Canal Routes, which have been proposed for the passage of traffic from the Lakes of Michigan and Huron to Montreal. One is called the Toronto and Georgian Bay Line, and would effect a junction between the Lakes Huron and Ontario by the course of the Trent River and its associated canals, making the distance between Montreal and Chicago, by way of Lake Simcoe, to be about 1050 miles. The other, which is still more direct, takes the line of the French river and the Ottawa, and reduces the distance of Montreal from Chicago to 980 miles. On the map these routes seem both feasible, and also in theory would press for acceptance before the St. Lawrence and Welland route, which is 1348 miles, but on further inquiry, and after particular conversation with engineers and the commanders of lake propellers acquainted with the merits of the several routes, I am able to state that the engineering difficulties of the two former routes are almost insuperable, and that

only after an extraordinary and unreasonable expen diture could they be adapted to other than vessels of limited tonnage, while after all the line of Erie and the St. Lawrence possesses the greatest stretch of open navigable water, and at the same time comprehends within one route of communication, the starting points of Chicago and Milwaukee, besides the Erie ports of Toledo, Cleveland, and Buffalo, and also the Ontario ports of Hamilton and Toronto. If, therefore, the advantages of the latter route are so exceptionally great, why has it not shown more distinct signs of finally outstripping all competitors in the race for the "carrying trade" of the western grain-producing States? Is the closing of navigation in winter a fatal objection to the attainment of this object? If so, all the canals that communicate with these regions labour under the same disadvantage. And yet the shrewd and clear-sighted Americans have taken an extraordinary amount of pains in establishing water lines through the States of New York and Pennsylvania—water lines, that, notwithstanding the terrible rivalry of competing railways, still convey about half the produce to the eastern seaports. References to the annual reports of commerce prove that the receipts of grain at Montreal have increased by about 50 per cent. during the past ten years—that is, the traffic of the waterway and railroad of the St. Lawrence has only just kept pace with the increase of production in the West, and of delivery at the American ports in the aggregate. A hundred and fifty million bushels of grain are annually transported from west to east, and of this amount about twelve million bushels proceed to Montreal by water, and less than five millions, on the average, by the Grand Trunk, making in all about 12 per cent. of the total "crop movement" from the West.

Is this all that patriotic Canadians have a right to expect of the great river which Providence and

national valour have secured in their possession? If so, some disadvantages—inclusive of official dilatoriness—must exist side by side with the natural advantages which local optimists extol in the abstract, leaving strangers to undeceive themselves by gradually hunting out the objections in the concrete. What say the Blue Books of the Dominion Government with respect to the characteristics of the St. Lawrence route? Again and again the following information is repeated: "From the Atlantic via the Straits of Belle Isle, the river and lakes to Duluth, at the head of Lake Superior, the distance is about 2400 miles, of which there are at present in the aggregate to the lower end of Lake Erie, 70¾ miles of canal, and a total rise at different points of 544½ feet, overcome by means of 54 locks." The strength of a chain is that of its weakest link; and the capacity of a line of water-communication equals that of its shallowest and least navigable portion.

The key to the value of this Canadian water-route is to be found in the 70¾ miles of canal and the 54 locks. It is officially announced that "at the present time the main line can be navigated by vessels of 500 tons throughout, and vessels drawing more than 20 feet of water can ascend to Montreal, a distance of 986 miles from the Atlantic." Steam propellers of 800 tons are supposed to be able to navigate the St. Lawrence; but on the authority of transportation records it appears that propellers carrying 16,000 to 17,000 bushels to Kingston, can only proceed onwards to Montreal with from 10,000 to 12,000 bushels, while river barges, which are towed to Montreal with from 18,000 to 20,000 bushels each, do the greatest portion of the river carrying trade.

Peculiar difficulties are always found to operate against efforts put forth in the infancy of any particular department of a country's trade, especially if there is competition with long-established routes and

with populous and prosperous cities. But in order to achieve success under such circumstances, the advantages offered by the rising community must be undeniable, and such as no rival can call in question. The transportation of grain from the west to Montreal must in a great measure be limited by the capacity of the ocean vessels that frequent the harbour, and since it seems to be an accepted fact (at all events, in the Montreal Corn Exchange) that ocean vessels cannot earn profits by shipments of grain at the rate of five shillings a quarter, therefore grain cargoes for Liverpool and Glasgow cannot be regarded as other than "return freights," which are received to diminish the total expenses of a voyage, but which in themselves could never support a line of ocean transports.

The greatest part of "the breadstuffs" transported to Montreal being intended for Great Britain, it therefore follows that the amount of Western traffic to Montreal can only be augmented by increasing the number and tonnage of sea-going vessels, which depend principally upon the growth of direct trade between Europe and the Dominion. No doubt as greater trade is opened up between Europe and the North-Western States of America by way of the St. Lawrence, the tonnage of sea-going vessels at the port of Montreal will be increased, and the traffic in breadstuffs will grow in the same proportion. But a more pertinent inquiry is that referring to the traffic between the New England States and Western America, a great proportion of which might naturally be expected to take the route of the St. Lawrence. The amount of this particular traffic, both by the Grand Trunk and by the St. Lawrence Canals, is found, however, to be merely fractional; and the fact may be accepted as demonstrated beyond all doubt, that the connections of the Grand Trunk Railway with Portland and the New England States can never prove the medium of conveying any appreciable share

of western traffic, either on through bills of lading or by combined water and railroad rates, to the Eastern States of America through Canada. Before, therefore, any considerable improvement is to be expected in the St. Lawrence department of traffic, the water route must permit of much closer, more direct, and more extensive trade communications—both between Europe and Chicago by way of Montreal; and also between the New England States and the ports of the Western lakes—than those which at present exist.

In the reports of Engineers and Commissioners of Public Works, who have examined into the conditions of traffic on the St. Lawrence and Welland Canals, prominence is given to the observation that railways "have proved to be formidable competitors with *water-lines of limited capacity* for the Western trade." Statistics prove that the New York Central and Erie lines have for some years past carried double the quantity of vegetable food that went by the Erie Canal. And although the Welland and St. Lawrence route is evidently well able to hold its own with the Grand Trunk Railway, yet it has had no chance, under existing conditions of capacity, of snatching any considerable portion of traffic from the American lines. Complaints, both loud and deep, resound at present among the proprietors of upper lake propellers, whose principal business has been to convey produce from Chicago and Milwaukee to Buffalo and Port Colborne; and the owners of "the thirty steam propellers," of limited tonnage, that ply between Chicago and Montreal, are not earning very large profits. Rates of freightage have been reduced by one-half in the upper lake trade, and all on account of the position of rivalry assumed by American Railways and the Grand Trunk, and also, it must be specially noted, on account of the bottle-necked obstruction constituted by the Welland Canal, which will not permit vessels of 1000 or 1500 tons to steam onwards into Lake

Ontario. The enlargement of the Welland is, however, only the first step in the direction of developing the Canadian water-ways, for if this were accomplished and the St. Lawrence communications left unimproved, a vast accession of traffic to the Oswego and Ogdensburg routes would be the principal result of the undertaking. The Erie Canal, it is true, would be thrown still further into the shade, and the Michigan, Ohio, and Pennsylvania Railways would lose their principal lever of competition, but the Dominion of Canada would at the same time be playing into the hands of the New York Central and of the projectors of the Oneida Lake Ship Canal.

A further enlargement of all the St. Lawrence Canals and the deepening of the river channel at several important points must increase the facilities for trading between Chicago and Montreal, and consequently between the lake ports and Europe, but would still leave the State of New York almost in the monopolised possession of the carrying trade with the New England States, which annually receive upwards of 40,000,000 bushels of grain from the West.

Does the Dominion Government expect that any other advantage besides that of gradually increasing the trade between Liverpool and Chicago would be derived simply by the enlargement of the St. Lawrence and Welland Canals, or that any immediate return, at all proportionate to the outlay, could be acquired from that source alone? Are the statesmen of Canada, the leading minds of Ontario, the active speculators of Montreal, content to fight under circumstances comparatively disadvantageous for a slowly growing and tediously developed traffic—or are they not ready, backed in their enterprise by the sagacity and capital of "the old country," to make the requisite additions to the system of canals, for competing successfully with their Republican neighbours, and securing on remunerative terms the lion's share of the whole "carrying trade" of the North West?

FROM MONTREAL TO LAKE ERIE.

It was my original intention to have included in this communication a particular account of a trip made at the end of October, from Montreal to St. Catherine's, in one of the last propellers, for lake Michigan, previous to the closing of navigation. As I find, however, that the description would take up more space than is consistent with a paragraph in an article the purport of which is statistical, I will simply quote the details bearing upon the length and capacity of each canal. Steamboats that carry passengers shoot the rapids in making the down trip, and only pass through a certain number of canals in proceeding up the stream. But barges and loaded propellers passing upwards are almost entirely dependent upon the canals, and it is consequently in taking the upward trip in a propeller —which no mere excursionist would probably care to do—that an opportunity is afforded for inspecting all the canals.

The Lachine Canal, through which the traffic both of the St. Lawrence and the Ottawa is conveyed to Montreal, opens into the harbour, in front of the Commissioners' office, by two mouths, the largest of which has just been completed, and possesses a depth of 18 feet, in order to admit ocean vessels into the large basin above. Two new basins are also in course of construction westwards, and the total cost of these extensions connected with the Lachine Canal will not be less than 2,000,000 dols. Alongside the canal, on the outskirts of Montreal, appears a grand array of mills and foundries, including corn mills, rolling mills, nail, auger, bitt, bell, and barrel factories, to the number of between forty and fifty, representing a capital of not less than 5,000,000 dols., and the machinery of which is worked by means of "turbine" water wheels. For the past twenty years the canal has had a width of 120 feet on the top, 80 feet at the

bottom, and a depth of 10 feet, but operations are now in progress, which will give the canal 200 feet width for 2 miles from the harbour, and for the rest 150 feet upper width, 100 feet lower, and a uniform depth of 14 feet. The length of the canal is 8½ miles, and it contains four locks. Its enlargement has cost Mr. John Page, the principal engineer, and also Mr. Sippell, the engineer stationed at Montreal, a world of pains in drawing up plans and estimates; and the expenditure on the whole undertaking, inclusive of the 2,000,000 dols. beforementioned, will be almost 6,000,000 dols., which is more than double what the Lachine Canal cost from 1815 up to 1875.

A course of 15 miles—plain open sailing through the lake of St. Louis, brings the propeller to the entrance of the Beauharnois Canal, which lies on the south shore of the St. Lawrence; was constructed in 1842; possesses nine locks, each of 200 feet long and 45 feet broad; and is almost 12 miles in length, clearing the Cascades, Cedars, and Côteau Rapids. The width of the Beauharnois is the same as that of the unenlarged Lachine, and for the present no scheme of enlargement is on foot, though, if upper lake propellers are to come to Montreal and to Caughnawaga, the capacity may turn out to be insufficient. For twenty miles above the Beauharnois Canal, the propeller ploughed through the open expanse of Lake Francis to the manufacturing town of Cornwall, where the canal bearing that name opens inwards on the north shore, and extends for 11½ miles, avoiding the Long Sault Rapids, and having the dimensions of 150 feet upper width and 100 feet lower but requiring considerable improvements in connection with the locks to insure the safe passage of large craft. The construction of three new locks near the eastern entrance, together with "the deepening and enlargement of the summit level," has an approximate esti-

mate of more than 2,000,000 dols. appended to it in the Ottawa Blue Books. In the space of about twenty miles above the Cornwall Canal on the north shore are the Williamsburg Canals, by which loaded vessels, unable to ascend the rough water of the stream, cut in and out three times, so as to avoid the Farran's Point, Rapide Plat, Iroquois Point, and Galops Rapids, the total length of this set of canals being 8½ miles, the width 90 feet at the top, 50 feet at the bottom, and the depth not much more than 6 feet; six locks lie in their course, and an estimate of another two millions is standing against them in the Blue Books, though Mr. Page thinks that the adoption of "the chain tug system" with certain vessels might obviate the necessity for the enlargement of these canals. Both the Canals and the Rapids of the St. Lawrence will evidently require great attention at the hands of engineers before propellers of 1000 or 1500 tons burden can regularly ply between Lake Michigan and Montreal. It is the intention of the Dominion Government, however, ultimately to give a depth of 14 feet or 12 feet at least to all the canals, and to render the locks 270 feet long by 45 feet broad.

The incidents of progress from the Galops Canal, through river and lake to the head of Ontario, including a detention of several hours on account of a dense fog, and the variety of a severe thunderstorm on the lake, suddenly bursting upon us from the bosom of the mist, might possess interest in general descriptive writing; but having a special end in view, I skip all intervening particulars, and with the propeller bound west, approach the rocky isthmus between Erie and Ontario, and steam up the twelve-mile creek into the Welland Canal, till on the mountain ridge of the ascent between St. Catherine's and Thorold, which is made by a complete staircase of locks rising one above another to the number of

about twelve in the space of a mile, I leave the propeller to go on her way to Cleveland, and halt upon this link in the "water-ways," which is really the key to the traffic from the upper lakes. The Welland Canal is 27½ miles long, and contains 27 locks, being fed with water by means of a branch extending to Dunville and Port Maitland, on the Grand River, northwards. The summit level cutting, through the midst of the Niagara limestone, has been a source of difficulty on account of slips and slides, which, however, as the Blue Book relates for the consolation of engineers, seldom takes place a second time on the same spot.

At Port Colborne is the principal entrance of the canal into Lake Erie, but the canal also communicates with the lake by the feeder at Port Maitland, and by the Welland river from Port Robinson to Chippewa on Niagara river. Elaborate as are the contrivances to keep the canal open for traffic in dry weather, it is still utterly unequal to the requirements of a main link in the system of sea lakes and river navigation, and the terms of Mr. Page's recommendations make it clear that while an enlargement can be effected generally along the upper parts of the canal, it has been long understood that a new line, either in part or as a whole, must be formed from Thorold downwards by St. Catherine's to Port Dalhousie on Lake Ontario. The main work of constructing the new canal-section has not yet been carried out, and some portions of the intended enlargement are indeed not under contract, though the outlet at Dalhousie has already the required depth, and the lightening of the east bank of the deep cutting between Allanburg and Fort Robinson had been satisfactorily completed. The Welland Canal was first made in 1821, and then enlarged in 1841. It is not too much to say that if the geography of this portion of the earth's surface had been entirely under the control of the Americans,

this canal would have been adapted to the passage of upper lake vessels, of the largest size, years ago. If the Canadians are just now wakening up, it is to be hoped they will remain awake.

EXPENDITURE AND RETURNS UPON THE ST. LAWRENCE AND WELLAND CANALS.

Such being the present condition of the canals, a peculiar interest belongs to the inquiries, When will the enlargements be effected? What amount of capital is represented by the canals, and what is the sum total of the various estimated amounts for enlarging them? And what—in the light of past experience—will be the probable result of these improvements, considered from a financial point of view? On paper, the hope of John Page, Esq., Chief Engineer, Public Works, stands recorded, with the date 1875, that the work might be complete, "for the enlarged scale of navigation to be opened by May, 1879." In the view of the progress so far made, an observer may be allowed to express a doubt as to the completion of the great work by that time; and the manager of a Montreal "forwarding company" did say the other day that "we should be all dead and gone" before the canals were enlarged up to the scale talked of. The most charitable view of the intentions of Government is the best, perhaps, that can be taken under these circumstances until events declare themselves. The capital invested in the canals, and in improving the upper channels, up to the time when the extensions were projected, is represented in the following addition sum, where the names of the canals are placed opposite to the items expended:—

ORIGINAL CAPITAL.

	Dols.	Cents.
Lachine	2,587,532	85
Beauharnois	1,611,424	11
Cornwall and Williamsburg Canals, and Lake St. Clare Flats	3,882,018	39
Welland Canal	7,416,019	83
Total	15,496,995	18

When compared with the tremendous amount of capital absorbed in railways, what a *bagatelle* does the above represent as expended over the magnificent and unparallelled route of the St. Lawrence and the Lakes! The estimated cost of the proposed enlargements is now included in the following separate additions, the figures being obtained from official sources :—

ESTIMATED ADDITIONAL CAPITAL.

St. Lawrence Canals.

Lachine	5,920,347	dols.
Cornwall	2,160,000	,,
Williamsburgh	2,110,000	,,
Improvements in St. Lawrence Channel	1,520,000	,,
Total over St. Lawrence	11,710,347	,,

Welland Canal.

Port Colborne to Thorold	4,060,000	,,
Continuation to Dalhousie	5,180,000	,,
Total over Welland Canal	9,240,000	,,

St. Lawrence Route and Welland Canal together.

Total additional	20,950,347	dols.

No objection could be alleged to the expenditure of this further amount upon a work of such importance, if the outlay did not seem to come rather late in the day, and if, notwithstanding, every care had been taken to secure the object of the extentions. But, looking at the financial returns of former years, one cannot be very hopeful of the future of "the great water-ways" unless a new policy of comprehensive enlightenment should be adopted by the Government. By adding up the returns given in the General Report, it appears that the gross revenue of the St. Lawrence Canals for a recorded period of eleven years was 1,052,489 dols. 63 cents, and since the deductions for the same period amount to 1,039,649 dols. 60 cents, the net revenue for eleven years was 12,840

dols. 3 cents. The net revenue of the Welland Canal during those eleven years was 1,212,556 dols. 22 cents, so that the combined returns on the St. Lawrence and Welland Canals together have been 1,225,396 dols. 25 cents, during eleven years, and the former sum being divided by 11 gives 111,399 dols. 66 cents, as the average annual return on the capital. Hence the St. Lawrence Canals in themselves have never paid a tenth of 1 per cent., and the St. Lawrence and Welland together have only paid about two-thirds of 1 per cent.

This result is far from being satisfactory, and it can hardly be expected that an outlay of 20 million dollars will restore the financial balance, unless another outlet be obtained for the St. Lawrence traffic. Grain freight passes through the Welland Canal and the St. Lawrence Canals to Montreal at the toll rate of 20 cents per ton, and 4 cents per ton is the regular toll on boats. It is not improbable, therefore, that as grain transportation, with the resulting trade alongside it, continues to increase, that every additional hundred bushels of grain brought to Montreal means another dollar gained to the Dominion Treasury. Besides, as Mr. Page wrote in 1872 and 1875, "a large and profitable part of such extensions is the actual carrying trade itself," together with the increased employment of "mechanical and skilled labour in the building and equipment of vessels and in other branches of service," whereby "the interests of a very large and important portion of the community are promoted, and the country benefits very considerably." At present the lake and river rates to Montreal from Chicago and Milwaukee are eight cents a bushel by barges and propellers; and if the proposed improvements brought thirty million bushels to Montreal, an amount which is rather in excess of the present transporting powers, the forwarding companies of this city would have no reason

to feel sorry, though at the same time no adequate return would be obtained for the capital invested by Government, nor would the St. Lawrence route be placed in possession of its due share of the 150,000,000 bushels to be conveyed from the West. The fact is, that an additional water-line, supplementary to the St. Lawrence, and possessing a capacity that for all purposes of navigation might be regarded as unlimited, is imperatively required in order to place the transportation service of the Dominion in close communication with the Eastern States; and *such a line* the merchants, ship-owners, and manufacturers of Montreal may have almost at their very doors, if they will only use their eyes, and agree to think outside the narrow circle of their own fancied ephemeral self-interest.

CAUGHNAWAGA SHIP CANAL.

ITS NECESSITY: ITS PRACTICABILITY: AND ITS PROSPECTS.

Those who are acquainted with the map of the country lying south-east of Montreal, will be aware that the natural water-line constituted by Lake Champlain and the Richelieu River runs almost on a direct meridian of longitude for 192 miles from Sorel on the St. Lawrence to Whitehall at the head of Lake Champlain. Now if this stretch of water had communicated more directly with the course followed by propeller and barge traffic from the west, and if no impediment to the progress of vessels of considerable burthen had existed in the Richelieu, then no more advisable route could have been found for connecting the resources of the West with the powers of consumption and production in the Eastern States. But nature, after taking the first steps towards bringing East and West together, has stopped short and left financial and engineering sagacity to take up and

complete her work. The promontory that stretches northwards between the Island of Montreal and Lake Champlain as far as the mouth of the Richelieu, prevents the boats of the Upper St. Lawrence and the Ottawa from approaching Lake Champlain except by a very circuitous route. And impediments to navigation in the Richelieu River, between Chambly and St. John, necessitated the recourse to a canal, which is about twelve miles in length, and has been used specially for the transmission of Ottawa lumber to the New York and New England States, but which is only adapted to vessels of 300 tons burthen. The watershed that separates Lake Champlain from the Hudson River also stands in the way of a natural line of navigation between New York and the St. Lawrence. Here "the missing link" has been to some extent supplied by the Champlain Canal, which, however, only affords a depth of 5 feet on the sills of the locks. Such is the present unsatisfactory condition of the water-lines connecting the St. Lawrence with the Eastern States. The completion of a through route to New York by water rests with the American Provincial Authorities, but the opening up of a direct line of communication between Lake Champlain and the upper St. Lawrence lies in the hands of the Dominion Government. An inquiry of great moment to the future of Canada is, therefore, whether a practicable route can readily be found for such a canal, and whether the Ottawa cabinet would be justified in taking up the scheme, irrespective of the intentions of the State of New York.

In the country between Lake St. Louis and Chambly, on the Richelieu, it can be shown that a most satisfactory route exists for a ship canal, which would extend from Caughnawaga, immediately above the Lachine Rapids, to a convenient point on the Chambly Canal, near the town so called. This route skirts along the edge of the rising ground, and on

that account presents the utmost facilities for the construction of a canal,—an inclination that could be obviated by no more than two locks, being found in the course of about twenty miles. All the engineering requirements of a line of communication are satisfied by this scheme, which would cut off the Richelieu promontory, and bring the upper St. Lawrence and Lake Champlain into close connection, at the same time necessitating no extravagant outlay for the securing of a water-way of unlimited capacity. The distance of the entrance to this canal from Montreal would be about 9 miles; and while the circuitous route by the mouth of the Richelieu, from Lachine to St. John, is 113 miles, and includes 114 feet of lockage up and down, the Caughnawaga Canal, along with the enlarged Chambly, would only involve 30 miles with 25 feet lockage. So pressing did the necessity for such communication appear, so long ago as 1847, that the Hon. J. Young, of Montreal, and some of his friends, then applied for and obtained a charter to construct this canal, the preliminary surveys for which were executed by Mr. Mills, C.E., in the following year. The Earl of Elgin, who was Governor of Canada at the time, expressed his approval of the scheme; and every Commissioner of Public Works, and every engineer who has examined the subject, unhesitatingly recommended its adoption. Notwithstanding these favourable recommendations, thirty years have strangely been permitted to elapse without any resolute official effort to make this great addition which is so imperatively called for in the system of Canadian canals.

In a previous paragraph I shewed that the enlargement of the Welland Canal would tend to stimulate the development of the American port of Oswego, unless a separate and more direct outlet was obtained for the traffic of the St. Lawrence in the direction of the Eastern States; and since these

views were advanced in the public press, I have had the opportunity of reading the latest remarks of the Hon. J. Young on the subject, in which he says that "past Governments of Canada, as well as the present Government," have, in his opinion, been "doing their best, without intending it, to build up the port of Oswego" by the improvements which they have effected in the western portion of the lake and river route. It is doubtless on this account that opposition has been evinced on the part of the Oswego Board of Harbour Commissioners to the propositions for opening up the Champlain route to Albany and New York, but in spite of all the diligently acquired evidence which has been advanced in favour of the Oneida Lake Canal between Oswego and West Troy, the superiority of the latter route has not been demonstrated in any one particular. Indeed, whether time, freight rates, or capacity be taken into account, the Caughnawaga Canal, with the connected line of the Richelieu and Lake Champlain possesses an undoubted superiority over every other water-route that could be proposed with the same object. So clearly was the Caughnawaga scheme perceived to be closely allied to the prosperity of Canada, and the advancement of the carrying trade that finds its motive power in Montreal, that the advantages of the proposed canal were exhibited in glowing colours by a Commission of Civil Engineers, who reported upon the improvement and enlargement of Montreal Harbour in 1857. One of the engineers has, it is reported, since changed his views, and advised the development of the Oswego route in preference, but the influence usually at the command of American rings must be duly taken into account before stress is laid upon his arguments, which can readily be understood to have been swayed by bias in favour of his fellow-citizens, and which the Hon. J. Young, Chairman of Montreal Harbour Commissioners, demolished in a series of

letters published in the *New York Times*, Nov. 1873. On several occasions the Champlain route has of late been officially reported upon, and always in favourable terms. W. Shanly, Esq., C.E., the projector of the Hoosac tunnel, writing in 1874, says: "I have always thought the Caughnawaga Canal an essential and naturally necessary link in—and therefore a blundering omission from—our general canal system. Had the Caughnawaga Canal been made, as it should have been, immediately following Mr. Mills' survey in 1848, we would, all these years, have been doing a large carrying trade for the New England States instead of a limited one for Montreal; doing an immense forwarding business in place of what,—in comparison with what we might have had,—has been, and even yet is, an insignificant one." A favourable opinion from a rival source, which will now be quoted, may justly be accounted of the greatest possible weight. Several Americans of authoritative standing have recommended the Champlain route in high terms, and among the rest Alexander Berkley, Canal Commissioner of the State of New York, who, in March, 1875, remarked in his report that "the Champlain is the only practicable route for a ship canal," which in this case would practically be of unlimited capacity,—being "the crowning work of our great system of internal improvements, and the only possible solution of the great question of furnishing an outlet for the teeming granaries of the west." The special object of the Canal Commissioner in the above remarks was to advocate a new Champlain Canal of 17 miles long, on the scale of the St. Lawrence and the proposed Caughnawaga Canals, and he estimated the cost of the Hudson River improvements and the Champlain Canal together to be about 11,000,000 dols. To construct the Caughnawaga Canal of 22 miles long, and enlarge the Chambly Canal, in both cases up to the standard required for upper lake propellers,

would cost about 6,000,000 dols., according to the estimates of Hon. J. Young and Mr. Shanly.

Readers will now be able to judge of the comparative burdens to be sustained by the Canadian and American Governments, in perfecting a through water route to New York from the western lakes; but it must not be forgotten that the Caughnawaga Canal in itself would open up communication with the New England States, which annually absorb some 40,000,000 bushels of the produce of the west.

At the present reduced rates of railway transit from the west—being below the possibility, it is considered, of honest profits—grain is conveyed from Chicago to Portland at 40 cents per 100 lbs., and at 5 cents less to New York. If the Champlain route were open to propeller and barge traffic, which would include a large return trade in mineral and manufacturing products, it is probable that the tariff of delivery in New York would be no more than 25 cents per 100 lbs., and perhaps 20 cents in the New England States—thus taking the grain trade for all practical purposes out of the hands of the Railway Companies, which might still, however, retain a considerable share of the flour and meal traffic. Surely no involved argument, intelligible only to mental discernment of the transcendental order, is required to shew that the Caughnawaga Ship Canal, and *what it led up to*, would prove an unqualified advantage both to America and Canada, considered with reference both to peoples and governments. That Oswego interests should engender opposition in that department of New York State can be readily understood; but that any intelligent portion of society in Canada should be found so dull, prejudiced, and short-sighted as to stand blindly in the way of the Caughnawaga Canal can hardly be regarded as credible. Indications of opposition are, however, not wanting in the case of certain companies and financial interests, as well as indivi-

dual opinions not altogether unbiassed, in the noble and enlightened city of Montreal. Strange inconsistency is observable in the reasons adduced to bolster up local antagonism. In one quarter it is argued that the canal, if it is made at all, should open immediately into the harbour of Montreal; whereas the configuration of the country on the south shore opposite renders such an arrangement impossible. Montreal "forwarders" in another quarter, afraid at the same time that their barge interests might suffer by the enlargement of the St. Lawrence Canals, may be heard alleging that the trade of the city would be effectually tapped, if "the cut-off point for New York" were brought so near their doors as Caughnawaga, instead of being permitted to remain at Oswego on Lake Ontario. But the Caughnawaga Canal could carry away no trade that would otherwise legitimately come to Montreal, because, as I have previously shown, the European vessels in the harbour of Montreal give the key to the dimensions of the traffic in breadstuffs from the west to this port; and no more produce, except what is for local use, can come by water to Montreal than what these vessels can export, while none for which the transport was provided on the spot could be prevented from coming nine short miles through the Lachine Canal, by the existence of a 400 miles water route from Caughnawaga to New York. Opposition based on such grounds can only be ascribed to the presence of a discreditably low order of intelligence among some of the so-called commercial leaders of the largest city in Canada. The Lachine Canal, when its enlargement is complete, will, by means of the greater facilities for communicating with ocean vessels, certainly draw an increased water traffic from the west. There is at the same time no evidence of Montreal being likely to become a great storehouse for the New England States, through the operation alone of the Grand Trunk, with its

eastern and western connections; and the formation, therefore, of a capacious water route eastwards could draw away no western produce, either water-borne or rail-borne, that would otherwise stop there, though, on the other hand, it is not unreasonable to suppose that the closer communications with the country around Lake Champlain, through the intervention of the Caughnawaga Canal, would enable Montreal to tap a portion, and probably a growing and considerable portion, of New York trade.

The idea that Caughnawaga Canal ought not to be constructed, unless the State of New York, or a company formed in that State, should be willing immediately to complete the Champlain Canal and Hudson communications, deserves possibly to be treated with more respect than the former grounds of opposition, because it is through the want of an understanding between the two countries, that Sir Francis Hincks accounts in some measure for the failure of the scheme, and Sir Francis Hincks is an ex-premier of Canada, and reputed to be the highest financial authority in Montreal. On that account I will, previous to discussing objections of this character, give the result of an interview which I was favoured to have with Sir Francis on the 29th of November last.

Interviewer.—Is the projected Caughnawaga Canal to be regarded, in your opinion, as a thoroughly practicable scheme?

Sir Francis Hincks.—Yes, quite, under certain circumstances; that is, provided the State of New York performed its part in improving the Channel of the Hudson, and completing the Lake Champlain communications.

I.—What do you consider to have been the principal hindrance to its construction?

Sir F. H.—The consciousness in Montreal that unless water-communication was established with

New York, the scheme would be incomplete, and would simply tend to build up the New England railways and the ports connected with them, to the detriment of the Grand Trunk and of Montreal.

I.—Would it not conduce largely to the financial returns of the St. Lawrence Canals and also of the adjoining railways, if the Caughnawaga Canal were boldly constructed, without regarding the intentions of the American Provincial Government?

Sir F. H.—I do not think that the Canadian Railways would be benefited, whatever advantage might accrue to the canals from the scheme.

I.—Is the Mackenzie Government likely, in your opinion, to take up the scheme soon?

Sir F. H.—I think not. The scheme ought to be entirely in the charge of the Government, if it is to be proceeded with. Canals have always been treated as public works in Canada: and the private charter held by the Hon. J. Young is consequently an anomaly. The Caughnawaga Canal ought to be regarded as one link in the chain of public canals, and not as a separate private project. In the abortive treaty, the programme of which was a matter of negociation with the Washington Government, through the Hon. G. Brown, one of the provisos was that *both* canals were to be completed, and if this had been agreed upon, the Canadian Government would have been placed in a position of embarrassment by the existence of a private charter, and in fact would have had to buy out the Hon. J. Young and his company, before commencing with the canal.

I.—Do you know how the Caughnawaga Canal is generally regarded by Americans?

Sir F. H.—I think that jealousy of Canadian projects exists to a large extent in the States, and that it is by no means certain that the local representatives of New York State would agree to vote money for the purpose of completing the Champlain route.

From the foregoing remarks of Sir Francis Hincks, it appears that he is unable to allege any objection to the scheme on abstract grounds, and that one form of local opposition is grounded on the apprehension that the interests of Montreal, and of Montreal Companies, would be sacrificed to New England Railways, if the passage to New York was not obtained for propeller and barge traffic. But as I argued before, it is impossible to see how the Caughnawaga Canal could injure either Montreal or the Grand Trunk Railway. The Central Vermont Railway, with its connected line of propellers trading between Lake Michigan and Ogdensburgh, on the St. Lawrence, already holds the Grand Trunk safe at every point: and if the position of the Vermont Railway should be turned by means of the Caughnawaga Canal, through which propellers and barges would be enabled to pass southwards, and deliver their cargoes at the Lake port of Burlington for New England, why should Grand Trunk Directors disturb themselves about the altered circumstances of a powerful rival that single-handed has the advantage over them? In fact, whatever advantages the railways of the Eastern States might derive from augmented local traffic through the intervention of the Caughnawaga Canal, it is difficult to see how the Grand Trunk should lose any carrying trade worth possessing; and, indeed, if the opening of the Caughnawaga Canal should prove the means of inaugurating a new era in the management of the Grand Trunk, by putting an end to railway competition for through traffic, so much the better for the ultimate prospects of the original shares. The Grand Trunk was primarily constructed for the benefit of Canada, and not for the convenience and sport of American commission merchants; and whatever induced, and even compelled, Grand Trunk management to go on a different tack, might tend to the credit of Canada, and the welfare of the

provinces of Quebec and Ontario. I must not forget to mention that interested admirers of the present condition of affairs on the Grand Trunk, are to be found alleging that this same through traffic actually pays, by supporting a large share of the total working expenses, the result of which local customers have the benefit of,—that in fact, it is more economical to work with a large, than a small, traffic, even if unremunerative. Until, however, I can obtain exact statistics exhibiting the separate returns from local and through traffic, as well as the estimated expense of the local Canadian traffic by itself, I may be allowed to remain sceptical on the subject of through traffic being remunerative, especially since, if I err, I do so in company with Mr. Treasurer Church, of the Province of Quebec, and other authorities of standing, whose views have often been expressed both in public and in private. It seems probable also, that notwithstanding the opinion of Sir Francis Hincks, the existence of a much larger amount of through traffic on the water-line of the St. Lawrence and Lake Ontario, through the operation of the Caughnawaga Canal, would necessarily give the Grand Trunk much more to do at Brockville, Prescott, and Cornwall, and the calling places on the north shore of Ontario, if even railway business did not so far follow the superior water route as to require "several double tracks on the St. Lawrence," as the Hon. J. Young seems to expect. The arguments, at any rate, both of Grand Trunk representatives, who are against the Caughnawaga Canal, unless connected by water with New York, and of Montreal barge forwarders who condemn the scheme *in toto*, stand in the same category,—they will not hold water, when submitted to the ordinary tests of free discussion.

Some interesting facts respecting the prejudice of certain Montreal capitalists may be derived from the national and individual aspects of this great question

of the water-route. A representative of one of the Montreal forwarding companies seriously remarked, not many months ago, with regard to the scheme: "Oh, that is one of the Hon. J. Young's dreams," but added he almost immediately "When we are annexed to the States, then we shall have the Caughnawaga Canal." Here then is another argument in favour of annexation, which, it is almost a matter of regret, should have escaped the notice of Goldwin Smith, for the public might otherwise have had the benefit of an additional paragraph in the April "Fortnightly," respecting the "political future of Canada." According to the dictum of the Montreal "Forwarder," a policy which would be suitable if the political boundary line were removed, is inadmissable under Dominion auspices, and Ontario and Montreal might thus be understood to have a good financial and commercial reason for demanding admission into the American Union without delay, because the traffic along their water-lines would thereby be made ten times what it is at present. The Hon. A. Mackenzie and his political opponent Sir John Macdonald, may well pause before agreeing to petition Her Majesty to take upon herself the distinction of Empress of Canada, as long as they are informed on the authority of a leviathan barge proprietor, that such a piece of "barren honour," might prove the occasion of sacrificing to Canada—well, say, a hundred million bushels of annual traffic to begin with. But such a fallacious conclusion only serves to shew up the impotence and absurdity of the "Forwarder's" premises. Canada has, in fact, nothing to prevent her from attaining this great prize of the carrying trade of the West, under the rule of Her Majesty, whether dubbed Empress of Canada or no. "The same forms of progress," as Ward Beecher said, and as Goldwin Smith implies, "are to be found on both sides of the political line,"

and surely the Canadians are republican enough in their regard for "the rights of man," to put forward their energies to secure what nature, in the providential dispensation of lakes and rivers, has almost presented them with in a perfect water-line of unlimited capacity. As for the reference to the so-called dreams of the Hon. J. Young, the "Forwarder" has surely forgotten that the Hon. gentleman dreamed years ago of a Canadian mail-line of ocean steamships, and of the passage of vessels of more than 3,000 tons to Montreal, as well as of a railway-bridge across the St. Lawrence above the harbour; and these dreams of his have come to pass with great advantage to his country. The Hon. J. Young, who was formerly Chief Commissioner of Public Works in the Hincks-Morrin administration, and is now Chairman of the Montreal Harbour Commissioners, must fairly be allowed on all sides to be a very close observer of facts, and a far-seeing thinker in the conclusions that he derives from them. No man living can be regarded as so great a benefactor to Montreal, for all that political animus lays to his charge.

As a compliment to his general comprehensiveness and versatility of mind, he was chosen a few months ago to represent Canada at the Australian Exhibition. This selection excited much ill-feeling among Montreal manufacturers, who would rather that one of their own order should have pleaded the cause of Canadian art, trade, and manufacturers at the antipodes. Like Goldwin Smith, the Hon. J. Young labours under the suspicion of being a "nationalist;" but whatever his present views on "isolation or annexation" may be, he has been at all times ready and courteous in satisfying inquiries on numerous statistical matters affecting the future of Canada, notwithstanding the many pre-occupations of his office in Montreal harbour. After being the

first to observe the importance of a water-route to the Eastern States, and after taking the trouble to obtain a private charter for the Caughnawaga Canal, and also to procure the renewal of this charter, it hardly seems fair that he should lose all pecuniary advantage from the scheme, if it goes forward. At the same time no public good can apparently be served by his continuing to hold the monopoly of the scheme, and since the renewed charter expires this summer, the best plan would probably be for him to clear the way for the construction of the canal by resigning his right to ask for a second renewal of the charter, on the express condition of the Ottawa cabinet undertaking this great national work with as little delay as possible.

At the Chicago Cheap Transportation Convention, a few years ago, the proposition of the Hon. J. Young for the establishment of the Champlain route was most favourably received by the Board of Trade, one of the members of which allowed that the "route through the St. Lawrence and Lake Champlain would have no equal on the globe—a steam propeller of 1000 tons loading at an inland port (Chicago), and proceeding, without breaking bulk, 2000 miles to an ocean port" (New York),—and the hope was earnestly expressed that "the relations between the United States and the Dominion Government may be so adjusted that the construction of the work may be found in the interest of both countries." Little doubt need be entertained that the project would be hailed in a similar spirit by many Americans, when once active steps had been taken to commence the construction of the canal; and no hesitation need therefore be evinced by the Dominion Government in assuming the initiative, if even the provincial authorities of New York should seem to display an impracticable spirit in negociations bearing upon it. Americans have always shown a remarkable readiness

to take advantage of Canadian public works that lay in the way of their interest; and just as the development of the port of Oswego followed upon the opportunities afforded in the Welland Canal for American propellers, so would the completion of the Champlain route follow naturally upon the construction of the Caughnawaga Canal. In the meanwhile, whatever opposition might be evinced on behalf of the Oswego interests, a large share of the traffic of 40,000,000 bushels to the New England States would lie at the disposal of Canadian lines of transport, in spite of the temporary hostility assumed by New York "forwarding" speculators to the Caughnawaga Canal.

The course of the Richelieu, circuitous as it now is, has already been used for a large lumber traffic from the Ottawa, and the limited capacity of Chambly Canal has doubtless prevented it from being utilised to a greater extent for general traffic. One recommendation of the route prescribed by Mr. Mills for the Caughnawaga Canal is that the present Chambly Canal would have to be enlarged, and a capacious water-route would thus at the same time be opened up between Vermont and the Maritime Provinces of Canada, which are rich in iron, gypsum, and coal. The large amount of return freight available for the St. Lawrence western route, including iron ore, slate, marble, &c., from northern New York and Vermont, would also, as Mr. Young points out, enable the freight rates each way to be considerably reduced, and give Canada so much the more ability to compete for the trade of the west. When the through route is completed, as it will be if Canadians are independently energetic in taking the preliminary steps, the time of transit by water from Lake Michigan to New York would be about 10 or 12 days; and if each propeller made 8 trips in the season of more than 200 days' navigation, 100 propellers, every one carrying 50,000

bushels each trip, could annually convey to New York 40,000,000 bushels of western grain. A similar fleet of propellers, or partly of barges, could, during the season, deliver 40,000,000 in the New England States, and at least 20,000,000 to begin with, and in course of time 50,00,0000 bushels, at Montreal, thus giving the St. Lawrence route the advantage for financial purposes of a traffic of at least 100 million bushels of breadstuffs, being almost ten times the present traffic, besides minerals and lumber.

This is no visionary estimate of possible returns, for the traffic of 150,000,000 bushels exists now on other routes, and a great part of it can be secured for the Canadian water-line by the tariff previously mentioned. Objections may be alleged with regard to the time occupied in the water-route, but time is in this case to be overcome by the capacity for transport, because the stream of traffic would be so steadily maintained by vessels following each other in rapid succession, that a New York or New England commission merchant need not distress himself about sending orders to Chicago, or awaiting the arrival of special cargoes. Whatever he wanted in the shape of cereals would already be on the spot, or on the point of arriving in quantities of 50,000 bushels in each propeller.

It is unnecessary for me at present to enter upon the question of working expenses, or the amount of repairs arising from increased "wash" along the banks of the canals, but all these matters have formed the subject of careful statistical inquiry, and no one can pretend that I have over-estimated the future capacity of the enlarged canals, as long as such a great authority as Mr. Shanly states that the present St. Lawrence canals would not be over-taxed by seventy-five million bushels in the season, and it must not be forgotten that although a hundred miles of canal sailing, and about 60 locks, would lie

in the course of two-thousand miles between New York and Chicago, yet in the down trip from the teaming granaries of the west, the propellers would be relieved from 32 miles of canals by the projected improvements in the channel of the St. Lawrence. There is also room for economical working in the distribution of the propeller and barge traffic, since each propeller could be made to discharge more than double duty in drawing a fleet of four or five barges behind it though the St. Lawrence and Caughnawaga Canals. The exact effect of these various circumstances upon the traffic of the future will be readily estimated by practical minds, accustomed to all the conditions of inland navigation.

In the previous paragraphs I have touched upon the principal recommendations of, and the alleged objections to, the Caughnawaga Canal. The grand stake to be played for,—affecting so closely the success of Canadian Public Works, and the prosperity of commercial centres and forwarding companies—is one which, I think, I have succeeded in showing, may be won by the financial and commercial leaders of Canada, if they will consent patriotically to lay aside individual prejudices and jealousies. "Two much stress is sometimes laid upon a mere carrying trade:" was remarked to me the other day by a man of business experience, and certainly if the results of sacrificing almost everything to acquire a limited through traffic of dubious value on the Grand Trunk and other lines be taken into account, few candid observers could be supposed capable of disputing the truth of the remark. But in the case of the water-route which I have been advocating, it is no ordinary "carrying trade," which Canadians have only to put forth their hands in order to secure their country in the possession of to the end of time. More than 120 propellers engaged in the Upper Lake trade, of about 120,000 tons register, are now

unable to go down lower than the foot of Lake Erie; and how many more might not spring into existence if the Welland Canal and the St. Lawrence and Richelieu rivers did not limit the capacity of the water-communications eastwards. A traffic of a hundred millions of bread-stuffs is available almost at once, besides minerals and other freight; although there are now only ten millions of people in the productive areas around the mighty lakes of the West. How much greater will be the traffic, and how much the more the returns on the Canadian Canals, inclusive of Caughnawaga, when "the great North-West States" of America, and "the great North-West of Canada" will be peopled by fifty millions,—nay, a hundred millions. It may be argued that the Dominion is already over-burdened with debt, and has on hand a heavy engagement affecting the Pacific Railway.

The Hon. A. Mackenzie, Premier of Canada and Minister of Public Works, indeed, pleaded, less than a twelvemonth ago, that he was prevented by financial reasons from taking up the Caughnawaga Canal. But if he has been willing to sanction a vote for expending twenty million dollars upon enlarging the present St. Lawrence Canals, he is surely bound to give the same canals a fair chance of bringing a proportionate return to the revenue; and *that* they will be unable to do during the present century, unless supplemented by direct communication with Lake Champlain. "Instead of relieving the people in part of the burden of taxation and becoming a source of revenue, principally by tolls from our United States neighbours, these canals," as the Hon. J. Young pertinently remarks, "will continue to be an annual loss, and unable to yield even a small part of the interest on their cost." The original capital sunk in these canals was, as I showed before, 15,000,000 dollars; and the sum of 20,000,000 dollars, exclusive of the interest

lost on the previous capital, has lately been voted for enlargements and improvements. Canada has thus resolved to sit down with 35,000,000 dollars of unremunerative capital in this form of public property. Is it absolutely impossible for the Dominion Government to raise this capital to 40,000,000, and so bring in an ample return? If a line of steam propellers, unsurpassed on the continent for size and accommodation, were subsidised by the Government after the Caughnawaga Ship Canal was opened, *the total capital* invested in this great water-route and source of revenue would still be *less than fifty million dollars*, which is only a sixth part of the capital altogether expended over Canadian Railways. This great work and the financial result of it I now leave Canadian Statesmen and English Capitalists who have an interest in the future prosperity of Canada, to pore over and analyse closely at their leisure: and as I always wish, notwithstanding the severe strictures which one is sometimes bound in justice to pass upon the past administration of affairs, to live as much in harmony as possible with the powers that be, I will respectfully commend the following observations lately made by John Page, Esq.. Chief Engineer of Canadian Public Works, to the attention of all thoughtful readers, hoping at the same time that his words of wisdom may shortly bear fruit in statesmanlike action. "Great as the sea-export of grain might be, it would scarcely be equal to the quantity required to supply the wants of the New England States, a large portion of which might also be carried viâ the St. Lawrence, to be delivered on Lake Champlain. Were this done there is reason to believe that breadstuffs for export, or consumption in the New England States, could be carried from the West at rates that would defy competition, and the St. Lawrence route have the benefit of the trade!"