

ANNUAL REPORTS
OF THE
HARBOUR COMMISSIONERS
OF MONTREAL.

FOR THE YEAR 1883.



Commissioners :

ANDREW ROBERTSON, Esq., CHAIRMAN.

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HON. J. L. BEAUDRY (MAYOR)

ANDREW ALLAN, Esq.

H. D. WHITNEY, SECRETARY.

Montreal :

PUBLISHED BY ORDER OF THE HARBOUR COMMISSIONERS OF MONTREAL.

1884.

GAZETTE PRINTING COMPANY, MONTREAL.

STATEMENT

MADE BY

MR. ANDREW ROBERTSON, CHAIRMAN,

OF THE

*Business of the Port for the year 1883, and other matters connected
with the Trust,*

AT THE PUBLIC MEETING OF THE BOARD, HELD ON 17TH JANUARY, 1884.

GENTLEMEN :—

The most important matter during the past year which the Commissioners had to deal with in connection with the Trust reposed in them, was application made to the Government and Parliament to pass an act granting a loan of \$900,000 for the further deepening of the channel to 27½ feet.

This encountered very great opposition in various quarters, the more so as the Commissioners suggested that the deepening in the past, as well as in the future, should be treated as one of the Public Works of the Dominion, and not as a local work.

The President of the Board of Trade of Quebec, addressed, under date of 10th of April last, a letter to the Hon. the Minister of Public Works against these views.

Under date of 19th same month, a letter was addressed by the Board to the Hon. the Minister of Public Works in reply, answering the same (copy which has been already published in the papers, but is hereto appended). The

result being that after repeated deputations to Ottawa as well as considerable correspondence, the Government brought in a bill granting a loan of \$900,000 at 4 p. c., which enabled the Commissioners to proceed with the work—and which it is believed will be completed by the time stated—and will no doubt be found when finished a benefit to the City as well as to the Dominion.

Some delay was caused in consequence of the caution of the Government to satisfy themselves that the work could be performed for the sum named, and they very properly employed their Engineers to enquire into, and report, to them, before passing the order in council which was required to confirm the Act. The reports being favourable, the order in council was finally passed on 14th of last June.

The Commissioners during last session of Parliament had to oppose the St. Lawrence Bridge and Manufacturing Co.'s Bill, which it was considered would seriously interfere with the Harbour. It experienced considerable opposition in committee, and was not allowed to go before Parliament.

From the statement of the Harbour Master, it will be seen that the increase of ocean tonnage over that of last year is 109,617 tons, being an increase of 139,345 of steam tonnage, while sailing ships have decreased 29,626 tons.

The year which has just closed is the largest in amount of ocean tonnage which the Port has ever shown, that of 1880 having hitherto been the banner year, not only for ocean tonnage, but also for inland tonnage.

The ocean tonnage of that year was 628,271, and the inland tonnage 1,044,380, or a total of 1,672,581 tons, while that of the year 1883 has been 664,263 ocean, and inland 764,721, or a total of 1,428,984.

This shows an increase of ocean tonnage between the two years of 5·7 per cent., and a decrease in inland ton-

nage of 26.5 per cent., or a decrease on the whole of 14.6 per cent.

The tonnage as compared with last year is as follows :

Ocean steam tonnage, 1882.....	468,460
“ “ “ 1883.....	605,805
Increase of steam tonnage	<u>139,335</u>
Sailing vessels, 1882	88,168
“ “ “ 1883	58,458
Decrease	<u>29,710</u>
Total ocean tonnage, 1882	554,646
“ “ “ 1883	664,266
Increase.....	<u>109,617</u>
Total inland tonnage, 1882.....	848,780
“ “ “ 1883.....	764,721
Decrease	<u>84,059</u>
Total ocean and inland tonnage, 1882	1,403,426
“ “ “ “ 1883	1,428,984
Increase.....	<u>25,258</u>

Steamers dues which averaged 6.85 cents per ton in 1882 were only 6.37 in 1883, and sailing ships which were 9.65 in 1882 were in 1883 only 7.21, showing that they have been even more rapidly despatched than last year.

The total ocean steam tonnage in 1880 was 76 per cent., and sailing vessels 24 per cent., while 1883 they were respectively 91 per cent., and 9 per cent. This shows that as year after year is passing we are becoming more and more a Steamship port, and that sailing vessels are gradually becoming of less importance to the trade of the Port.

The great reduction of inland tonnage 26·5 per cent. in three years must not be overlooked, as it shows that railways must be coming nearer to the front as competitors with the canals; and here I might call attention to the discussions which have taken place at the meetings of the Corn Exchange and Board of trade regarding ocean sailing vessels and the hardships imposed on them by the so called extravagant exactions which they are said to have to undergo in the shape of extortionate charges for towage, as well as of pilotage in coming to this port. It seems to me a pity that every opportunity should be seized at these meetings to cast discredit on our port. The question of towage was discussed and arranged for in a very fair way, and a settlement was arrived at two years ago by which the towage rates were reduced to half the tariff of 1873, and so far since that time not a single complaint has been made to the Harbour Commissioners of undue or excessive charges. We are told sailing vessels will not come because of these charges; but what are the facts? Take the Allan and Beaver lines,—when their sailing vessels came, they owned and managed their own tugs and brought up and took down their own sailing vessels into port. Where are they now? They have not brought a single sailing vessel into the port for two years, and have entirely superseded them by steamers; thus evidently showing that so far as they are concerned they find steamers more profitable than sail.

In the December number of Chambers' Journal I read a very interesting article on "Docks," from which it appears that London is the chief port in the United Kingdom; that her docks are private property, paying 10 per cent. on dividends, the charges amounting to as much as six shillings and eight pence per ton to the vessel.

Liverpool, the second port in the United Kingdom, is carried on by a trust called the "Mersey Dock and Harbour Board;" and the docks are worked for the public benefit, and not to pay dividends.

Glasgow—the river, in 1775, while vessels could not ascend drawing more than six feet—now vessels drawing 20 feet can lie there at any state of the tide ; and she has become the third port in the United Kingdom. It also is managed by a trust for the general benefit of the public now, let me say.

To those who know the City of Glasgow and her Clyde improvements, they will perhaps be astonished when I state that Montreal, during her season of navigation, has as much tonnage, ocean and inland, as that great city, and, as has already been stated, she is the third largest port in the United Kingdom, that is to say for the six months of our open water. We have half of the yearly tonnage that goes into Glasgow, while our harbour charges for tonnage dues and goods are far beneath that port or any port approaching the magnitude of Montreal in Great Britain. And in addition, I do not hesitate to say that our tariff is the simplest, and as a whole the cheapest of any other port giving equal facilities that can be named either on this or the other side of the Atlantic for ocean steamers and their cargoes.

I observe that the "Beaver Line" has this year laid up their steamers for the winter, and it is stated that this has been done because whatever money they made by coming to Montreal in summer, was lost by going to Atlantic ports in winter ; this, if correct, shows that Montreal cannot be such a bad port in summer, and as a proof of their confidence in our port, I find it stated in the papers of last week that they are adding another new ship to their already fine fleet for Montreal summer trade.

I am not insensible to the fact that Montreal labours under great disadvantages, as it is only a summer port ; were our harbour open all the year round, and we had a net work of railways such as enter New York, Boston, Philadelphia or Baltimore, Montreal would more than hold her own in the race.

Boston, Philadelphia, and Baltimore, are railroad ports open all the year round; they have no canal facilities; Montreal is not, therefore, in a position to be compared with these ports, but with New York, and then only so far as canal facilities are concerned. Her railroad facilities during the time the canals are closed give her very exceptional advantages to have grain go that way, because they have a very large home market where they can dispose of a large quantity of their produce, and if it should be found more favourable to ship, they can do so at any moment; whereas if the grain is sent to Montreal during the winter, it must either await the opening of navigation or pass through Montreal to some of the Atlantic ports by rail.

New York and the Erie canal traffic are only what we can attempt to compare with, as water-ways, and when it is stated that Montreal is losing her share of the trade, before admitting this statement, the question should be considered what proportion is moved by the New York State canals to foreign markets as compared by the St. Lawrence route. We can hardly expect that their grain will come this way, even without bonding charges or other restrictions against the routes offered them in their own country, and the advantages of their home markets. In discussing this question it seems to me that an important factor has always been overlooked, viz., that of every thousand bushels which leave the granaries of the west probably two-thirds is required for their own consumption, leaving only one-third to be shipped; whereas in our case every bushel of wheat that comes here from there has to be exported, because one year with another in Canada we have enough to provide for our own necessities. We have, therefore, no market to offer as compared with their own ports. I however anticipate the time, and that at no distant date, when the products of the great northwest will reach our port, and when we shall see such rapid strides during our season of navigation as will satisfy

the most ardent Montrealer that a new era of progress has been entered upon—not only beneficial to the city and the port, but to the general interests of the dominion.

During my visit last summer to Great Britain I devoted a portion of my time to seeing the improvements carried on in various quarters, and more especially on the Clyde. At Greenock and Glasgow the mode of operations there is somewhat different to ours, and no doubt suits their circumstances. They use steam Hopper barges which carry out the dredged material to sea or some of the deep lochs which lie in the Frith of Clyde.

Greenock has a Hopper dredge, and Belfast was giving a contract for one while I was there. These have not to go so far with their dredged material as the Hopper barges, who have to go 15 to 25 miles or more. The Hopper dredges are by some considered more economical; I should, however, doubt that, and believe the Hopper barge is the cheapest in the long run.

So far as I could see I do not think that we have much to learn regarding dredging and deepening of the St. Lawrence channel. I was most courteously received by all the members and staff of the Glasgow and Greenock Boards. These trusts are conducted very similarly to our own, but Glasgow, from its importance, has a larger number of representatives.

I might here refer to Mr. Kennedy's report appended hereto, for full information as to the channel operations for the past year. He has been sent by the Board to Great Britain and the continent to procure steel castings by which he expects largely to increase the capacity and work of the dredges at Cap La Roche, &c., as well as to cause greater economy in working, as it is well known this is the crucial point in our deepened channel; he is straining every nerve to have it carried through at the earliest possible moment.

The revenue shows considerable variations as compared

with last year. The wharfage inwards has decreased 8·6 per cent., outwards it has increased 20·4 per cent. Tonnage dues on steamships 20 per cent. increase, a decrease of tonnage dues on sailing ships of 50·4 per cent., and of local traffic of 7 per cent., the totals being as follows :

Wharfage inwards, decrease,	\$10,193.25.
“ outwards, increase	9,559.78.
Tonnage dues, steamships, increase, ...	6,766.67.
“ sail, decrease,	4,291.76.
Local traffic, “	3,159.22.
The total revenue being for 1882,.....	249,130.91.
And for 1883,.....	247,813.19,

or a decrease of 1,317.72 or about half per cent.

The local traffic seems to be gradually decreasing year by year, as I have already said no doubt due to the increasing facilities afforded by the railways.

Regarding pilotage, there can be no hesitation in saying that the pilotage system below Quebec, which is controlled by the corporation of pilots, should be amended and the rates reduced. With the changes which have taken place in the trade one-half the number would be ample to do the work. As the facilities now afforded for rapid transit from Quebec to pilotage ground is so different from what it was when pilots had to go down by pilot boat or schooner to Bic or Father Point, often taking as many days that is now done in as many hours; besides the system of equal distribution of earnings among those who do, and those who do not do, the work is vicious in the extreme, while the cost of keeping up the corporation is very considerable, and is a severe tax on the earnings of the pilots before any division of their earnings is made.

Another good reason why the rates should be reduced, is the fact that when they were made they were for sailing ships who were often ten days beating up the river under sail, and their money was, no doubt, well earned ;

but now that steamers come up in ten or twelve hours, the case is quite different.

Steamers should pay a less rate, as also vessels under tow, than those which have to be sailed up, because of the lessened labour imposed on the pilot as well as the shortness of the time occupied by the trip.

The pilots between Quebec and Montreal are applying for a similar act; if such is granted by Parliament, it will only be an additional grievance, as an additional tax to be laid on the shipping interest, besides encouraging the lazy to become more so, at the expense of the young and enterprising men, who will have to do the work.

The pilots between Quebec and Montreal for the season numbered 47, of whom one died and three were sick. The total earnings of the pilots were \$43,995.87; deducting the earnings of the one who died and the three who were sick, the amount received by the pilots able to do the work was \$43,145.96. Great discrepancies, however, exist between the earnings of the pilots—the lowest being \$344.33, while the highest made no less than \$2,323.92. This disparagement causes considerable feeling among themselves, and some of the shipping firms are to blame in employing one where two or three should be employed to do the work, so as to make a more equal distribution among the pilots.

This pilotage system and the combination of the labour societies in Quebec and their attempted adoption in Montreal have caused, and will continue to cause, so much feeling abroad that if not put a stop to, the time will most assuredly come when there will be still fewer vessels than there are now, unless a change is adopted; we and those interested in the trade must, therefore, try by every means in our power, so to enlighten the pilots and the labourers to reason, and show that their interests are identical with the shipping interest, and that any undue control or combination against the shipping will only prove in the long

run disastrous to their own best interests, as well as to the ports of Quebec and Montreal.

Mr. Charles H. Gould's term of office expired last August, but he was again elected by the Corn Exchange to act as their representative for another term of four years.

In August we had the "Vandalia," Captain Wallace, a U. S. man-of-war, visiting our harbour, and in the following month H.M.S. "Canada," Captain Durant, who had as one of his officers Prince George.

To both these vessels and their captains the Commissioners extended all the courtesies in their power. Their appearance in our harbour was of great interest to the public, and their being here shows the great change which has taken place in our navigation by the deepening of the river that such vessels are able to come in and go out with perfect safety.

We have to record the death of Captain Armstrong, on the 5th of December last, an old and valued servant of the Trust in the earlier days of the deepening of the Channel, who died at the ripe age of 86.

CANAL TOLLS.

Great stress has been laid on this question, and the total abolition of tolls on the Erie Canals has been pointed to as an example that we ought to follow in the interest of the St. Lawrence route. A year of Free Canals in New York State has been tried, and the report sent to Albany shows that the total tonnage which passed through last year was 5,775,670 tons, 42,350,926 bushels of grain, a gain of 6 per cent. over 1882.

I regret that I have not seen the official report, and am, therefore, dependent on newspaper articles for my information, but if these articles are to be relied on, I note that from 1870 to 1874 there was an increase of canal tonnage in New York State equal to 13 per cent., while the railways in same time increased no less than 135 per cent.

In 1883 the gain of tonnage was without tolls, only 308,208 tons, or about 6 per cent., while the Erie and New York Central Railways increased 1,277,432 tons, or more than four times as much in the same period.

The rates of freight were not lessened by the abolition of canal tolls, on the contrary they were increased in 1883 over 1882, and the difference went into the pockets of the lake or canal forwarders.

In this connection I might say that in reply to a communication from the Minister of Railways and Canals, the following letter was sent on the subject:—

MONTREAL, 25th November, 1882.

Honorable Sir CHARLES TUPPER, K.C.M.G.,
Minister of Railways and Canals, Ottawa.

SIR,—As requested by you I have the pleasure of now sending you my views on canal tolls.

From the season of navigation returns for 1881, I find that the Revenue has been as follows:

Tonnage dues.....	\$ 48,205
Passenger dues	4,818
Tolls on goods.....	247,013
	<hr/>
Making a total of.....	\$ 300,036
You have from various sources, including fines, storages, etc., a further sum of.....	\$ 12,700
And from leases for water-power, etc., about ...	31,300
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Or a grand total of.....	\$ 344,000

The expenses for 1881 have been as follows:

Expenditure for repairs.....	\$ 177,214
Staff and maintenance.....	203,108
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Or a total of	\$ 380,312
	<hr/>
Showing a loss on the year of about.....	\$ 36,000

The tonnage of goods which passed during the year was as follows :

	Tons.
1. From Canadian to Canadian ports	1,649,775
2. From Canadian to U. S. ports	447,144
3. From U. S. to Canadian ports	559,145
4. From U. S. to U. S. ports.....	198,166

Or a total of..... 2,854,230

I mention these four classes : No. 1 is purely Canadian ; Nos. 2 and 3, I place in the same category as being mutually beneficial ; No. 4 is what has to be watched, as we should not burden our people to carry or cheapen freight between the ports of another nation.

	Tons.
As for the latter there passed through the Welland Canal	194,173
and through the St. Lawrence Canal.....	3,993
or a total.....	198,166
and nothing through the other canals, it will be found that the 194,173 tons of freight paid tolls to the extent of.....	\$ 38,835
on the Welland Canal, and the tonnage dues....	5,400 or
a total of	\$\$44,235

On the St. Lawrence canals it is a mere bagatelle, and would not exceed for both dues \$800, making a grand total of..... \$ 45,000 for

what may be termed purely United States business, but as your whole revenue for tolls is only \$300,000, this means about 15 per cent. of the whole ; so that if the canal tolls were entirely abolished, we would be practically giving to our United States friends a capital sum of \$1,100,000 at 4 per cent. and laying the burdens on our people to help our opponents.

I am therefore of opinion that it would be unwise at present to entirely abolish canal tolls, but I think that it would be well to abolish tonnage dues, as also the dues

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on passengers. This would be a loss of \$53,000, and would be giving to the United States about 10 per cent. and 90 per cent. to the Canadians.

I would then pass all goods going West, paying St. Lawrence Canal tolls through the Welland Canal, free ; and all goods passing through the Welland Canal, through the St. Lawrence canals, free, having paid Welland Canal tolls. If this were done, and the Government were to assume the St. Lawrence route debt and publish to the world, that from the Gulf of St. Lawrence, ships were free to the head of the lakes, in so far as Canadian rivers and canals were concerned, it seems to me that the Government could accomplish as much as by entirely abolishing the canal tolls.

Personally, I confess that I can hardly see the reason why the country should have spent \$40,000,000 on canals, and that they should keep them up at a cost say of \$400,000 a year more. Certainly the tolls should keep up repairs and working expenses, just the same as you are trying to make the Intercolonial Railway pay its working expenses, which has cost nearly, if not quite, a simple expenditure, say \$1,600,000 a year for interest on \$40,000,000.

Then let me add what is our channel to cost for $27\frac{1}{2}$ feet—to deepen from 20 to 25 feet has cost, including plant, \$1,780,000—to deepen it $2\frac{1}{2}$ feet more, say to $27\frac{1}{2}$ feet, will cost \$186,000, as per the Engineer's Report, but as I have before said, call it \$900,000 to make it perfectly sure, or a total of \$2,680,000. The plant has cost nearly \$600,000, and if it only brings 30 per cent., will be \$180,000, reducing the cost of the channel to \$2,500,000 ; a yearly charge of \$100,000 for a work which, when finished, will require little, if any, charge to keep it in perfect order for the future.

You may not think my views correct, but after giving them my best study, I venture to send them to you, and whether you may adopt them or not, I know you will give

them that consideration which you have always shown to anything that I have advanced, especially when you thought I was correct.

I am, sir,

Yours very truly,

ANDREW ROBERTSON.

Since writing this letter I have not seen any reason to change my views beyond this, that in view of competition via the Atlantic Ports having the advantage of free tolls on grain through the Erie Canal, all tolls ought to be rebated on grain coming through the Welland and St. Lawrence Canals.

And here let me quote the following extract from the report of the Council of the Corn Exchange on canal tolls, and to say that I cordially agree with the views of the Association if they can be accomplished, viz., the untrammelled exchange of natural productions between Canada and the United States, and that the river and canals shall be practically free to the shipping of all nations.

It is evident that the first year's experience of "Free Canals" in the State of New York has been higher rates of freight concurrently with the absence of all Tolls; while in Canada there has been an increase in the quantity transported, and slightly increased freight-rates, with the Tolls continued. This was not the result expected; for it would seem, so far, that Tolls have not been a controlling element in the question of route to the seaboard. When what remains of the last year's very deficient harvest on both sides of the international boundary-line, is brought forward by the water-routes during next season of navigation, the results may be different. While, therefore, your Committee will welcome the removal of Tolls on the Canadian Canals, they would reiterate what they believe to be the views of the Association,—viz, that

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the true interest of Farmers, Flour-Millers, the Grain Trade, and the people at large, would be to abolish all taxes on Breadstuffs, to establish untrammelled interchange of natural productions between Canada and the United States,—and to inaugurate a patriotic policy respecting the water-highways from the great Lakes to the Ocean,—the River St. Lawrence to be relieved from all incidental burdens and imposts, and to be practically free to the shipping of all nations.

Brought forward,..... \$207,429 26

LOCAL TRAFFIC.

Wharfage on goods—Inwards.....	4,376 29
“ “ —Outwards.....	920 20
Harbour Dues on Barges.....	8,841 21
“ “ Steamers.....	2,166 54
Commutation on Steamers.....	13,578 50
Received for piling Lumber on Wharves.....	3,421 00
“ “ “ Coal “	4,793 50
“ “ “ Firewood “	441 50
“ “ “ Phosphates “	118 44
“ Rent of Small Offices.....	834 55
“ “ Scales.....	800 00
“ for Penalties.....	92 00
	<hr/>
	\$ 40,383 33

NET REVENUE..... \$247,813 19

FROM DOMINION GOVERNMENT:

Received on account of New Channel Operations.	\$110,000 00
“ “ maintenance of Buoys and Beacons	7,000 00
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	\$117,000 00
Rent of Offices in Old Building.....	675 00
“ “ New Building.....	2,000 00
Received from Canadian Pacific Railway, Rent of Tracks	1,937 53
Received 1st Instalment on Old Building, sold.	3,600 00
“ for Harbour Debentures, Series B., sold.	107,000 00
“ “ Sundries, Wharfages, &c.....	205 33
“ “ Interest on Bank Accounts, &c.....	3,190 58
“ from Schooner “ Providence”.....	288 29

SUNDRY AMOUNTS RECEIVED FOR CREDIT, AS UNDER:

New Channel Operations.....	5,506 67
Harbour Dredging.....	8,340 00
Electric Light.....	58 13
Harbour Repairs.....	387 96
New Dredging Plant.....	5,500 00
Harbour Expenses.....	62 00
Hochelaga Wharf.....	18 00
Harbour Survey.....	96 00
	<hr/>
	\$138,865 49

TOTAL RECEIPTS..... \$503,678 68

The expenditure was as follows :

Harbour Survey	\$2,151 99
Interest on Harbour Debt.....	114,342 50
Travelling and Incidental Expenses.....	727 54
Hochelaga Wharf—Sec. 38 to 40.....	3,359 90
Legal and Notarial Expenses.....	566 30
Dominion Government Interest.....	68,407 67
Harbour Railway.....	1,270 37
St. Lambert Channel—Government Survey.....	257 88
Harbour Dredging.....	17,296 19
Buoys and Beacons.....	6,564 24
Harbour Expenses.....	26,925 21
Harbour Repairs.....	35,768 18
New Channel Operations.....	199,050 39
Lighting Wharves—Electric Light....	\$1,826 75
“ “ —Coal Oil.....	423 82
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	2,250 57
Printing, Advertising and Stationery.....	2,202 95
Latrines.....	2,589 98
R. H. Buchanan & Co. ; Paid Account Steam Fire Pump.....	600 00
Paid Debentures Series C.C.....	104,000 00
Wharfage Dues Returned.....	2,939 63
Mrs. John Young—Annuity 1883.....	600 00
Accounts Written off.....	209 75
Raising Schooner “Providence”.....	950 00
TOTAL EXPENDITURE.....	<hr/>
	<u>\$593,013 64</u>

In comparing the Revenue statement with that of last year, it will be seen that the net revenue decreased \$1,317.72, or about one-half per cent.: the sea-going traffic showing an increase of \$1,841.50, while the local traffic showed a falling off of \$3,159.22.

A copy of the Chief Engineer's Report has been forwarded you, giving an account of the repairs, dredging operations, &c., within the Harbour.

The copies of the following reports have also been sent you, 1st. The Harbour Master's, with comparative statements of the trade of the Port, &c.; 2nd. The Superintendent of Pilots, giving particulars as to the maintenance of the buoys and beacons in the River St. Lawrence and other Rivers under the jurisdiction of the Trust; and 3rd. The Report of the Pilotage District of Montreal.

From the statement seen that the revenue to increase, the total of steam tonnage.

The total amount being an increase year. The increase.

As stated in the Channel to Quebec last, a report of June, 1883, was Works.

At the session a loan of \$900,000 to further deep water, and works middle of last session.

From the statements of the Harbour Master, it will be seen that the steam tonnage coming to the Port continues to increase, the ratio for the past year being 91 per cent. of steam tonnage, and 9 per cent. of sail.

The total amount of ocean tonnage was 664,263 tons, being an increase of 35,992 tons over the largest previous year. The inland tonnage was 764,721 tons.

As stated in my last year's report, the 25 feet Ship Channel to Quebec was completed and tested in October last, a report on this work for the fiscal year ended 30th June, 1883, was as usual sent to the Department of Public Works.

At the session of the Dominion Parliament of 1883, a loan of \$900,000 was obtained to enable the Commissioners to further deepen the Ship Channel to 27½ feet at low water, and work on the same was commenced about the middle of last summer.

I have the honor to be,

Sir,

Your obedient servant,

H. D. WHITNEY,

Secretary.

REPORT
ON THE
WORKS FOR THE IMPROVEMENT AND MAINTAINANCE
OF THE
HARBOUR OF MONTREAL.
FOR THE YEAR 1883.

JOHN KENNEDY, M. Inst., C. E., *Chief Engineer.*

HARBOUR COMMISSIONERS OF MONTREAL.
Chief Engineer's Office,
MONTREAL, December 12th, 1883.

H. D. WHITNEY, Esq.,
Secretary,
Harbour Commissioners of Montreal.

SIR,

I beg to submit for the information of the Board of Harbour Commissioners, the following report upon the works in the Harbour of Montreal, for the year 1883:—

Sections 5 to 10, (Windmill Point Basin):—The basin has been widened by dredging along the side of the shoal on the south-east side, and its available depth for navigation has been increased by clearing away boulders and other small obstructions. Quantity dredged and raised by stone-lifters, 34,031 cubic yards.

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Section 19.—A
the Victoria Pier

Sections 21 to 2
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feet depth at low
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Sections 38 to 40.
wharf, which was
part of this summ
into use in Septer

Section 11.—The water both alongside the wharf, and outward to the shoal has been increased in available depth by the removal of boulders and small shallow points. Quantity dredged, 510 cubic yards.

Sections 12 to 14.—A number of small points have been removed by dredging, so as to give 25 feet depth at low water throughout the whole area of the basin. Quantity dredged, 3,655 cubic yards.

Section 14.—Some shoal places were found to have been formed in the basin, particularly alongside the Elgin Pier, and at the upper corner of the Island wharf, and these were dredged off in November.

Section 15.—The basin has been cleared out in a number of places.

The two lower faces of the wharf have been renewed and raised up to standard level.

Section 17.—After the last vessels had left in the fall, the depth of the basin was carefully sounded, and a few shallow places which were found, were dredged off to 25 feet at low water. Quantity dredged, 3,217 cubic yards.

Section 19.—A few shoal spots at the up-stream side of the Victoria Pier were dredged off.

Sections 21 to 26.—Such parts of the large shoal which remained between the wharves and the main channel, were, in the early part of the summer, dredged off to 25 feet depth at low water. Quantity dredged, 1,935 cubic yards.

Sections 38 to 40.—A portion of the back filling of the new wharf, which was left unfinished last fall, was in the early part of this summer completed, and the whole wharf put into use in September.

Sections 41 to 43.—The greater part of the surplus dredgings from the Harbour above were deposited along shore, and raised above water level in such a way as to make land, and be available for wharfage when required.

HARBOUR REPAIRS.

In Section 10, Windmill Point wharf, about 150 lineal feet of the timber work of the wharf, which had sunk, and was damaged by last winter's ice, was renewed on top, and built up to proper height.

Section 17.—The Richelieu Pier was repaired on top, and the planking all doubled in thickness.

Section 18.—The timber work of the wharf at the inner end of the boat basin was rebuilt above water line, and put in thorough repair.

Section 19.—About 250 lineal feet of the main wharf, which had been raised by the ice last winter, was brought to the proper level, and well secured.

Section 20.—About 160 lineal feet of the outside of the Victoria Pier, which had sunk, was built up to the proper height.

Sections 30 and 31.—Two pieces of wharf, of an aggregate of 350 lineal feet in length, which had generally settled out of shape, were built up and repaired.

Section 32.—A considerable part of the pile work of the Car Ferry Slip was carried away or damaged by the ice of last winter, and early in the spring temporary repairs were made, so as to enable the ferry to be worked during the summer.

Sections 34 to 36.—Two pieces of the timber work, of about 370 lineal feet in all, which settled below the proper level some years ago, were, in the latter part of the summer, built up to proper height.

The ordinary wharves and adamizing stone roadways.

The general old oak ones, 25 fixed, and 9

Appended and other information

The financial at the date of expenditure on

Yours

The ordinary light repairs have been made to the wharves and works generally, and 721 toises of Macadamizing stone have been used in the maintenance of the roadways.

The general substitution of iron mooring posts, for the old oak ones, has been continued, and there are now in all 25 fixed, and 95 movable iron posts.

Appended are tables giving details of dredging done and other information.

The financial year of the Commissioners not being closed at the date of writing this report, the usual details of expenditure on the works cannot yet be given.

Yours respectfully,

(Signed),

JOHN KENNEDY,

Chief Engineer.

Per J. M. N.

ABSTRACT of DREDGING done in different parts of the HARBOUR of MONTREAL in 1883.

PLACES WHERE DREDGES WORKED.	DREDGES.	Quantities dredged at each place.	Totals dredged.	REMARKS.
Sections 5 to 10.....	Dredge No. 4....	Cubic yds. 11,397	Cubic yds. 34,031	Shale rock and hard pan, with gravel, sand and boulders.
Windmill Point Basin....	" No. 5....	2,340		
	" No. 6....	16,773		
	" No. 13....	3,465		
	Stone-lifter No. 2	156		
Section 11.....	Dredge No. 11....	510	510	Hard pan, clay, gravel and boulders.
Sections 12 to 14.....	Dredge No. 11....	3,015	3,655	Hard pan, clay, gravel and boulders.
	Stone-lifter, No. 2	640		
Section 17....	Dredge No. 5....	3,217	3,217	Gravel and sand.
Sections 21 to 26.....	Dredge No. 7....	1,935	1,935	Sand, gravel & boulders.
Ship Channel.				
Sections 12 to 20.....	Dredge No. 2....	23,366	143,561	Hard pan, clay, sand, gravel and boulders.
	" No. 4....	18,146		
	" No. 5....	45,990		
	" No. 6....	3,465		
	" No. 7....	46,080		
	" No. 8....	2,280		
	" No. 9....	75		
	" No. 10....	1,680		
	" No. 11....	105		
	" No. 12....	2,025		
	Stone-lifter No. 1	349		
Total.....			186,909	

ABSTRACT OF DREDGING DONE BY EACH DREDGE IN THE HARBOUR OF MONTREAL IN 1883.

DREDGES.	Com- menced working.	Stopped working.	Time of Ser- vice.	PLACES AT WHICH DREDGES WORKED.	Quantities dredged.	Totals Dredged.	REMARKS.
Spoon Dredge, No. 2.	June 11..	Oct. 1....	Days. 91	Sections 13 to 20, Ship Channel.....	Cubic Yds. 23,366	Cubic Yds. 23,366	Sand, Gravel and boulders.
Do. do. No. 4.	May 8....	Dec. 1....	162	" 5 to 10, Windmill Point.....	11,907		

ABSTRACT OF DREDGING DONE BY EACH DREDGE IN THE HARBOUR OF MONTREAL IN 1883.

DREDGES.	Com- menced working.	Stopped working.	Time of Ser- vice.	PLACES AT WHICH DREDGES WORKED.	Quantities dredged.	Totals Dredged.	REMARKS.
Spoon Dredge, No. 2.	June 11..	Oct. 1...	Days. 91	Sections 13 to 20, Ship Channel.....	Cubic Yds. 23,366	23,366	Sand, Gravel and boulders.
Do. do. No. 4	May 8...	Dec. 1...	162	5 to 10, Windmill Point.....	11,397	23,366	Shale rock, hard pan, with gravel, sand and boulders.
Boom Dredge, No. 5	May 10...	Dec. 1...	172	12 to 20, Ship Channel.....	18,146	29,543	Hard pan, clay, gravel and boulders.
Boom Dredge, No. 6.	May 14..	Dec. 1..	138	5 to 10, Windmill Point.....	2,340	31,883	Shale rock, hard pan, clay, gravel and boulders.
Spoon Dredge, No. 7.	May 26..	Dec. 1..	152	17, Dominion SS. Basin.....	3,217	35,100	Gravel and sand.
El'vat'r Dredge, No. 8	.....	.....	.....	13 to 20, Ship Channel.....	45,990	51,547	Sand, gravel and boulders.
Do. do. No. 9	.....	.....	.....	5 to 10, Windmill Point.....	16,773	68,313	Hard pan, clay, gravel and boulders.
Do. do. No. 10	.....	.....	.....	12 to 20, Ship Channel.....	3,465	71,778	Do.
Do. do. No. 11	.....	.....	.....	19, Bonsecours Basin.....	1,935	73,713	Gravel and sand.
Do. do. No. 12	.....	.....	.....	13 to 20, Ship Channel.....	46,080	119,793	Gravel, sand, and boulders.
Do. do. No. 13	.....	.....	.....	13 to 20, Ship Channel.....	2,280	122,073	Gravel, sand, and boulders.
Stone-Lifter, No. 1	.....	.....	.....	13 to 20, Ship Channel.....	75	122,148	Gravel, sand and boulders.
Do. do. No. 2	.....	.....	.....	13 to 20, Ship Channel.....	1,680	123,828	Gravel, sand and boulders.
				11.....	510	124,338	Gravel, sand and boulders.
				12 to 14, Allan's Basin.....	3,015	127,353	Hard pan, clay, gravel and boulders.
				13 to 20, Ship Channel.....	105	128,368	Gravel, sand and boulders.
				13 to 20, Ship Channel.....	2,025	130,393	Gravel, sand and boulders.
				5 to 10, Windmill Point.....	3,465	133,858	Hard pan, gravel, sand and boulders.
				13 to 20, Ship Channel.....	349	134,207	Boulders.
				12 to 14, Allan's Basin.....	640	134,847	Boulders.
				5 to 10, Windmill Point.....	56	135,403	Boulders.
				Total.....	186,909	186,909	

HARBOUR COMMISSIONERS' DREDGING PLANT EMPLOYED IN THE HARBOUR OF MONTREAL, 1883.

DESCRIPTION OF VESSEL	HULL.			ENGINES.				REMARKS.				
	Length over all.	Breadth of Beam.	Depth	When Built.	Kind of Engine.	No. of Cylinders.	Diameter of Cylinders.		Length of Stroke.	Pressure of Steam.	Capacity of Bucket.	Depth to which Dredge can work.
DREDGES.												
Crane Spoon Dredge, No. 2	77.0	26.6	6.3	1872	Horizontal, non-condensing.	1	12	16	40 to 70	40	32	Wooden Hull.
" " " No. 4	77.3	27.0	6.6	1873		1	14	16	40 to 70	40	32	" " " " " " " "
Boom Spoon " " No. 5	77.6	27.0	6.6	1874		1	14	16	50 to 85	40	35	Altered in 1882.
Crane " " " No. 6	77.0	27.0	7.6	1874		1	14	16	40 to 75	40	35	Altered in 1881.
Crane " " " No. 7	77.3	27.0	7.0	1874	1	14	16	40 to 70	40	32	" " " " " " " "	
DERRICKS.												
Clamp Shell Derrick, No. 1	56.8	23.9	5.9	1872	Horizontal, non-condensing.	1	8	12	60 to 70	.....	.....	Used as a P-driver.
" " " " " No. 3	57.0	23.6	5.9	1875		2	7	12	60 to 90	.....	.....	Wooden Hull.
TUG BOATS.												
Tug St. Louis	67.0	15.0	8.7	1875	Vertical, non-condensing.	1	16	20	85 to 95	.....	.....	Wooden Hull.
" " St. Peter	71.6	16.6	8.6	1875		1	20	22	80 to 90	.....	.....	" " " " " " " "
" " St. Paul	65.6	15.0	8.0	1875	1	16	18	80 to 100	.....	.....	" " " " " " " "
BARGE.												
Staghound, floating shop.	103.4	21.5	7.6	1869	.....	.....	.....	.....	.....	.....	.....	Wooden Hull.
SCOWS.												
7 Dumping Scows	80.0	16.0	7.6	1875	All wood.
3 Flat Scows	70.0	18.0	5.0	1875	" " " " " " " "
2 " " " " " " " "	75.0	20.0	5.9	1876	" " " " " " " "
6 " " " " " " " "	75.0	20.0	6.0	1878	" " " " " " " "

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CAPTAIN

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REPORT
OF THE
HARBOUR MASTER OF THE PORT OF MONTREAL.
FOR THE YEAR 1883.

CAPTAIN THOMAS HOWARD, *Harbour Master.*

HARBOUR COMMISSIONERS OF MONTREAL,
HARBOUR MASTER'S OFFICE,
MONTREAL, January 8th, 1884.

H. D. WHITNEY, ESQ.,
Secretary,
Harbour Commissioners of Montreal.

SIR,

I beg to submit for the information of the Board of Harbour Commissioners the following as my Annual Report for the year 1883, with comparative statements showing the Number, Tonnage, Classification, Nationality, and the greatest number of vessels in Port at one time; also statements showing the dates of the opening and closing of Navigation, first arrival from sea, and the last departure for sea, with statements showing the number and tonnage of Inland vessels, and the greatest number in port at one time, during the past ten (10) years.

Six hundred and sixty (660) sea-going vessels arrived in port during the past season, of the aggregate tonnage of 664,263 tons, showing an increase of twelve (12) vessels and 109,571 tons in tonnage over the year of 1882. Of those vessels 460 were built of iron of an aggregate tonnage of 603,782 tons, and 200 built of wood of an aggregate tonnage of 60,481 tons. Of inland vessels there arrived in port 5,477 of an aggregate tonnage of 764,721, and a total of 6,137 vessels of all classes and 1,428,984 tons in tonnage. Of inland vessels there is a decrease of 470 vessels and in tonnage 84,059 tons.

There were 12,638,652 feet of lumber shipped for South America this season in 23 vessels of the aggregate tonnage of 15,610 tons; showing a decrease of 9,094,610 feet, and 12,204 tons in tonnage, and 25 vessels.

There were shipped during the season to the United Kingdom by 160 steamers and 31 sailing vessels, 50,514,378 feet, making a grand total of 63,151,030 feet shipped from this port during the season of 1883; showing a decrease of 3,450,357 feet on the previous year.

The coal trade continues to increase and becomes more important every year. During the season we had 268,412 tons from the Maritime Provinces, showing an increase of 12,628 tons; from Great Britain 51,409 tons, showing an increase of 25,628 tons; and from the United States 210,191 tons, showing an increase of 34,478 tons; making a total of 530,012 tons, or an increase on the year of 72,734 tons.

The shipment of phosphate from this port is becoming another very important trade, and increasing every year, as shown by the following figures:—In 1880, 7,500 tons were shipped; 1881, 10,307 tons; 1882, 15,556 tons; and in 1883, 17,160 tons.

WHARF ACCOMMODATION.—There is a great want of wharf accommodation at Windmill Point. The bulk of the coal and sugar vessels are discharged there, also

general cargo. A singular point is that the Commodore having the wharf on the Channel, so

JANUARY. 1st, water opposite Longueuil, and meter registered on the Ice Raft with snow storm month through

FEBRUARY 1st the 10th, tem. night; 24th m. with rain; 28th

MARCH set in this morning of Longueuil; 5th continued all night great violence; 25th, sleighing fast; fine weather

APRIL 1st cold 25°, crossing still ice in Richelieu opposite the city first trip from steamer "Bouché" first arrival in Rivers," arrived reported still firm

MAY 1st, fine traffic; 3rd, cold arrived from Sor moved last night

general cargo. The demand for wharf room at this particular point is yearly on the increase. I therefore hope that the Commissioners will see the advisableness of having the wharf, next year, built on the south side of the Channel, so as to meet the requirements of the trade.

JANUARY. Monday, 1st, set in fine and bright, open water opposite the city, but crossing on the ice at Longueuil, and sleighing good; on the 5th the thermometer registered 13° below zero. On the 15th cars crossed on the Ice Railroad at Longueuil; 27th, 4° below zero, with snow storm; 31st, very mild; tem. 34, but the month throughout was cold excepting the last two days.

FEBRUARY 1st, fine clear day, tem. 22° above zero; on the 10th, tem. zero; 17th, very mild, tem. 42; rain all night; 24th much colder, 4° below zero; on 25th, mild with rain; 28th cold, 9° above zero.

MARCH set in fine; tem. 20°; Saturday 3rd, cars crossed this morning on Ice Railroad, last time of the season, at Longueuil; 5th, 2° below zero; 10th, snowstorm continued all night; 11th, snowstorm continued all day with great violence; 19th, snowstorm, one of our worst days; 25th, sleighing good, tem. 25°; 31st, snow disappearing fast; fine weather; tem. 25° above zero.

APRIL 1st commenced fine, but cold for the season; tem 25°, crossing still good; 9th, water rising; 12th, rain; 17th, ice in Richelieu River clear, no damage; 20th, channel clear opposite the city; 26th, steamer "Beauharnois" made her first trip from Lachine to Beauharnois; 27th, at 6 p.m., steamer "Boucherville" arrived from winter quarters, first arrival in port of the season; 30th, steamer "Three Rivers," arrived from Three Rivers; Cape Rouge ice reported still firm.

MAY 1st, fine day; Lachine Canal open this morning for traffic; 3rd, cold east wind; a number of wood barges arrived from Sorel and Boucherville; 4th, Cape Rouge ice moved last night; 5th, SS. "Lake Champlain" arrived

this evening, being the first arrival from sea this season ; on 22nd and 23rd very nasty and cold weather, with North Easter blowing a gale ; 31st, rain all night ; gale continues.

JUNE 1st set in with fine warm weather ; the month throughout was fine, except on the 30th, the temperature falling from 84 to 50, with North wind.

JULY 1st, fine weather ; tem. 65° ; 6th, very warm ; tem. 80 ; the month was fine and warm ; on 31st it was cold and wet ; tem. 60.

AUGUST commenced with fine weather, the water in the river being unusually high ; on the 12th (Sunday) very warm ; tem. 84 ; 24th, the U.S. corvette "Vandalia" arrived at noon and moored at Hochelaga ; the month throughout was fine.

SEPTEMBER 1st, fine weather, tem. 75° ; on the 3rd great change, stormy and cold, tem. 50° ; on the 6th weather fine and warm, tem. 70° ; 11th, fine and cold ; we had frost during the night ; 16th, very fine, at 11 a.m., tem. 80° ; 24th, H.M.S. "Canada" arrived in port with His Royal Highness Prince George on board as midshipman ; the month closed with fine weather.

OCTOBER 1st, cold, frosty morning ; 6th, H.M.S. "Canada" left this morning at 6 a.m. ; captain, officers and crew all expressed themselves as highly pleased with their visit to this city ; the month throughout was fine, the latter part of it cold.

NOVEMBER 1st set in cold ; 14th, first snow of the season fell last night ; 20th, very mild ; SS. "Hanoverian," the last ship for sea, left at 2.15 p.m. ; 30th, mild ; all the market boats gone to winter quarters.

DECEMBER 1st, fine and cold, good sleighing ; tem. 12° above ; 16th, fine and cold, good sleighing ; tem. 12° above ; Longueuil ferry boat gone to winter quarters ; navigation closed ; sleighing bad ; 17th, cold ; tem. zero ;

23rd, at 6 a.m.
sleighing ; 25th
28th, much cold
fine day, good
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23rd, at 6 a.m., 20° below zero; 24th, snowing, good sleighing; 25th (Christmas Day), mild; tem. 32° above; 28th, much colder, snowstorm during the night; 31st, fine day, good sleighing, ice making fast; 3 p.m., ice taken and stationary; water within 2 feet 5 inches of top of revetment wall, and 2 feet 6 inches in Harbour Commissioners' Building.

Yours respectfully,

THOMAS HOWARD,
Harbour Master.

PORT OF MONTREAL.

Statement showing the Nationality and Tonnage of sea-going Vessels that arrived in Port during the season of 1883, that were navigated by 19,241 seamen.

NATIONALITY.	No. of VESSELS.	TONNAGE.
British.....	623	640,830
Norwegian.....	19	8,683
Belgian.....	4	5,427
German.....	4	3,730
Austrian.....	2	922
American.....	3	2,365
Swedish.....	3	1,004
Danish.....	1	1,076
Portuguese.....	1	226
Total.....	660	664,263

*Comparative Sta
Closing of
Departure f*

YEARS.	Open o Naviga
1874.....	April
1875.....	May
1876.....	April
1877.....	"
1878.....	March
1879.....	April
1880.....	"
1881.....	"
1882.....	"
1883.....	"

PORT OF MONTREAL.

Comparative Statement, showing the dates of the Opening and Closing of Navigation, first arrival from Sea, and the last Departure for Sea, the past ten years.

YEARS.	Opening of Navigation.	Closing of Navigation.	First Arrival from Sea.	Last Departure for Sea.
1874.....	April 25.	Dec. 13.	May 11.	Nov. 21.
1875.....	May 3.	Nov. 29.	" 9.	" 22.
1876.....	April 27.	Dec. 10.	" 8.	" 23.
1877.....	" 17.	Jan. 2, '78.	April 29.	" 24.
1878.....	March 30	Dec. 23.	" 20.	" 24.
1879.....	April 24.	" 19.	May 1.	" 24.
1880.....	" 17.	" 3.	" 2.	" 22.
1881.....	" 21.	Jan. 2, '82.	April 29.	" 23.
1882.....	" 11.	Dec. 9	May 6.	" 21.
1883.....	" 27.	" 16.	" 5.	" 20.

PORT OF MONTREAL.

Comparative Statement, showing the Number and Tonnage of Inland Vessels that arrived in Port the past ten years, with the greatest number in Port at one time.

YEARS.	No. of Vessels.	Tonnage.	Greatest Number in Port at one time.
1874.....	6,855	956,837	301 June 14
1875.....	6,178	811,410	256 Aug. 4
1876.....	6,083	786,083	262 Nov. 9
1877.....	6,333	847,978	258 Oct. 3
1878.....	5,502	764,243	261 Oct. 15
1879.....	5,698	817,243	227 Nov. 6
1880.....	6,489	1,044,380	253 July 7
1881.....	6,030	949,380	191 Nov. 4
1882.....	5,947	848,780	190 Sept 29
1883.....	5,477	764,721	174 Sept. 5

PORT OF MONTREAL.

COMPARATIVE STATEMENT, showing the Number, Tonnage, and Classification of Sea-going Vessels that arrived in Port from the Maritime Provinces the Past Ten Years.

YEARS.	No. of Vessels.	Tonnage.	Classification.
1874.....	6,855	956,837	301 June 14
1875.....	6,178	811,410	256 Aug. 4
1876.....	6,083	786,083	262 Nov. 9
1877.....	6,333	847,978	258 Oct. 3
1878.....	5,502	764,243	261 Oct. 15
1879.....	5,698	817,243	227 Nov. 6
1880.....	6,489	1,044,380	253 July 7
1881.....	6,030	949,380	191 Nov. 4
1882.....	5,947	848,780	190 Sept 29
1883.....	5,477	764,721	174 Sept. 5

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PORT OF MONTREAL.

COMPARATIVE STATEMENT, showing the Number, Tonnage, and Classification of Sea-going Vessels that arrived in Port from the Maritime Provinces the Past Ten Years.

YEARS.	Steamships.	Tonnage	Ships.	Tonnage.	Barques.	Tonnage.	Brigs.	Tonnage.	Brigantines.	Tonnage.	Schooners.	Tonnage.	Total No. of Vessels.	Total Tonnage.
1874.....	104	53,903	3	2,046	26	15,681	3	622	42	6,036	108	10,493	286	88,781
1875.....	120	69,544	3	1,874	27	13,180	2	331	35	5,397	92	8,526	279	98,852
1876.....	87	47,199	1	739	30	15,451	4	993	25	4,220	67	7,322	214	75,924
1877.....	72	39,277	5	4,306	25	13,566	3	758	18	2,744	37	3,924	160	64,575
1878.....	42	21,812	2	1,132	32	15,749	3	954	21	4,196	65	6,683	165	50,526
1879.....	62	40,686	2	1,733	59	33,271	1	457	16	3,660	80	8,573	220	88,380
1880.....	88	62,688	3	2,492	59	36,294	1	413	17	5,001	68	6,562	236	113,450
1881.....	104	80,040	1	734	44	10,666	2	553	13	2,502	48	4,883	212	99,378
1882.....	168	136,036	.....	.....	25	15,574	.....	.....	13	2,364	54	5,993	260	159,967
1883.....	191	164,982	.....	.....	11	8,066	1	307	6	1,015	54	5,620	263	179,990

PORT OF MONTREAL.

COMPARATIVE STATEMENT, showing the Number, Tonnage, and Classification of Sea-going Vessels that Arrived in Port the past Ten Years, with the dates of the greatest number in Port at one time each year.

YEARS.	Steamships.	Tonnage.	Ships.	Tonnage.	Barques.	Tonnage.	Brigs.	Tonnage.	Brigantines.	Tonnage.	Schooners.	Tonnage.	Total No. of Vessels.	Total Tonnage.	Greatest No. in Port at one time.
1874..	266	262,096	50	46,938	167	80,677	15	3,928	64	10,688	169	19,096	731	423,423	76.....July 6th.
1875..	256	255,435	40	39,895	138	63,167	17	3,833	53	9,801	138	13,981	642	386,112	60.....August 18th.
1876..	240	262,829	40	37,303	146	66,002	18	4,700	35	5,848	123	14,498	602	391,180	61.....July 24th.
1877..	247	261,764	41	41,904	108	56,909	10	2,560	25	4,987	78	8,735	513	376,859	59.....Oct. 19th.
1878..	207	269,878	44	47,577	113	58,711	9	2,610	34	6,537	109	11,953	516	397,266	45.....June 3rd.
1879..	289	378,353	33	38,412	121	65,223	5	1,404	37	8,560	127	15,017	612	506,969	49.....Aug. 13th.
1880..	354	475,741	42	50,141	143	76,816	11	3,252	41	9,715	119	12,606	710	628,271	67.....August 4th.
1881..	321	446,457	5	4,640	104	60,617	9	2,377	30	6,152	100	11,686	569	531,929	59.....August 18th.
1882..	379	475,679	4	4,330	93	51,195	10	2,702	37	7,182	125	13,604	648	554,692	53.....August 21st.
1883..	464	605,805	3	3,356	70	38,547	7	2,417	15	3,012	101	11,126	660	664,263	38.....June 27th.

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H. D. WHITNEY,
Secretary

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1883... 464 605,805 3 3,356 70 38,547 7 2,417 15 3,012 101 11,126 660 664,263 38.....June 27th.

REPORT
OF THE
SUPERINTENDENT OF PILOTS.

JOSEPH LEVEILLÉ, *Superintendent of Pilots.*

HARBOUR COMMISSIONERS OF MONTREAL.

Superintendent of Pilots' Office,

MONTREAL, 31st December, 1883.

H. D. WHITNEY, ESQ.,

Secretary,

Harbour Commissioners of Montreal.

SIR,

For the information of the Harbour Commissioners I have the honor to submit to you the report of the work done by the Department of "Buoys and Beacons" during the season of navigation just finished.

This Department includes the maintenance of the buoys and beacons of the River St. Lawrence, between Montreal and Pointe-aux-Trembles (*en bas*), the Richelieu River between St. Johns and Rouses Point, and a certain portion of the Rivière des Prairies.

The season of navigation opened this spring, thirteen days later than the year before. It was only on the 30th of April that we commenced to place the buoys in position, after having spent several days in Sorel making the necessary preparations.

During the season the tug "John Pratt" was employed about eighty-four days, divided over eleven trips of more or less duration, according to the work to be done, the number and condition of the buoys, and the state of the weather. The first trip, however, for placing the buoys in position, and the last for taking them up again, were the most important.

The other intermediate trips were to replace those buoys which had been removed from their proper position owing to the gradual lowering of the water and the passing of vessels.

As can be seen by the report of last year, forty-seven buoys were left in position during the winter; twenty of iron and twenty-seven of wood.

Many of these buoys were carried away by the ice, but they have all been recovered with the exception of two iron ones. It was found necessary, however, to renew all the wooden buoys which had been left down.

One of the beacons at Grondines having fallen was carried away by the ice; it was accordingly rebuilt. In the course of the year a great number of other beacons have been repaired and painted afresh.

Of the eighty four days the tug "John Pratt" was employed, about eleven were lost on account of bad weather.

In the course of the different trips that were made, several anchors and chains were recovered which were put in the yard at Sorel, where there is at present two hundred and eighty buoys that have been used, and one hundred and seventy new ones. This number is sufficient for the requirements of at least the next two years.

There have been about thirteen wooden buoys carried away and lost.

I close this report by submitting to you the ordinary list, giving the places and numbers of buoys and beacons in use, as well as the number taken up and left for the

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winter in the channel between Montreal and Pointe-aux-Trembles (*en bas*). As you will notice there were in all 210 buoys ; four more than last year, but there have been left in position for the winter a less number.

The usual inspection of the buoys in the Richelieu River and the Rivière des Prairies, was made, and I have to report the same in a satisfactory condition.

A complete new set of buoys for the Richelieu River were prepared at Sorel last spring, and forwarded to the officer at St. John's having charge of the maintenance of the same in that River.

I have the honor to be,

Sir,

Your humble servant,

JOSEPH LEVEILLÉ,

Superintendent of Pilots.

REPORT
OF THE
PILOTAGE DISTRICT OF MONTREAL
FOR THE YEAR 1883.

HARBOUR COMMISSIONERS OF MONTREAL,
Secretary's Office,
MONTREAL, January 18th, 1884.

WM. SMITH, ESQ.,
Deputy Minister of Marine and Fisheries,
OTTAWA.

SIR,

I have the honor to submit herewith, for the information of the Honorable the Minister of Marine and Fisheries, the Annual Report of the Pilotage District of Montreal, for the year ended 31st December, 1883.

There was no increase in the number of apprentices during the past year.

In March, an examination was held of those apprentice pilots who had completed the terms of their apprenticeship, with a view to licensing as pilots those who passed their examinations, whenever the exigencies of the trade by the St. Lawrence required an increase in the present number of pilots. Seventeen apprentices presented themselves. The examinations extended over a period of six days, and resulted in the acceptance of Messrs. Nestor Arcand, John Naud and Joseph Dusseau, as qualified to receive their branches, in accordance with the conditions above mentioned.

The following pilots were superannuated, viz.: Placide Gaillardet, on the 1st February; Hector Hamelin, on 1st August—died 2nd October; and F. A. Mayrand, 1st September. Pilot Edward Naud having become insane, his name was removed from the list of active pilots.

The following is a list giving the name and age of each Pilot acting in this district, under the authority of this Trust, with the earnings of each for the season of 1883 :

No.	NAME.	AGE.	EARNINGS.	REMARKS.
1	F. A. Mayrand.....	63	\$ 334 82	
2	Joseph Leveillé.....	66	.....	Supt. of Pilots.
3	Hector Hamelin.....	66	319 91	Died.
4	Alfred St. Armand.....	40	1,507 26	
5	Zéphirin Bouillé.....	55	1,221 43	
6	Cyrille Bellisle.....	56	502 06	
7	Adolphe Lisé.....	54	809 72	
8	George Raymond.....	54	529 71	
9	Augustin Naud.....	57	737 74	
10	Hubert A. Bellisle.....	52	478 57	
11	Athanas Dufresnee.....	50	632 28	
12	J. B. Dorval.....	52	303 32	Sick.
13	Edward Naud.....	41	35 00	Sick (insane.)
14	Peter Gagnon.....	56	1,153 68	
15	George Bellisle.....	44	191 68	Sick.
16	Onesime Naud.....	43	1,110 07	
17	Joseph Hamelin.....	50	1,545 54	
18	Joseph Chandonnet.....	43	1,607 89	
19	L. A. Bouillé.....	44	1,125 42	
20	P. Beaudet.....	42	1,687 93	
21	Elzéar Bellisle.....	49	573 50	
22	Joseph Pleau.....	46	1,150 69	
23	Alfred Frenette.....	44	954 24	
24	Philip Belanger.....	45	988 73	
25	Victor Gagnon.....	45	1,097 04	
26	Narcisse Perrault.....	46	1,203 95	
27	Tréflé Toupin.....	36	352 90	
28	Cléophas Auger.....	37	813 11	
29	François Desjordi.....	39	613 64	
30	Ferdinand Labranche.....	39	1,627 24	
31	David Perrault.....	42	819 18	
32	Alex. Gauthier.....	37	1,127 25	
33	Louis Z. Bouillé.....	35	1,198 29	
34	Joseph Toupin.....	34	854 10	
35	Laurent Gauthier.....	34	1,452 42	
36	Jean Arcand.....	31	1,210 80	
37	Delevoie Naud.....	32	1,576 52	
38	Wilbrod Gauthier.....	32	1,056 84	
39	Louis Mayrand.....	36	778 59	
40	George Dufresne.....	35	573 23	
41	Norbert Arcand.....	31	917 66	
42	Uldoric Toupin.....	29	657 57	
43	Damase Caïen.....	43	445 89	
44	Louis Bellisle.....	38	2,323 92	
45	Célestin Brunet.....	41	1,479 78	
46	Tan: rède Bouillé.....	30	676 70	
47	Ulric Groleau.....	36	638 06	
48	Louis N. Bouillé.....	57	1,000 00	Pilot Str. Montreal
	Total.....		\$43,995 87	

The foregoing sources, viz:—

BRITISH:

Steamers . . .
Sailing Vess

FOREIGN:

Steamers . . .
Sailing Vess

The following apprentice Pilots in this trust:

No.	
1	Alphonse C
2	Nestor Arc
3	Gédéon Gr
4	Néré Belis
5	Hubert Per
6	Audilon Po
7	Leboire Pe
8	John Naud
9	Joseph Hun
10	Wilfred Ra
11	Adolphe Ri
12	Joseph Lar
13	Edouard Pe
14	Lydoric Bo
15	Elié Bouillé
16	N. Edson A
17	Honoré Dus
18	Joseph Dus
19	Narcisse Pa
20	Jean Baptist
21	Arthur Briè
22	Aubert Nau
23	J. Sifroy L
24	Alexis Perr

I would state minor character two cases, however the pilots.

On the 15th M Pilot Trefflé Tou

The foregoing amount was received from the following sources, viz :—

BRITISH:

Steamers	\$40,469 35	
Sailing Vessels.....	1,510 69	
		\$41,980 04

FOREIGN:

Steamers.....	\$ 850 20	
Sailing Vessels.....	1,165 63	
		\$ 2,015 83
		\$43,995 87

The following list shows the name and age of each apprentice Pilot serving his time under the authority of this trust:

No.	NAME.	AGE.	RESIDENCE.
1	Alphonse Cossette.....	35	Champlain.
2	Nestor Arcand.....	27	Deschambault.
3	Gédéon Groleau.....	31	Grondine.
4	Néré Belisle.....	31	Deschambault.
5	Hubert Perrault.....	34	Montreal.
6	Audilon Portelance.....	30	Grondine.
7	Leboire Perrault.....	34	Deschambault.
8	John Naud.....	28	do
9	Joseph Hurteau.....	23	Contrecoeur.
10	Wilfred Raymond.....	29	Deschambault.
11	Adolphe Richard.....	35	Contrecoeur.
12	Joseph Langlois.....	28	Pointe-aux-Trembles(en bas)
13	Edouard Perrault.....	33	Deschambault.
14	Lydoric Bouillé.....	26	do
15	Elié Bouillé.....	24	do
16	N. Edson Angers.....	33	do
17	Honoré Dusseau.....	30	do
18	Joseph Dusseau.....	27	do
19	Narcisse Paquet.....	29	do
20	Jean Baptiste Nadeau.....	25	Levis.
21	Arthur Brière.....	26	Portneuf.
22	Aubert Naud.....	29	Deschambault.
23	J. Sifroy Labranche.....	27	Portneuf.
24	Alexis Perrault.....	21	Deschambault.

I would state that there were several casualties of a minor character to vessels within this district; in only two cases, however, were formal complaints made against the pilots.

On the 15th May, the S. S. "Oxenholme," in charge of Pilot Trefflé Toupin, while coming into the harbour, went

aground opposite the Victoria Pier. The vessel fortunately received no damage, and was floated after being lightened. On investigation the Pilot was suspended for two months, viz., June and July.

On the 15th September, the S. S. "Dorset," in charge of Pilot Jos. Pleau, ran aground at Contrecœur. She got off without damage, after having discharged a large portion of her cargo. As there were some extenuating circumstances in connection with the accident, the Pilot was sentenced to forfeit the amount due for pilotage on the said vessel, and was also severely reprimanded.

The Commissioners have, as usual, maintained the buoys and beacons in the Ship Channel and the Harbour, as also in the Rivière des Prairies and in the Richelieu River between St. Johns and Rouse's Point.

The following is the Tariff of Pilotage now in force in the Pilotage District of Montreal:—

QUEBEC TO MONTREAL, OR VICE VERSA.	UPWARDS.	DOWNWARDS.
Pilotage of Vessels in tow of Steamers, for each foot of draught of water	\$2 00	\$2 00
Pilotage of Vessels propelled by Steam, for each foot of draught of water	2 50	2 50
Pilotage of Vessels under Sail, for each foot of draught of water	4 20	2 80
Moving a Vessel from one wharf to another in the Harbour of Montreal, or from foot of the Current St. Mary into the Harbour....	5 00	5 00

The amount received by the Commissioners, as the Pilotage authorities for this district, was as follows:—

For poundage 5 per cent. on the earnings of Pilots.....	\$2,251 72
Interest on investments	2,081 87
	<hr/>
	\$4,333 59

The disbursements for Pensions to old and infirm Pilots and widows of Pilots were.....	\$3,281 76
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I have the honor to be,

Sir,

Your most obedient servant,

H. D. WHITNEY,

Secretary.

DEEPENING

MONTREAL

JOHN KE...

H. D. WHITNEY, J...

Har...

SIR,

I beg to submit to the Commissioners, the report published during the session of the Channel between...

The work now in progress in the channel to 27½ feet depth, under Act 46 Vict. cap. 10, has been authorized by Parliament.

Authority to purchase the Government on the subject was commenced on the 1st of Contrecœur Channel...

REPORT
UPON THE
DEEPENING OF THE SHIP CHANNEL
BETWEEN
MONTREAL AND QUEBEC.

FOR THE YEAR 1883.

JOHN KENNEDY, M. Inst., C. E., *Chief Engineer.*

HARBOUR COMMISSIONERS OF MONTREAL,
Chief Engineer's Office,
MONTREAL, December 12th, 1883.

H. D. WHITNEY, Esq.,
Secretary,
Harbour Commissioners of Montreal.

SIR,

I beg to submit for the information of the Harbour Commissioners, the following report upon the work accomplished during the year 1883 in deepening the Ship Channel between Montreal and Quebec.

The work now in hand is the further deepening of the channel to $27\frac{1}{2}$ feet at low water, in accordance with the Act 46 Vict. cap. 36, passed last session of the Dominion Parliament.

Authority to proceed with the work was given by Government on the 14th June last, and operations were commenced on the 18th by starting two dredges in the Contrecoeur Channel.

The following are the chief details of the work accomplished from that date until the suspension of dredging by the close of navigation:—

Cap Charles.—Dredging was commenced on the 7th July, and after a projecting point on the north side of the channel had been cut away, a new cut of 26 feet deep at low water was begun at the lower side of the shoal, on north half breadth of the channel.

Dredging was continued by one dredge, assisted when requisite by a stone-lifter, until Nov. 3rd, and at that time there had been raised an aggregate of 17,520 cubic yards shale rock, with a small quantity of boulders.

The quality and hardness of the rock met with in the new cut of 26 feet depth, is substantially the same as that at the shallower depths, and the rate of dredging was somewhat faster than the average of former years.

Poullier Rayer.—A stone-lifter was employed from July 4th to Nov. 3rd in lifting boulders from the north half of the new straight line of channel on the Ste. Emelie Lights, and in that time lifted an aggregate of 6,503 boulders, measuring in all 3,454 cubic yards.

Dredging on the north half of the channel on the same line was commenced near the lower end of the shoal on the 17th October, and continued to the 3rd Nov., during which there was lifted 4,350 cubic yards.

The dredging, as was expected, proved to be very hard clay, with many boulders both on the surface and imbedded in it. The depth dredged is 26 feet at low water.

Cap la Roche.—Work was commenced on the 6th July and closed on the 2nd Nov., three dredges and one stone-lifter having been employed the greater part of the time. Besides some cleaning up of the south half breadth of the channel, a new cut of 23½ feet depth at low water was carried on in three sections, and by the close of the season an aggregate length of 2,880 feet, or about 60 per cent. of the length of the shoal had been cut through. Total quantity dredged, 38,550 cubic yards.

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Pointe Marie.—
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dredges, in deep
Quantity dredge

The rock proved to be shale of the same character as that met with in previous years, and the rate of dredging has been rather better.

Champlain Point.—On examination of the dredged channel through the small shoal at Champlain Point, it was found that the sand had again filled it up at two points to a depth of 1 to $2\frac{1}{2}$ feet. A dredge was set to work to clear it out in August, and removed 5,940 cubic yards, and restored the channel to its former depth.

Contrecoeur Channel.—Work was commenced with two dredges on June 18th. The curve at the "Bell mouth" at the lower end of the main cut was at first widened out about 200 feet, increasing its radius from $\frac{3}{4}$ mile to $1\frac{1}{4}$ miles, and thus giving much more room, and an easier turn to vessels entering the channel.

Dredging was then continued upwards from the "Bell mouth" until Dec. 1st, the close of the working season.

During the season there has been dredged in all 272,520 cubic yards. $1\frac{1}{8}$ miles of the north half width of the channel, and $\frac{3}{4}$ of a mile of the whole width, have been deepened to $27\frac{1}{2}$ feet at low water.

Plum Island.—Between Oct. 26th and Nov. 13th, the small shoal which extends across the channel at Poullier Mayrand, was cut through to $27\frac{1}{2}$ feet at low water. Quantity dredged, 5,460 cubic yards.

Pointe Marie.—On Nov. 14th dredging was begun at the lower end of the shoal water at the "Three Buoy," and was continued until the close of the season at 1st December. Quantity dredged, 6,810 cubic yards.

Pointe-aux-Trembles.—During the latter half of November a dredge was engaged at the small piece of rock-cutting opposite the village. Quantity raised, 1,455 cubic yards.

Montreal.—Four spoon dredges were employed the greater part of the summer, at times assisted by elevator dredges, in deepening the channel through the Harbour. Quantity dredged, 143,212 cubic yards.

Abstracts of the quantity dredged at each place, and by each dredge, together with other information as to the work, will be found in the annexed tables

As the financial year of the Commission is not closed at the date of writing this report, this usual statements of the cost of dredging for the year cannot be made up.

Yours respectfully,

JOHN KENNEDY,
Chief Engineer.

DREDGING PLANT employed in Deepening the SHIP CHANNEL between MONTREAL and QUEBEC in 1883.

DESCRIPTION OF VESSELS.	HULL.				When built	Tonnage Register.	Kind of Engine.	ENGINES.				Capacity of Bucket. c. ft.	Depth to which dredge can work. Feet.	REMARKS.
	Length over all.	Breadth of Beam.	Depth of Hold.	No. of Cylinders.				No. of Diam. of Cylind.	Length of Stroke.	Pres're of Steam.	Inches.				Inches.	Lbs.
Dredges, No. 8.	ft. 135	ft. 29	ft. 10	2	1874	Two coupled vertical direct act.	20	32	70	16	35	Wooden hull.		
Elevator Dredge No. 4.	ft. 135	ft. 29	ft. 10	2	1874		20	32	70	16	35			
"	ft. 135	ft. 29	ft. 10	2	1874		20	32	70	16	35			
"	ft. 135	ft. 29	ft. 10	2	1874		20	32	70	16	35			

DREDGING PLANT employed in Deepening the SHIP CHANNEL between MONTREAL and QUEBEC in 1883.

DESCRIPTION OF VESSELS.	HULL.				When built	Tonnage Register.	ENGINES.				Capacity of Bucket.	Depth to which dredge can work.	REMARKS.	
	Length over all.	Breadth of Beam.	Depth of Hold.	ft. in.			Kind of Engine.	No. of Cylinders.	Diam. of Cylind.	Inches.				Length of Stroke.	Inches.	Pres're of Steam.	Lbs.
DREDGES.														
Elevator Dredge No. 8.	135 0	29 0	10 0	1874			2	20	32	70	85	16	35	Wooden hull.
" " No. 9.	135 0	29 0	10 0	1874			2	20	32	65	85	4	35	" "
" " No. 10.	135 0	29 0	10 0	1874			2	20	32	60	85	4	35	" "
" " No. 11.	135 0	29 0	10 0	1874			2	20	32	60	85	4	35	" "
" " No. 12.	135 0	29 0	10 0	1874			2	20	32	70	85	16	35	" "
" " No. 13.	135 0	29 0	10 0	1874			2	20	32	60	85	4	35	" "
TUGS.														
Minnie F. Parsons.....	76 0	15 0	6 6	1864	22.42		1	18½	20	80	.....	.....	.....	Wooden hull.
St. Francis.....	80 0	17 0	7 9	1875	37.93		1	20	22	73	.....	.....	.....	" "
St. John.....	80 0	17 0	7 9	1875	37.93		1	20	22	73	.....	.....	.....	" "
John Pratt.....	96 0	19 2	7 3	1874	21.41		2	14	16	.....	.....	.....	.....	" "
DeJisle.....	62 5	14 9	7 5	1869	17.07		1	18	20	95	.....	.....	.....	" "
C. J. Brydges.....	62 2	16 0	8 0	1874	21.20		1	18	20	76	.....	.....	.....	" "
St. James.....	75 0	17 0	8 2	1875	54.57		1	20	22	.....	.....	.....	.....	" "
BARGES.														
Waverly.....	100 0	20 11	7 1	1870	176.00		.....	.....	.....	.....	.....	.....	.....	Wooden hull.
Drednaught.....	104 2	21 5	7 4	1869	136.42		.....	.....	.....	.....	.....	.....	.....	" "
Caroline.....	103 8	22 5	5 3	1864	132.95		.....	.....	.....	.....	.....	.....	.....	" "
Alfred Demers.....	105 0	22 5	7 6	1878	131.01		.....	.....	.....	.....	.....	.....	.....	" "
Stone Lifter No. 1.....	65 0	22 0	6 0	1858	.....		.....	.....	.....	.....	.....	.....	.....	" "
" " No. 2.....	75 0	24 0	9 9	1878	.....		.....	.....	.....	.....	.....	.....	.....	" "
SCOWS.														
2 Hopper-bottomed.....	80 0	16 0	7 0	1870	30 & 31		.....	.....	.....	.....	.....	.....	.....	3 hoppers.
8 " ".....	80 0	16 0	6 9	1874	33 to 40		.....	.....	.....	.....	.....	.....	.....	" "
2 " ".....	54 6	18 0	7 0	1875	47 & 48		.....	.....	.....	.....	.....	.....	.....	" "
2 " ".....	50 0	19 9	7 3	1876	49 & 50		.....	.....	.....	.....	.....	.....	.....	" "
2 " ".....	89 0	18 0	7 9	1879	51 & 52		.....	.....	.....	.....	.....	.....	.....	" "
3 Flat Scows.....	89 0	18 0	7 9	1880	53 & 54		.....	.....	.....	.....	.....	.....	.....	" "

NOTE.—Different Spoon Dredges belonging to the Montreal Harbor Fleet were, in addition to the above, temporarily employed upon the Ship Channel. Two Flat Scows used for sounding.

Borrow'd from Hb's Wks

ABSTRACT OF DREDGING done by each DREDGE in 1883, in deepening the SHIP CHANNEL between MONTREAL and QUEBEC.

DREDGES.	Com- menced working.	Stopped working.	Time of Service	Places at which work was done.	QUANTITIES DREDGED.			REMARKS.
					Earth, Gravel, &c.	Totals.	Rock.	
			<i>Days.</i>		<i>Cubic Yards.</i>	<i>Cubic Yards.</i>	<i>Cubic Yards.</i>	
Spoon Dredge No. 2			91	Montreal	23,366	23,366		
" " No. 4			104	"	18,146	18,146		
" " No. 5			140	"	45,990	45,990		
" " No. 6			27	"	3,465	3,465		
" " No. 7			144	"	46,080	46,080		Sand, gravel and boulders.
Elevator Dredge No. 8	July 19	Dec. 1	91	Cap la Roche. Pouillier Rayer. Montreal	4,350 2,280	6,630	6,945	Shale rock. Clay and Stones. Sand, gravel and boulders.
Elevator Dredge No. 9	June 18	Dec. 1	139	Champlain Pt. Contrecoeur Plum Island Pointe Marie Montreal	5,940 58,920 5,460 6,810 75	77,205		Coarse sand. Clay. Clay and some stones. Clap and some stones.
Elevator Dredge No. 10	May 19	Dec. 1	169	Cap la Roche Pointe aux Trembles Montreal			17,190 1,455	Shale rock. Shale rock. Sand, gravel and boulders.
Elevator Dredge No. 11	May 14	Dec. 1	95	Cap Charles Montreal	1,680 105	1,680	15,120	Shale rock. Sand, gravel and boulders.
Elevator Dredge No. 12	June 9	Dec. 1	150	Contrecoeur Montreal	213,600 2,025	215,625		Clay. Sand, gravel and boulders.
Elevator Dredge No. 13	May 23	Dec. 1	105	Cap la Roche			14,415	Shale rock.
Stone-lifter No. 1	May 19	Nov. 29	146	Cap Charles and Do. Montreal			170	Boulders.
Stone-lifter No. 2	May 9	Dec. 1		Pouillier Rayer			350	Boulders.
Total Rock and Boulders							59,099	
Total Clay, Sand & Gravel						438,232		
Grand Total							497,391	