DOMINION OF CANADA.

# ANNUAL REPORT

OF THE

# MINISTER

OF

# RAILWAYS AND CANALS

FOR THE PAST

## FISCAL YEAR FROM 1ST JULY, 1881, TO 30TH JUNE,

# 1882.

ON THE WORKS UNDER HIS CONTROL.

SUBMITTED IN ACCORDANCE WITH THE PROVISIONS OF THE ACT THIRTY-FIRST VICTORIA, CHAPTER TWELVE, SECTION NINETEEN, AS AMENDED BY THE ACT FORTY-SECOND VICTORIA, CHAPTER SEVEN.

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1883.

# CONTENTS OF REPORT.

GOVERNMENT RAILWAYS—*Concluded.*

CANALS—*Inland Navigation*—MONTREAL, OTTAWA AND KINGSTON—*Concluded.*

# TABLE OF APPENDICES.

# REPORT.

1881—82.

*To His Excellency the Marquis of Lorne, K.T., K.C.M.G., Governor General of Canada, &c., &c., &c.*

May it Please Your Excellency:

I have the honor to submit the Annual Report of the Department of Railways and Canals for the fiscal year ended 30th June, 1882.

This Report is submitted in accordance with the provisions of the Act 31 Vict. Cap. 12 (1867), as amended by the Act 42 Vict. Cap. 7, Sections 4 and 5 (1879).

The Annual Reports of the Chief Engineers, together with general and special Reports from Superintendents both of Railways and Canals, and from other Officers of the Department, are given in Appendices.

## RAILWAYS.

The present report deals with the undermentioned Railways of the Dominion, either directly controlled by the Federal Government, or towards the construction of which subsidies have been granted or authorized.

*Controlled*:

The Intercolonial.
The Prince Edward Island.

*Subsidized, or with subsidy authorized*:

The Canadian Pacific.
The Canada Central (Pembroke to Callander.)
Gravenhurst to Callander.
St. Raymond to Lake St. John.
Rivière Ouelle to Edmunston.
The Great American and European Short Line.
The Chignecto Marine Transport Railway.

## CANADIAN PACIFIC RAILWAY.

Under the terms of the contract entered into in 1881 with the Canadian Pacific Railway Company, the Government have undertaken to construct the line, between —Prince Arthur's Landing on Lake Superior, and Red River;—and between Savona's Ferry, at the foot of Lake Kamloops, and Port Moody, in British Columbia; and the Company, on their part, have undertaken to construct, within a specified time, the line between Callander Station, their eastern terminus at the east end of Lake Nipissing, and Prince Arthur's Landing; also, between Red River and Savona's Ferry: the whole line to be the property of the Company, and to be maintained and operated by the said Company.

*Trunk Line:—*

The following distances are calculated on a route running through the city of Winnipeg, and by the Kicking Horse Pass, if approved:—

| | Miles. |
|---|---|
| 1. From Callander (120 miles west from Pembroke) to Prince Arthur's Landing, an estimated distance of..... | 650 |
| 2. From Prince Arthur's Landing to Winnipeg..... | 433 |
| 3. From Winnipeg, *via* Kicking Horse Pass, to Savona's Ferry (at the foot of Kamloops Lake) an estimated distance of..... ..... | 1,259 |
| 4. From Savona's Ferry to Port Moody..... .... .. | 215 |
| Approximate length of the trunk line between Callander and Port Moody on the Pacific..... | 2,557 miles. |

In addition to the line of the Canada Central Railway between Ottawa and Callander, a distance of 228 miles, which was acquired last year by the Canadian Pacific Railway Company, they have now purchased and operate the portion of the line of the Quebec, Montreal, Ottawa and Occidental Railway between Ottawa and Montreal, a distance of 119 miles; being an addition of 347 miles incorporated into their main line system, making the total approximate distance between Montreal and Port Moody, 2,904 miles.

The section of road, 120 miles, between Pembroke and Callander for the construction of which the Canada Central Railway was subsidized by the Government to the extent of $12,000 a mile, is nearly completed, only a small amount of ballasting, filling, etc., remaining to be done. The road for a distance of 94 miles between Pembroke and Mattawa is under traffic, and the remainder is in use for the transport of materials and supplies for the construction of the line west from Callander.

PROGRESS OF WORKS UNDER GOVERNMEET.

The branch line from Emerson to Winnipeg, 65 miles, and the main line from Winnipeg, eastward to Telford, 94 miles, having been transferred to the Company under an Order in Council of the 9th of April, 1881, the portions of the railway, the completion of which, under the contract, remained to be carried out by the Government at the beginning of the fiscal year, 1881-82, were as follows:—

| | Miles. |
|---|---|
| From Prince Arthur's Landing to Telford..... | 339 |
| From Savona's Ferry to Port Moody..... | 215 |
| | 554 |

Under an Order in Council of the 12th of January, 1882, a sub section of road 40 miles in length between Telford and a point near Rat Portage, was transferred to the Company.

On the remaining distance, between Prince Arthur's Landing and Rat Portage the following is the position of the road.

The subsection, 6 miles, between Prince Arthur's Landing and Fort William, though not ballasted, is in a fair condition for the passage of trains.

The adjoining subsection, 112 miles, between Fort William and English River, though completed, has suffered from subsidence in embankments, which with certain of the older structures, must be renewed and made good.

The track on the next subsection, between English River and Eagle River, 114 miles, was laid throughout by the 25th of August, 1881, and the works are drawing near completion. The line has been used for construction and supply trains during the present season.

From Eagle River to Keewatin (Rat Portage), 67 miles, the works have made good progress, the track having been laid throughout by the 19th of June, (1882). The filling up of ravines now crossed by trestle bridges, the erection of station buildings, ballasting, and some minor masonry, comprise all remaining to be done.

Of the works in British Columbia, between Savona's Ferry and Port Moody, 215 miles, the subsection between Port Moody and Emory's Bar, 85½ miles, has been placed under contract, and the works, commenced in the spring of 1882, are being vigorously prosecuted. The contractors for the remaining distance have so far advanced as to have over 22 miles of track laid from Emory's Bar, east, comprising some of the heaviest work yet done on the railway.

The iron bridge superstructure to span the Fraser River near Lytton is now being manufactured.

PROGRESS OF WORKS UNDER THE CANADIAN PACIFIC RAILWAY COMPANY.

The works to be executed by the Company under their contract are as follows:

| | Miles. |
|---|---|
| From Callander to Prince Arthur's Landing, an estimated distance of | 650 |
| From Winnipeg to Savona's Ferry, an estimated distance of | 1,259 |
| | 1,909 |

*Main Line, Eastern Section*, (From Callander to Prince Arthur's Landing.)—From Callander, westward, for a distance of 82 miles, up to the River Wahnapitæ, the line has been located, and upon the first 40 miles, up to Sturgeon River, the track has been laid, while the grading and bridging for a similar distance are in a forward state.

*Main Line, Central Section*, (From Red River to Kamloops).—Upon this section the Company, up to the date of last year's report, had completed 163 miles of road west from Winnipeg.

Surveys were then in progress by the Company in the Mountain District, having in view the finding of a pass which would give a shorter route than that by the Yellow Head Pass, the route contemplated in their contract.

By an Act passed last session authority was given as follows:

"The Canadian Pacific Railway Company may, subject to the approval of the Governor in Council, lay out and locate their main line of railway from Selkirk to the junction with the western section by way of some pass other than the Yellow Head Pass, provided that the pass be not less than one hundred miles from the boundary between Canada and the United States of America."

The location of the line up to the South Saskatchewan River, a distance of about 660 miles from Winnipeg, has received approval, and on this distance the Company have now, up to the end of January, 1883, completed 581 miles of road.

In October last the opening of the line for traffic up to Regina, a distance, according to the published time tables of the Company, of 356 miles, was authorized.

*Subsidy.*—Under the ninth section of their contract it was provided as follows:—"Upon the construction of any portion of the railway hereby contracted for, not less than 20 miles in length, and the completion thereof so as to admit of the running of regular trains thereon, together with such equipment thereof as shall be required for the traffic thereon, the Government shall pay and grant to the Company the money and land subsidies applicable thereto." Under a series of Orders in Council, based upon certificates of the Chief Engineer, portions of the said subsidies have, from time

to time since the commencement of the work, been paid to the Company upon such completion of an extent of road, amounting, for both the eastern and central sections, to 601 miles.

*Tariff.*—Under an Order in Council dated the 29th of April, 1881, a tariff of charges for freight and passengers on the Canadian Pacific Railway was approved, and has since been in force; a revision of this tariff is now under consideration.

### Branch Lines.

In addition to the subsidy for their main line, the Company have, under their contract, the right to receive a grant, in so far as it is vested in the Government, of the land required for road-bed, stations, etc., in the construction of branch lines.

The Company have under construction the following branches:—The Sault Ste. Marie and the Pembina Mountain or South-Western.

*Pembina Mountain or South-Western.*—The Company have constructed a branch, about 100 miles in length, extending in a south-westerly direction from Winnipeg, west of Red River, to Pembina Mountain, and this branch is now in operation.

A sub-branch, 13 miles long, extends from this line to Gretna (formerly known as Smugglers' Point) on the International boundary.

*Sault Ste. Marie.*—This branch has been located by the Company from Algoma Mills (Lake Huron) up to the Wahnapitæ River, a distance of about 100 miles, and they have carried on works of grading and bridging during the summer upon the first 60 miles from Algoma Mills.

*Bridge over the Red River at Emerson.*—At the last Session of Parliament a sum of $30,000 was voted for the purpose of aiding the Corporation of the town of Emerson in the construction of an ordinary highway bridge over the Red River at that place. The grant of a further sum of $20,000 is considered desirable in order that the corporation may be enabled to make this a railway as well as an ordinary highway bridge; it being in contemplation by the Canadian Pacific Railway Company to construct a line connecting the town of Emerson with the point where their South-Western branch diverges to the west.

A branch known as the Stonewall Branch, about 22 miles in length, between Winnipeg and Stonewall, originally formed part of the Government line west from Winnipeg, and was taken over by the Company at cost price.

### Telegraph Line.

The Canadian Pacific Telegraph has been transferred to the Department of Public Works.

## GOVERNMENT RAILWAYS IN OPERATION.

The several lines operated and maintained by the Government during the past fiscal year were:—

| | |
|---|---|
| The Intercolonial | 840 |
| Prince Edward Island | 199 |
| Windsor Branch (maintained only) | 32 |
| Total mileage | 1,071 |

The General Revenue Accounts for 1881-2, shew the following as the financial position of these roads for the past fiscal year:—

| — | Expenditure. | Earnings. | Profit. | Loss. |
|---|---|---|---|---|
| | $ cts. | $ cts. | $ cts. | $ cts. |
| Intercolonial | 2,069,657 48 | 2,079,262 66 | 9,605 18 | |
| Prince Edward Island | 228,259 97 | 137,267 54 | | 90,992 43 |
| Windsor | 13,099 55 | 21,053 19 | 7,953 64 | |
| | | | 17,558 82 | 90,992 43 |
| | | | | 17,558 82 |
| Balance, loss on working | | | | 73,433 61 |

## INTERCOLONAL RAILWAY.

### Length of Line.

*Ocean Mail Line.*

| | Miles. | |
|---|---|---|
| Point Levis to Rivière du Loup | 126 | |
| Rivière du Loup to Moncton | 374 | |
| Moncton to Painsec | 8 | |
| Painsec to Truro | 118 | |
| Truro to Halifax | 62 | |
| | | 688 |

*Extensions.*

| | | |
|---|---|---|
| Moncton to St. John | 89 | |
| Painsec to Shediac | 11 | |
| Truro to Pictou | 52 | |
| | | 152 |
| | | 840 |

*Local Branches.*

| | Miles. |
|---|---|
| Rimouski to Wharf | 2 |
| Newcastle, N.B., to Deep Water Wharf | 2 |
| Dorchester to Shipping Wharf | 1 |
| Sackville to Shipping Wharf | 0·5 |
| Stewiacke to Wharf | 1 |
| | 6·5 |

The wharf and warehouse accommodation at the Halifax ocean terminus provided last year has greatly aided the movement of freights, and such additions are now being made as will more than double these facilities. The depth of water will be such as to afford berthing for the largest of any of the ocean steamers. A special coaling wharf has been built, having an elevated track, so that coal can be delivered direct from the cars into the ship's bunkers, while the construction of a large grain elevator will give all needed facilities for the shipment of grain.

Under an appropriation granted last year for the purpose, increased accommodation for the reception of freight at the Deep Water terminus of the Intercolonial Railway at St. John, New Brunswick, has been furnished.

The efficiency of the rolling stock of the road has been maintained. The still increasing traffic, however, calls for further additions to the stock.

The repairs and renewals executed during the past fiscal year have embraced the maintenance of bridges, the erection of about 80 miles of fences, the erection of combined freight and passenger station buildings at Derby and Eel River, the erection of new buildings for the accommodation of station masters at Causapscal, Jacquet River, and Painsec, and of improvements to the buildings at Aulac and Sackville.

The road has been maintained in good order.

The total cost of the road and equipment chargeable to capital account at the close of the fiscal year 1880-81, was.....$38,974,452 44

The expenditure charged to capital account for the year ended 30th June, 1882, is as follows:—

| | |
|---|---|
| Halifax extension | $173,109 84 |
| Deep water terminus, St. John | 19,712 16 |
| Repairs and improvements, Rivière du Loup section | 14,980 47 |
| Rolling stock for Rivière du Loup Branch | 153,953 84 |

| | | |
|---|---|---|
| Completion of the Intercolonial..... | 18,246 98 | |
| Additional rolling stock..... | 205,005 20 | |
| St. Charles Branch..... ..... | 660 30 | |
| | | 585,568 79 |
| Making a total cost to 30th June, 1882, of..... | | $39,560,021 23 |

The revenue account shows a continued increase.

| | |
|---|---|
| The gross earnings for the year were..... | $2,079,262 66 |
| The working expenses were..... | 2,069,657 48 |
| Net earnings ..... | $9,605 18 |

The gross earnings exceed those of the year previous by $318,868.74.

The engine mileage compared with that of last year, was:—

| | |
|---|---|
| 1881-82..... | 3,900,850 |
| 1880-81..... ..... ..... | 3,453,078 |
| Increase..... | 447,772 miles. |

The car mileage compared with that of last year, was:—

| | |
|---|---|
| 1881-82..... | 37,489,376 |
| 1880-81..... | 32,201,157 |
| Increase..... | 5,288,219 miles. |

The train mileage compared with that of last year was:—

| | |
|---|---|
| 1881-82..... | 3,195,566 |
| 1880-81..... ..... ..... | 2,813,723 |
| Increase..... | 381,843 miles. |

The working expenses per mile run by engines were:—

| | Cents. |
|---|---|
| 1881-82..... | 53·05 |
| 1880-81 ..... | 50·96 |

The working expenses per mile run by train were:—

| | |
|---|---|
| 1881-82..... ..... ..... ..... | 64·77 |
| 1880-81..... | 62·54 |

| | |
|---|---|
| The gross tonnage carried during the year 1881-82, was..... | 838,956 tons. |
| " " " " 1880-81, " ..... | 725,577 " |
| Increase..... ..... | 113,379 tons. |

### St. Charles Branch.

This branch, for the construction of which an appropriation was voted last Session, is intended to connect the Intercolonial Railway, at St. Charles, with Point Lévis, a distance of about thirteen miles. The work of grading and track-laying is well advanced, and it is expected that the track will be laid into Lévis during the present winter.

## PRINCE EDWARD ISLAND RAILWAY.

### Length of Line.

| | Miles. | |
|---|---|---|
| Tignish to Royalty Junction | 113½ | |
| Royalty Junction to Mount Stewart | 20 | |
| Mount Stewart to Georgetown | 21 | |
| | | 154½ |

### Extensions.

| | | |
|---|---|---|
| Royalty Junction to Charlottetown | 5 | |
| Mount Stewart to Souris | 32 | |
| | | 44 |
| | | 198½ |

The total expenditure on capital account to the 30th of June, 1881, was $3,466,588.57. An increase of $402.63 has been incurred during the year.

The revenue account for the year amounted to $137,267.54.

The working expenses, including the cost of erecting new stations, freight houses, coal sheds, and other improvements, amounted to $228,259.97.

The road has been well maintained throughout the year, and the business done shows an increase. Improvements effected in the way of additional station buildings, the laying of new sidings, snow fencing, and the exceptionally heavy cost of snow clearance, have increased the working expenses.

The working expenses and receipts for the year ended the 30th of June, 1882, were:—

| | |
|---|---|
| Total expenses | $228,259 97 |
| " earnings | 137,267 54 |
| Excess of expenditure | $ 90,992 43 |

The gross earnings, compared with those of the previous year, were:—

| | |
|---|---|
| 1881-1882 | $137,267 54 |
| 1880-1881 | 131,131 43 |
| Increase | $6,136 11 |

The gross expenditure compared with that of the previous year, was:—

| | |
|---|---|
| 1881-1882 | $228,259 97 |
| 1880-1881 | 203,122 88 |
| Increase | $25,137 09 |

The car mileage compared with that of the previous year, was:—

| | |
|---|---|
| 1880-1881 | 1,122,419 miles. |
| 1881-1882 | 1,117,989 " |
| Decrease | 4,430 " |

The engine mileage, compared with that of the previous year, was:—

| | |
|---|---|
| 1881-1882 | 317,194 miles. |
| 1880-1881 | 314,918 " |
| Increase | 2,276 " |

### Windsor Branch.

This branch, 32 miles in length, is still operated by the Windsor and Annapolis Railway Company, under the arrangement that the Company pay all charges in connection with the working, two-thirds of the gross receipts being allowed them for such purpose; the Government taking the remaining one-third and assuming all cost of maintenance.

The earnings and expenditure for the year were as follows:—

| | |
|---|---|
| Gross earnings accruing to the Government | $21,053 19 |
| Expenditure for maintenance of way and works | 13,099 55 |
| Balance | $ 7,953 64 |

The road has been kept in good working order, and extensive repairs have been made to masonry and other works. It is in contemplation to renew the track in part with steel rails.

### Pictou Branch.

By the Statute of Canada, 42 Vict. ch. 12, amending the original Act. 40 Vict. ch. 46, it is enacted that the transfer of the Pictou Branch line of the Intercolonial shall be made to the Halifax and Cape Breton Railway and Coal Company so soon as the 82 miles of railway extending from New Glasgow to the Gut of Canso have been constructed and equipped to the satisfaction of the Nova Scotia Government, and a ferry has been established between the main shore and the Island of Cape Breton, at the terminus of the Railway.

The transfer has not yet been made.

SUBSIDIES.

Under an Act, 45 Vic., cap. 14, passed last Session, the grant of certain subsidies as authorized, upon specified conditions as to payments, running powers, and traffic arrangements, towards the construction of the following lines of railway :—

| | |
|---|---|
| For a railway from Gravenhurst to Callander, both in the Province of Ontario, a subsidy not exceeding $6,000 per mile, nor exceeding in the whole..... | $660,000 |
| For a railway from St. Raymond to Lake St. John, both in the Province of Quebec, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... | 384,000 |
| For a railway from a point on the Intercolonial Railway at Rivière du Loup or Rivière Ouelle in the Province of Quebec, or between them, to Edmundston in the Province of New Brunswick, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... | 240,000 |
| For a railway from Oxford to New Glasgow, both in the Province of Nova Scotia, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... | 224,000 |
| Total..... | $1,508,000 |

The Act further provided that the grants should be made "to such Companies as shall be approved by the Governor in Council, as having established to his satisfaction their ability to complete the said railways respectively, within a reasonable time to be fixed, by Order in Council, and according to descriptions and specifications to be approved by the Governor in Council, on the report of the Minister of Railways and Canals, and specified in an agreement to be made by the Company with the Government, and which the Government is empowered to make."

With respect to three of the above mentioned lines, namely, the line from Gravenhurst to Callander, that from Rivière du Loup or Rivière Ouelle to Edmundston, and the line from St. Raymond to Lake St. John, no final arrangements have been entered into with any Company for their construction.

*The Great American and European Short Line Railway Company*,—Under an Order in Council of the 24th of July, 1882, a contract has been entered into with the Great American and European Short Line Railway Company by which they are to build a line between Oxford and New Glasgow by the 1st of January, 1884. Considerable progress has been made by the Company, but no money has yet been paid by the Government.

*Chignecto Marine Transport Railway*.—An Act past last session, 45 Vic., ch. 55, 1882, authorizing a grant of a subsidy of $150,000 a year, for a term of 25 years to the

Chignecto Marine Transport Railway Company, for the construction of a line o railway for the transport of ships across the Isthmus of Chignecto, between La Bai Verte, in the Gulf of St. Lawrence, and the Bay of Fundy.

No contract has yet been entered into with the Company.

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## CANALS.

The canal systems of the Dominion, under Government control, are as follows:—

1. The River St. Lawrence and Lakes.
2. The River Ottawa.
3. The Rideau Navigation from Ottawa to Kingston.
4. The Trent Navigation.
5. The River Richelieu from the St. Lawrence to Lake Champlain.
6. St. Peter's Canal, Cape Breton, Nova Scotia.

### RIVER ST. LAWRENCE AND LAKES.

The River St. Lawrence, with the system of canals established on its course above Montreal, and the Lakes Ontario, Erie, St. Clair, Huron and Superior with connecting canals, afford a course of water communication extending from the Straits of Belle-Ile to Duluth, at the head of Lake Superior, a distance of 2,384 statute miles.

The difference in level between Lake Superior and the point on the St. Lawrence near to Three Rivers, where tidal influence ceases, is about 600 feet.

The Dominion canals, constructed between Montreal and Lake Erie, are the Lachine, Beauharnois, Cornwall, Farran's Point, Rapide Plat, Galops and Welland. Their aggregate length is 70½ miles; total lockage (or height directly overcome by locks) is, 533¼ feet; number of locks, 53.

Communication between Lakes Huron and Superior is obtained by means of the Sault St. Marie Canal, situated on the United States side of the channel.

The canal is a little over a mile in length, and has one lock 515 feet long, 80 feet wide, with 16 feet of water on the sills, and a lift of about 18 feet.

A statement of distances, and of sections of navigable waters, from the Straits of Belle-Ile to Duluth, at the head of Lake Superior, is given in the appendices. (app. 13, p. 146.)

### ST. LAWRENCE CANALS.

In 1841, at the time when the system of canals between Montreal and Lake Ontario was designed, it was in contemplation to afford a depth, at all stages of the St. Lawrence waters, of nine feet, a depth seemingly, from the data then possessed, secured through the works proposed. The River St. Lawrence is, however, from

ious reasons, subject to fluctuations, whose extent it was impossible, at the time en these canals were originally constructed, to arrive at with precision, and continued observations and experience of subsequent years have shown that certain periods of low water this depth cannot be maintained.

The following list shows the least depth of water on the sills of the Locks of the . Lawrence Canals at a time of exceptionally low water, in the year 1872 (*vide* eport of Chief Engineer, 1880):

| | Feet. | Inches. |
|---|---|---|
| Rapide Plat, guard lock | 6 | 7 |
| " " lower entrance | 7 | 0 |
| Galops, guard lock | 8 | 1 |
| Iroquois, lower entrance | 9 | 3 |
| Farran's Point | 7 | 9 |
| Cornwall, guard | 8 | 3 |
| " lower entrance | 9 | 0 |
| Beauharnois | 10 | 10 |
| " lower entrance | 9 | 3 |

The above list shows that if through navigation is to be afforded upon a scale commensurate with the development of the lake commerce, the enlargement of these canals and locks from Lake St. Louis upwards is necessary, and, indeed, in some cases, is urgently called for.

On the Rapide Plat Canal, which gives the lowest level of the series, it is proposed to construct a new lock at the upper entrance. The scale of the general enlargement scheme for permanent works will be adopted, such, namely, as to give a depth of 14 feet of water at the lowest observed level of the St. Lawrence.

The revenue accrued from the operation of the several canals during the past fiscal year, 1881-82, as ascertained from the Department of Inland Revenue, is as follows:—

| Canals. | Tolls, &c. | Hydraulic Rents. | Total Revenue. |
|---|---|---|---|
| | $ cts. | $ cts. | $ cts. |
| Welland Canal | 110,441 07 | 5,909 81 | 116,350 88 |
| St. Lawrence Canals | 100,023 00 | 14,555 00 | 114,578 00 |
| Chambly Canal | 24,022 20 | Nil. | 24,022 20 |
| Ottawa Canals | 58,495 05 | 16 00 | 58,511 05 |
| Rideau Canal | 6,136 76 | 1,695 50 | 7,832 26 |
| Burlington Bay Canal | 3,657 90 | 150 00 | 3,807 90 |
| Newcastle District Works | 311 68 | Nil. | 311 68 |
| St. Peter's Canal | 926 74 | Nil. | 926 74 |
| Total | 304,014 40 | 22,326 31 | 326,340 71 |

TOLLS.

*St. Lawrence and Welland.*

Under an Order in Council dated the 21st of April, 1881, published in the *Canada Gazette* of the 27th of that month, and printed in the appendices to the present Report, certain important amendments and reductions in the tolls upon freight passing through the St. Lawrence and Welland Canals have been made. (See Appendix 14, page 147.)

## LACHINE CANAL.

| | Old Line. | New Line. |
|---|---|---|
| Length of canal..... | 8½ statute miles. | 8½ statute miles. |
| Number of locks..... ..... | 5 | 5 |
| Dimensions of locks.....200 feet by 45 feet. | | 270 feet by 45 feet. |
| Total rise or lockage..... | 44¾ feet | 45¾ feet. |
| Depth of water on sills..... at two locks | 16 " | 18 " |
| Depth of water on sills..... at three locks. | 9 " | 14 " |
| Breadth of canal at bottom... | 80 " | mean width 150 feet. |
| Breadth of canal at water surface.....120 | " | |

This canal extends from the City of Montreal to the Village of Lachine, overcoming the St. Louis Rapids, the first series of rapids which bars the ascent of the River St. Lawrence. They are 986 miles distant from the Straits of Belle-Ile.

The canal now consists of one channel with two distinct systems of locks, the old and the enlarged.

The canal was closed on the 1st December, 1881, and opened on the 25th of April, 1882.

The works have been maintained in an efficient state, and navigation has been conducted without accident or interruption.

NEW WORKS.

The work of enlargement has now been completed with the exception of the entrance channel and harbour at Lachine, and both the old and the new systems of locks have been in use since June, 1882.

The works at the Lachine entrance comprise the construction of a pier 6,200 feet long, and the excavation of the channel. Over one-half of the channel nearest the guard lock has been excavated, and the work is progressing favourably. It will be continued through the winter, and will probably be completed early in the season of 1884.

The construction of two masonry-faced basins at St. Gabriel, Montreal, for hich an appropriation was granted last session, will shortly be placed under con-act.

Settlement has been obtained with the contractors for all the sections of com-eted work, except two.

The construction of the pier at the Lachine entrance has interfered with the inter ferry of the Grand Trunk Railway Co.'y, ice having formed, owing to the con-equent alteration in the set of the current. The obstruction having been brought bout through the Government works, it was decided to extend the existing wharf o a point where it is found that ice does not form, and the work is now in progress.

## BEAUHARNOIS CANAL.

| | |
|---|---|
| Length of canal | 11¼ statute miles. |
| Number of locks | 9 |
| Dimensions of locks | 200 feet by 45 feet. |
| Total, rise or lockage | 82½ feet |
| Depth of water on sills | 9 " |
| Breadth of canal on bottom | 80 " |
| Breadth of canal at water surface | 120 " |

This canal commences on the south side of the St. Lawrence, 15¼ miles from the head of the Lachine Canal. It connects Lakes St. Louis and St. Francis, and passes the three rapids known respectively as the Cascades, the Cedars, and the Coteau.

The canal was closed by ice on the 28th of November 1881, and was reopened for traffic on the 25th of April, 1882.

The works have been maintained in good condition, all necessary repairs having been executed.

## CORNWALL CANAL.

| | |
|---|---|
| Length of canal | 11½ statute miles. |
| Number of locks | 7 |
| Dimensions of locks | 220 feet by 55 feet. |
| Total rise, or lockage | 48 feet. |
| Depth of water on sills | 9 " |
| Breadth of canal at bottom | 100 " |
| Breadth of canal at water surface | 150 " |

From the head of the Beauharnois to the foot of the Cornwall Canal there is a navigable stretch through Lake St. Francis of 32¾ miles.

The Cornwall Canal extends past the Long Sault Rapids.

This canal was closed on the 10th of December, 1881, and re-opened on the 25th of April, 1882.

Ordinary repairs to locks, lock gates, weirs, and works generally, were executed.

NEW WORKS.

The works of enlargement at the lower entrance, comprising the formation of an entrance channel, and the construction of two locks (taking the place of three on the old line) together with the excavation of a basin between the locks, have been completed, for use when required, since the 20th of October last, leaving four locks and the prism of the canal to be hereafter dealt with. The dimensions of the new locks are those of the general enlargement scheme, namely, length 270 feet, breadth 45 feet, depth of water 14 feet. The basin between these two locks is 825 feet long.

## WILLIAMSBURGH CANALS.

The Farran's Point, Rapide Plat and Galops Canals are collectively known as the Williamsburgh Canals.

Navigation was carried on throughout the season without accident or delay.

### FARRAN'S POINT CANAL.

| | |
|---|---|
| Length of canal | ¾ mile |
| Number of locks | 1 " |
| Dimensions of locks | 200 feet by 45 feet. |
| Total rise, or lockage | 4 " |
| Depth of water on sills | 9 " |
| Breadth canal at bottom | 50 " |
| Breadth of canal on water surface | 99 " |

From the head of the Cornwall Canal to the foot of Farran's Point Canal, the distance on the River St. Lawrence is 5 miles. This latter canal enables vessels ascending the river to avoid the Farran's Point Rapid. Descending vessels run the rapids with ease and safety.

The canal was closed on the 10th December, 1881, and re opened on the 24th April, 1882.

In addition to the ordinary repairs to lock-gates and fittings, a portion of the pier or dock at the lower entrance has been re-built.

### RAPIDE PLAT CANAL.

| | |
|---|---|
| Length of canal | 4 miles. |
| Number of locks | 2 |
| Dimensions of locks | 200 feet by 45 feet. |

| | |
|---|---|
| Total rise, or lockage | 11½ feet. |
| Depth of water on sills | 9 " |
| Breadth of canal at bottom | 50 " |
| Breadth of canal at surface of water | 90 " |

From the head of Farran's Point Canal to the foot of Rapide Plat Canal there is a navigable stretch of 10½ miles. This canal was formed to enable vessels ascending the river to pass the rapid at that place. Descending vessels run the rapid safely.

The canal was closed on the 10th December, 1881, and re-opened on the 24th April, 1882.

All necessary repairs have been duly executed.

## GALOPS CANAL.

| | |
|---|---|
| Length of canal | 7⅝ miles. |
| Number of locks | 3 |
| Dimensions of locks | 200 feet by 45 feet. |
| Total rise, or lockage | 15¾ feet. |
| Depth of water on sills | 9 " |
| Breadth of canal at bottom | 50 " |
| Breadth of canal at surface of water | 90 " |

From the head of Rapide Plat Canal to Iroquois at the foot of the Galops Canal, the St. Lawrence is navigable for 4½ miles. This canal enables vessels to overcome the rapids at Pointe aux Iroquois, Pointe Cardinal, and the Galops.

The canal was closed en the 10th December, 1881, and re-opened on the 24th April, 1882.

The repairs have been of an ordinary character.

### GALOPS RAPIDS IMPROVEMENT.

The progress on these works, which consist of the excavation of a straight channel through the rapids, 3,300 feet long, 200 feet wide, and adapted to a 14-feet navigation, has been all that could be desired in view of the difficult nature of the undertaking. It comprises the completion of a cutting to the full depth, and of one-half the necessary width, through one of the shoals, representing the removal of over 6,000 cubic yards of rock. Details of the work will be found in the appended report of the Engineer in charge.

## WELLAND CANAL

### MAIN LINE, FROM PORT DALHOUSIE, LAKE ONTARIO, TO PORT COLBORNE, LAKE ERIE.

By the works of enlargement, passage is now afforded, at all stages of the Lake Erie level, to vessels drawing 12 feet of water, excepting at the point where the canal is carried by an aqueduct over the Chippewa River.

Here, the necessity of continuing to use the old work, pending the building of the enlarged aqueduct, the completion of which cannot be looked for before two years, renders care advisable, and the draught of vessels using their own motive power should not at this point, exceed 11½ feet; the draught of vessels in tow, however, may be 12 feet. At periods of low water in Lake Erie, and especially during a continuance of strong easterly winds, the draught of all vessels, to enable them to pass freely through the present aqueduct, should not exceed 11½ feet.

| | Old Line. | Enlarged or New Line. |
|---|---|---|
| Length of canal | 27⅕ miles. | 26¾ miles. |
| Pairs of guard gates. (formerly 3). | 2 | 2 |
| Number of locks { lift | 26 | lift 25 |
| Number of locks { guard | 1 | guard 1 |
| Dimensions | 2 locks 200 x 45<br>1 (tidal) 230 x 45<br>24 150 x 26½ | 270 feet x 45 feet. |
| Total rise or lockage | 326¾ feet. | 326¾ feet. |
| Depth of water on sills | 10¼ " | 12 " |

### Welland River Branches.

| | |
|---|---|
| Length of Canal—Port Robinson Cut to River Welland | 2,622 feet. |
| " From the Canal at Welland to the River *via* lock at Aqueduct | 300 " |
| " Chippawa Cut to River Niagara. | 1,020 " |
| Number of locks—One at Aqueduct and one at Port Robinson | 2 |
| Dimensions of locks | 150 by 26½ feet. |
| Total lockage from the Canal at Welland down to River Welland | 10 feet. |
| Depth of water on sills | 9 feet 10 inches. |

### Grand River Feeder.

| | |
|---|---|
| Length of canal | 21 miles. |
| Number of locks | 2 |
| Dimensions of locks { | 1 of 150 by 26½ feet.<br>1 of 200 by 45 " |
| Total rise or lockage | 7 to 8 feet. |
| Depth of water on sills | 9 feet. |

PORT MAITLAND BRANCH.

| | |
|---|---|
| Length of canal..... | 1¾ miles. |
| Number of locks..... | 1 |
| Dimensions of lock ..... | 185 by 45 feet. |
| Total rise of lockage..... | 7½ feet. |
| Depth of water on sills..... | 11 " |

The canal was closed on the 15th December, 1881, and re-opened on the 20th pril, 1882.

The Welland Canal has one entrance from Lake Ontario at Port Dalhousie, vo from Lake Erie, one for the main line at Port Colborne, and one for the eder route at Port Maitland; it has also an entrance from the River Niagara at the own of Chippewa. The enlarged route lies between Port Dalhousie and Port olborne.

From Port Dalhousie to Allanburgh, 11¾ miles, there are now two distinct lines f canal in operation, the Old line, and the enlarged or New line.

From Allanburgh to Port Colborne, a distance of 14 miles, there is only one hannel, the old canal having been enlarged.

NEW WORKS.

The navigation of the enlarged canal has been conducted throughout the season vith but one interruption; the use of the old canal on this occasion obviated all erious inconvenience.

Arrangements are now completed for the lighting of the new canal with gas nder a system of burners affording a greatly intensified illuminating power. The old canal will henceforward be unlighted.

Work still remains to be done in widening the section between Humberstone and Port Colborne, known as the "rock cutting." It was found necessary to relet the work, and it is now being successfully carried on by sub-aqueous excavation, and without interruption to navigation.

The work of building the new enlarged aqueduct, whereby the waters of the canal are to be carried over the Chippewa River, is making fair progress.

Out of the 36 contracts given out for the enlargement of the canal, 28 have been finally settled for, three are under reference to Mr. Page as sole arbitrator, three are awaiting a final estimate of the work, and in two cases, as above shown, the work is unfinished.

## OLD CANAL.

### Port Dalhousie to Allanburg.

On this section navigation has been interrupted twice during the year.

On the 24th November, 1881, the propeller "Europe" ran into the head gates o Lock No. 1, and four gates were carried away.

On the 6th June, 1882, the barge "Oriental" also ran into the head gates, an again four gates were carried away.

On each occasion the interruption to traffic lasted three days.

The water supply has been sufficient for all the demands of navigation an manufacture.

The repairs and renewals executed here have been unusually heavy. Amongs the former is included the restoration of weirs, bridges and raceways; in the latte the substitution of an iron superstructure, on stone piers, carrying an enlarged flum designed to take the place of the old hydraulic race aqueduct.

It has been decided to make some improvements to lock No. 2, of the old canal including the lengthening of the lock chamber to 270 feet: the work has been place under contract.

### Feeder Junction to Dunnville and Port Maitland.

The east pier at Port Maitland has been substantially rebuilt.

All needed repairs have been made, and the works are in good condition.

## BURLINGTON BAY CANAL.

| | |
|---|---|
| Length of canal | ½ mile. |
| Average breadth between piers | 138 feet. |
| Least " | 108 " |

This canal is cut through the sand bar which separates Burlington Bay fro Lake Ontario, and is navigable without locks for vessels drawing ten feet of wate It gives access to the Port of Hamilton, and to the Town of Dundas, *viâ* the De jardins Canal.

The canal was closed on the 19th of December, 1881, and re-opened on the 20t of April, 1882.

No serious interruption to the passage of vessels occurred during the season.

The greater portion of the work of renewing the superstructure of the piers part of which were destroyed by fire some years ago, has been now completed, an the remainder will be placed under contract so that it may be finished during nex season.

## MONTREAL, OTTAWA AND KINGSTON.

This route extends from the Harbour of Montreal to the Port of Kingston, ssing through the Lachine Canal, the navigable sections of the Lower River Ottawa d the Ottawa Canals to the City of Ottawa, thence by the River Rideau and the ideau Canal to Kingston on Lake Ontario—a total distance of 246¼ miles.

After leaving the Lachine Canal, the works constructed to overcome the diffi- ılties of navigation are:—

The St. Anne's Lock;
Carillon Canal;
Chute à Blondeau Canal;
Grenville Canal;
Rideau Canal.

The total lockage (not including that of the Lachine Canal), is 533½ feet—356½ rise, 177 fall)—and the number of locks 59.

The following table exhibits the intermediate distance from Montreal Har- bour:—

| Sections of Navigation. | Intermediate distance. | Total distance from Montreal. |
|---|---|---|
| The Lachine Canal | 8½ | ..... |
| From Lachine to St. Anne's Lock | 15 | 23½ |
| St. Anne's Lock and Piers | ⅛ | 23⅝ |
| From St. Anne's Lock to Carillon Canal | 27 | 50⅝ |
| The Carillon Canal | 2⅛ | 52¾ |
| From Carillon Canal to Chute à Blondeau | 4 | 56¾ |
| Chute à Blondeau Canal | ⅛ | 56⅞ |
| From Chute à Blondeau Canal to Grenville Canal | 1⅛ | 58¼ |
| The Grenville Canal | 5¾ | 64 |
| From the Grenville Canal to entrance Rideau Navigation | 56 | 120 |
| Rideau Navigation, ending at Kingston | 126¼ | 246¼ |

## ST. ANNE'S LOCK.

| | |
|---|---|
| Length of canal | ⅛ mile. |
| Number of locks | 1 |
| Dimensions of locks | 190 feet by 45 feet. |
| Total rise or lockage | 3 " |
| Depth of water on sills | 6 feet at low water. 7 feet at ordinary high water. |

This work, with guide piers above and below, surmounts the St. Anne's Rapids between Ile Perrot and the head of the Island of Montreal, at the outlet of that por-

tion of the River Ottawa which forms the Lake of Two Mountains, 23½ miles from Montreal Harbour.

This lock was closed to navigation on the 20th of November, 1881, and opened on the 11th April, 1882.

No interruption to traffic occurred during the season.

The usual repairs to locksgates, ice breakers, wharves, &c., were duly made.

NEW WORKS IN PROGRESS.

These works embrace the construction of a lock, 200 feet long between the gates, 45 feet wide at bottom, with a depth of 9 feet of water on the sills; also the formation of channels of approach, 100 feet in width at the bottom, increasing to 150 feet at the upper entrance, and of such depth as to give 10 feet of water at the lowest known level of the river.

The masonry of this work is now completed, but the channels of approach are not yet fully excavated. It is, however, expected that the whole work will be open for navigation in the course of next season. The excavation of a further extent of channel above the lock is under contract and in progress.

## THE CARILLON CANAL.

| | |
|---|---|
| Length of canal..... | ¾ miles. |
| Number of locks..... ..... | 2. |
| Dimensions of locks..... | 200 feet x 45 feet. |
| Total rise or lockage..... | 26 feet. |
| Depth of water on sills..... | 9 " |
| Breadth of canal at bottom..... | 100 " |
| Breadth of canal at water surface. | 100 " |

This canal overcomes the Carillon Rapids.

From St. Anne's Lock to the foot of the Carillon Canal, there is a navigable stretch of twenty-seven miles, through the Lake of Two Mountains and the River Ottawa.

The canal was closed on the 26th of November, 1881, and re-opened on the 28th April, 1882.

Two slight interruptions occurred to traffic in the course of the season—one from a barge grounding in the Chute à Blondeau Rapid, the other from the falling in of a wing wall of Lock No. 3 of the old canal.

The repairs executed, in addition to those which may be classed as of an ordinary character, have embraced a considerable amount of work on the North River feeder and dam.

NEW WORKS.

The new works consist of a dam across the River Ottawa $\frac{3}{4}$ of a mile above the village of Carillon, also a canal of $\frac{3}{4}$ of a mile long with two locks 200 feet by 45 feet with 9 feet of water on the sills.

The dam and slide completed in November, 1881, have shown, in working, the need for changes of a minor character in the entrance to the slide, and for an extension and alteration in the position of the guide booms leading thereto.

These improvements are now in progress.

The new canal itself and the locks in connection with it have been completed and in use since the 27th of May last.

In order to reap the full advantage from the new works it will be necessary to deepen and improve the channel of the river above the dam for a distance of about three-quarters of a mile. The execution of this work is in contemplation.

## CHUTE À BLONDEAU CANAL.

| | |
|---|---|
| Length of canal | $\frac{1}{8}$ of a mile. |
| Number of locks | 1 |
| Dimensions of lock | $130\frac{5}{6}$ ft. x $32\frac{5}{6}$ ft. at upper end and $36\frac{1}{3}$ feet at lower end. |
| Total rise, or lockage | $3\frac{3}{4}$ feet. |
| Depth of water on sills | 6 " |
| Breadth of canal at water surface | 30 " |
| Breadth of canal at bottom | 30 " |

Between the Carillon and Chute à Blondeau Canal there is a navigable stretch of four miles. The canal is cut through solid rock, and has only one lock. It is only used by vessels going up the river; all down vessels run the rapids.

Closed on the 26th of November, 1881, re-opened on the 28th April, 1882.

Considerable repairs were executed on this lock during the year.

A large mass of rock obstructing the channel has been removed by blasting, but the ledge forming the crest of the rapids will have to be similarly removed before any sensible reduction and equalization of the strength of the current between Greece's Point and the dam can be effected.

## GRENVILLE CANAL.

| | | | |
|---|---|---|---|
| Length of canal | | | $5\frac{3}{4}$ miles. |
| Number of locks | | | 7 |
| Dimensions of locks—Lift Lock No. 5 | Combined | $130\frac{2}{3}$ feet | x $32\frac{1}{6}$ feet. |
| " 6 | " | $128\frac{1}{3}$ " | x $32\frac{1}{3}$ " |
| " 7 | " | $128\frac{1}{3}$ " | x $31\frac{5}{6}$ " |
| " 8 | " | 128 " | x $32\frac{1}{6}$ " |

| | |
|---|---|
| Locks Nos. 9 and 10, and Guard Lock No. 11, (new works) | 200 feet x 45 feet. |
| Total rise, or lockage | 45¾ " |
| Depth of water on sills | 6 " |
| Depth of water on sills of Locks Nos. 9, 10 and 11 | 9 " |
| Breadth of canal at bottom | 40 to 50 feet. |
| Breadth of canal at surface of water | 50 to 80 " |

From the head of the Chute à Blondeau Canal to the foot of the Grenville Canal there is a navigable stretch of 1⅜ miles.

This canal is about 56 miles below the City of Ottawa; the Long Sault Rapids being thereby avoided.

The canal was closed on the 26th of November, 1881, and re-opened on the 1st of May, 1882.

Extensive repairs have been called for to maintain the old locks on this canal.

All ordinary repairs have been executed.

### New Works.

The works for the enlargement of the canal, commenced in 1871, comprise the construction of five locks 200 feet long and 45 feet wide, with 9 feet of water on the sills; the main channel having a depth of 10 feet and a mean width at bottom, of 40 feet, varying at the surface from 50 to 80 feet, with crossing basins constructed at approximate intervals of half a mile.

The locks are now approaching completion; three are already in use, as shown above, and of the two enlarged locks which are to take the place of the present four at the outlet of the canal and immediately above it; one will be completed in time for the opening of navigation next season, and the other some time in the summer. The work of excavation for the widening of the reach between the river and the guard lock was prosecuted during last winter.

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## UPPER OTTAWA RIVER.

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### CULBUTE LOCKS AND DAMS.

| | |
|---|---|
| Number of locks | 2 |
| Dimension of locks | 200 x 45 |
| Total rise, or lockage | 18 to 20 feet |
| Depth of water on sills | 6 feet. |
| Aggregate length of dams | 625 feet. |

From the Grenville Canal to the City of Ottawa, a distance of about 56 miles, the river is navigable. Beyond the city, for a distance of 107 miles, to L'Islet or Culbute, continuous navigation is rendered impracticable by the undermentioned rapids:—The Chaudière, the Duchêne, the Chats, the Chenaux, the Portage du Fort, and the Grand Calumet.

The Culbute works, situated at L'Islet, surmount the Culbute and L'Islet Rapids on the north channel of the Ottawa.

These works comprise two locks and three continuous dams, all built of wood. The dams reduce the rapids to smooth water, enabling the river to be navigated from the head of the locks to Des Joachims, a distance of 37 miles.

The repairs on these works have been unimportant.

### New Works.

To render the river navigable below the lock, as far as Bryson, it has been necessary to remove part of three shoals and to build two submerged dams.

All the work has been completed with the exception of a small portion which will be finished during the present winter, opening up a navigable route of 80 miles, with a minimum depth of 7 feet at extreme low water, between Des Joachims to Bryson, making a total above and below Culbute of 117 miles.

## RIDEAU NAVIGATION.

The Rideau system connects the River Ottawa at the City of Ottawa with the eastern end of Lake Ontario at Kingston.

| | |
|---|---|
| Length of navigable waters | 126¼ miles. |
| Number of locks going from Ottawa to Kingston | 33 ascending.<br>14 descending. |
| Total lockage ..... 446¼ | 282¼ rise, and 164 fall. at high water. |
| Dimensions of locks | 134 by 33 feet. |
| Depth of water on sills, 5 feet; navigable depth through the several reaches | 4½ feet. |
| Breadth of canal reaches at bottom | 60 feet in earth.<br>54 feet in rock. |
| " at surface of water | 80 feet in earth. |

For table of distances of Stations between Ottawa and Kingston see Appendix 11, page 144.

The summit level of this system is at the Upper Lake Rideau, but several of the descending reaches are also supplied by waters which have been made tributary to them. The following description gives the sources of supply.

From the summit, the route towards Ottawa follows the River Rideau, and that towards Kingston follows the River Cataraqui. The whole duty of keeping up the water to its proper level is effected by the reserves, given in detail below.

They may be divided into three systems, viz:

1. The summit level, supplied by the Lake Wolf system. 2. The eastern descending level to Ottawa, supplied by the River Tay system, discharging into the Lake Rideau. 3. The south-west descending level to Kingston, supplied by the Mud Lake system, formerly known as the Devil Lake system, discharging into Lake Openacon.

Lake Openacon receives the waters of Buck Lake and Rock Lake.

All these waters on the descending level, supplemented by those of Lake Loughboro, flow into Cranberry Lake, which discharges through Round Tail outlet, forms the River Cataraqui; this river, rendered navigable by dams at various points, affords a course of navigation to Kingston.

The navigation stopped at Kingston Mills on the 30th of November, 1881, and recommenced on the 1st of May, 1882.

At Ottawa navigation stopped the 23rd of November, 1881, and recommenced on the 1st of May, 1882.

During the fall season of 1881, the water supply on the Kingston and summit levels was maintained within a few inches of the level required for navigation, but on the reach between Burritt's and Long Island the deficiency amounted to nearly a foot.

During the season of 1882, the supply has been ample.

Heavy repairs have been called for during the past fiscal year, mainly in closing leaks at the Kingston mills.

## TAY CANAL.

A survey has been carried out having in view the construction of a short branch canal to connect the town of Perth and the extensive mineral interests, now being developed, of which it is the centre, with the Rideau Canal; such connection formerly existed by means of a channel maintained by dams and locks, which have long fallen into disuse and decay, along the line of the River Tay, ending at Port Elmsley on Lake Rideau, a distance of about 10 miles. It has been decided to adopt a line of communication, starting from Beveridge's Bay on Lake Rideau, at which point a short cut, in which two locks, the only ones to be constructed, will be built, giving access from the lake to the river.

At the point of junction with the river a dam will be formed, raising the river waters sufficiently to give, with the deepening of the channel in certain places, a navigable depth up to Perth. Some of the more abrupt bends of the river will also be cut through, making the distance to be traversed about six miles.

## RICHELIEU AND LAKE CHAMPLAIN.

This system, commencing at Sorel, at the confluence of the Rivers St. Lawrence and Richelieu, 46 miles below Montreal, extends along the River Richelieu through the St. Ours' Lock to the Basin of Chambly, thence by the Chambly Canal to St. John's and the River Richelieu to Lake Champlain. The distance from Sorel to the Boundary Line is 81 miles.

At Whitehall, the southern end of Lake Champlain, the Champlain Canal is entered and connection obtained with the River Hudson, by which the City of New York is directly reached. From the Boundary Line to New York the distance is 330 miles.

The following table shows the distance between Sorel and New York :—

| Sections of Navigation. | Intermediate distance in Miles. | Total distances. |
|---|---|---|
| Sorel to St. Ours' Lock | | 14 |
| St. Ours' Lock to Chambly Canal | 32 | 46 |
| Chambly Canal | 12 | 58 |
| Chambly Canal to Boundary Line | 23 | 81 |
| Boundary Line to Champlain Canal | 111 | 192 |
| Champlain Canal to Junction with Erie Canal | 66 | 258 |
| Erie Canal from Junction to Albany | 7 | 265 |
| Albany to New York | 146 | 411 |

### ST. OURS' LOCK AND DAM.

| | |
|---|---|
| Length of canal | $\frac{1}{8}$ mile. |
| Number of locks | 1 |
| Dimensions of locks | 200 feet by 45 feet. |
| Total rise, or lockage | 5 feet. |
| Depth of water on sills | 7 feet at low water. |
| Length of Dam in Eastern Channel | 300 feet. |
| " " Western Channel | 600 feet. |

At St. Ours', fourteen miles from Sorel, the River Richelieu is divided by a small island into two channels. The St. Ours Lock is in the eastern channel.

There is a navigable depth of 7 feet between St. Ours Lock and Chambly Basin, a distance of 32 miles.

The lock was closed on the 25th November, 1881, and opened on the 13th April, 1882.

Navigation was conducted without any interruption of consequence, and all needed repairs were duly executed.

## CHAMBLY CANAL.

| | |
|---|---|
| Length of canal | 12 miles. |
| Number of locks | 9 |

Dimensions of locks—

| | | | |
|---|---|---|---|
| Guard Lock, No. 1, at St. John's | 122 feet | by | $22\frac{10}{12}$ feet. |
| Lift " " 2, | 124 " | | 23 " |
| " " " 3, 4, 5, 6 | 118 " | | $22\frac{10}{22}$ to 24 feet. |
| " " " 7, 8, 9 combined | 125 " | | $22\frac{10}{22}$ to 23 feet. |
| Total rise, or lockage | 74 " | | |
| Depth of water on sills | 7 " | | |
| Breadth of canal at bottom | 36 " | | |
| " " surface of water | 60 " | | |

Succeeding the thirty-two miles of navigable water between St. Ours' Lock and Chambly Basin—a natural reservoir formed by the expansion of the River Richelieu—is the Chambly Canal, which overcomes the rapids between Chambly and St. John's, a distance of 12 miles.

This canal was closed to navigation on the 28th November, 1881, and was re-opened on the 2nd May, 1882.

Navigation was carried on without interruption and all ordinary repairs have been executed.

### Works of Improvement.

During the year dredging operations have been carried on satisfactorily.

At the Chambly entrance for $3\frac{1}{2}$ miles up, the canal has been deepened. At St. John's the wharves have been improved, and the draught of water increased. The deepening also of the canal from Lock No. 1, downwards, is in progress.

## ST. PETER'S CANAL. CAPE BRETON.

| | |
|---|---|
| Length of canal | about 2,400 feet. |
| Breadth at water line | 55 feet. |
| Lock | One tidal lock, 4 pair of gates. |
| Dimensions | 48 by 200 feet. |
| Depth of water on sills | 18 feet at lowest water. |
| Depth through canal | 19 feet. |
| Extreme rise and fall of tide in St. Peter's Bay | 4 feet. |

This canal connects St. Peter's Bay, on the southern side of Cape Breton, Nova Scotia, with the Bras d'Or Lakes. It crosses an isthmus half-a-mile in width, and gives access from the Atlantic.

Navigation was closed on the 31st December, 1881, and re-opened on the 5th May, 1882.

The canal has been maintained in good order, and increased facilities have been afforded for its use by the provision of lights at the entrance and along its course, and of mooring buoys in St. Peter's Bay and the Bras d'Or Lakes.

## TRENT RIVER NAVIGATION.

The term "Trent River Navigation" is applied to a series of water stretches, which do not, however, form a connected system of navigation, and which, in their present condition, are efficient only for local use.

This series is composed of a chain of lakes and rivers extending from Trenton, at the mouth of the Trent, on the Bay of Quinté, on Lake Ontario, to Lake Huron.

Several years ago the utilizing of these waters for the purpose of through water communication between Lakes Huron and Ontario, was projected.

The course in contemplation was as follows:—

Through the River Trent, Rice Lake, the River Otonabee and Lakes Clear, Buckhorn, Chemong, Pigeon, Sturgeon and Cameron to the Lake Balsam, the summit water, about 166 miles from Trenton; from the Lake Balsam by a canal and the River Talbot to Lake Simcoe; thence, by the River Severn to Georgian Bay, Lake Huron, the total distance being about 235 miles.

The execution of this scheme, commenced in 1837, was subsequently deferred. By certain works, however, below specified, sections of these waters were made practicable for navigation and for the passage of timber. A branch of the main course, extending from Sturgeon Lake south, affords communication with the town of Lindsay, and, through Lake Scugog, to Port Perry, a distance of 190 miles from Trenton. Of this distance, 155 miles are navigable for vessels of light draught.

The following table gives the distance of navigable and unnavigable reaches:

| | Navigable. | Unnavigable. |
|---|---|---|
| From Trenton, Bay of Quinté, to Nine Mile Rapids.... | | 9 |
| " Nine Mile Rapids to Percy Landing..... | 19½ | |
| " Percy Landing to Heeley's Falls Dam..... | | 14¼ |
| " Heeley's Falls Dam to Peterboro'..... | 51¾ | |
| " Peterboro' to Lakefield..... ..... | | 9½ |
| " Lakefield to Burleigh..... | 12 | |
| " Burleigh Rapids..... | | 1 |
| " Burleigh Rapids to Buckhorn Rapids..... | 7 | |
| " Buckhorn Rapids..... | | 1 |
| " Buckhorn Dam to Lindsay..... | 36¼ | |
| | 126½ | 34¾ |
| " Lindsay to Port Perry at the head of Lake Scugog | 28¾ | |
| | 155¼ | 34¾ |

| | |
|---|---|
| Total distance Bay of Quinte to Port Perry ..... | 190 miles. |
| Passing to Fenelon Falls the distance from Buckhorn Dam to Fenelon is..... | 31½ " |

The following is a list of the works:—

| | Distance from Trenton in miles. |
|---|---|
| *Chisholm's Rapids.* | |
| The works here consist of a canal and lock, a dam and slide. | 15½ |
| *Percy Landing.* | |
| A retaining boom for saw logs here..... ..... | 28½ |
| *Campbellford.* | |
| Guide booms..... ..... | 34¾ |
| *Middle Falls.* | |
| The work consisted of 4 dams and 2 slides..... ..... | 37¾ |
| *Crow Bay.* | |
| A retaining boom..... ..... ..... | 38 |
| *Heeley's Fall.* | |
| A dam and slide are in operation here..... | 42¾ |
| *Crook's Rapids, Hastings.* | |
| The works consist of 1 lock, 1 dam and slide for timber.. | 34⅞ |
| *Whitlas's Rapids.* | |
| The works situated below Peterboro consist of a lock, dam and canal..... | 92⅞ |
| *Little Lake.* | |
| The works consist of 3 piers and 1 boom..... ..... | 94 |
| *Burleigh.* | |
| Timber slides. | |
| *Buckhorn Rapids.* | |
| This dam is important in keeping to a high level the water of the lakes west of it as far as Bobcaygeon, including Lakes Pigeon, Ball, Buckhorn and Chemong. The dam is effective..... | 125 |

*Bobcaygeon.*

There are two dams here with canal, lock and slide. These dams retain the waters of the reach as far as Fenelon Falls and Lindsay Lock..... $140\frac{3}{4}$

*Fenelon Falls.*

A large slide and booms..... $155\frac{3}{4}$

*Lindsay.*

The old lock, having become useless, was rebuilt by the Government of the Province of Ontario in 1879. Its dimensions are 134 x 33 feet, with 5 feet water on the sills. The navigation is, by this work, extended to Port Perry, Lake Scugog..... $161\frac{2}{3}$

The dimensions of the Dominion locks are 133 feet 6 inches x 33 feet, with 5 feet depth of water on the sills.

In 1855 portions of the above named works were transferred to a committee of gentlemen connected with the lumber trade. The committee was authorized to collect tolls on timber passing through. The works so transferred, at this date, are the slides and booms at Chisholm's Rapids, the retaining boom at Myersburgh, the guide boom at Campbellford, the dams and slide booms at Middle Falls, the retaining boom at Crow Bay and the slide at Heeley's Falls.

These works are kept in repair by the committee.

The Lindsay lock was constructed by, and is under the control of, the Province of Ontario.

Navigation ceased on the 25th November, 1881, and recommenced on the 15th March, 1882.

In addition to repairs of ordinary character, the clearance of the River Scugog from impediments to navigation has been effected.

## NEW WORKS.

Under appropriations voted last session by Parliament, works for the connection of certain available lake and river stretches have been commenced.

As the utililizing of this chain of waters, for the establishing of a line of through communication between Lake Huron and Lake Ontario, is a long considered project, which the requirements of the country may hereafter render it expedient to carry out, such points have been selected for the present works as will enable them to afford the greatest immediate advantage to local navigation, while, at the same time, they would form an integral part of the best practicable line of through communication.

Accordingly, after careful surveys and examination, it was decided to build works at the following places:—Fenelon Falls, Buckhorn Rapids, and Burleigh Falls, the completion of which will give communication between Lakefield, about 9 miles from Peterboro' and Balsam Lake, the headwaters of the system, opening up a total of about 150 miles of direct and lateral navigation.

Contracts have been given out; the necessary lands are being expropriated; and the works are in progress.

Surveys of the northern and southern portions of the country embraced in the original scheme, together with the possible sources of water supply, are being carried on.

## MURRAY CANAL.

The scheme of cutting a channel through the Isthmus of Murray to give connection westwards between the head waters of the Bay of Quinté and Lake Ontario, thereby practically extending the navigation system of the River St. Lawrence, and avoiding the circuitous and exposed route south of the Peninsula of Prince Edward has made good progress. After careful surveys, a route making Presqu'Ile Harbour the terminus on the lake was selected, and steps were taken to have the work of construction pushed forward. A contract was let in August last for the cutting of a channel without locks, 80 feet wide at the bottom and of the depth of 11 feet (determined by the bottom level of the Bay of Quinté), below the lowest known water level of Lake Ontario, its length being somewhat over 6 miles. The greater portion of the lands required has been expropriated, and the work of excavation has since been vigorously prosecuted.

## BRITISH COLUMBIA.

In compliance with a request preferred by the Provincial Government of British Columbia, that a survey should be made with a view to ascertain the feasibility and cost of a canal to connect Lake Okanagan with the waters of Lake Shuswap, an examination of the district in question has been ordered and is in progress.

Respectfully submitted.

CHARLES TUPPER,
*Minister of Railways and Canals.*

Department of Railways and Canals,
Ottawa, 1st February, 1883.

# APPENDIX No. 1

STATEMENT showing the amount Expended by the Department of Railways and Canals, Dominion of Canada, during the Fiscal Year ending 30th June, 1882.

| Name of Work. | Construction. | Repairs. | Staff and Maintenance. |
|---|---|---|---|
| CANALS. | $ cts. | $ cts. | $ cts. |
| Lachine | 252,821 33 | 17,116 46 | 41,158 90 |
| do construction of roadway to flour shed | 2,978 66 | | |
| Beauharnois | | 20,813 86 | 18,804 53 |
| Cornwall | 44,587 61 | 6,634 62 | 15,052 20 |
| Williamsburg | | 7,447 69 | 7,589 44 |
| St. Lawrence | 28,933 45 | | |
| Welland | 603,402 17 | 69,125 79 | 74,641 51 |
| do rebuilding Dunnville Bridge | | 5,733 46 | |
| do Port Maitland | | 15,187 50 | |
| Burlington Bay | | 240 62 | |
| do rebuilding pier | | 14,459 29 | |
| St. Annes | 193,158 36 | 2,3 3 99 | 2,611 30 |
| Carillon | 212,794 07 | 7,582 68 | 14,387 49 |
| Grenville | 220,290 32 | | |
| Dulbute | 29,567 15 | 162 33 | 790 00 |
| Rideau | | 13,860 28 | 26,887 89 |
| Trent | 5 836 51 | 8,115 50 | 2,011 92 |
| Murray | 7,135 63 | | |
| St Ours | | 1,902 41 | 2,002 71 |
| Chambly | 31,796 41 | 16,843 60 | 16,686 78 |
| St. Peters | 484 00 | 200 63 | 1,920 54 |
| Surveys | | | 2,243 23 |
| Arbitrations | | | 5,023 59 |
| River Tay Survey | | | 748 65 |
| St. Frances Lock | | | 2,559 41 |
| Total on Canals | 1,633,785 67 | 207,770 71 | 235,120 09 |
| RAILWAYS. | | | |
| Pacific | 3,587,166 41 | | |
| do subsidy | 2,210,000 00 | | |
| do advance on rails as per contract | 375,000 00 | | |
| Intercolonial | 585,568 79 | | 2,069,657 48 |
| Windsor Branch | | | 13,099 55 |
| Prince Edward Island | 402 03 | | 228,259 97 |
| Total on Railways | 6,758,137 23 | | 2,311,017 00 |
| Grand Total | 8,391,922 90 | 207,770 71 | 2,546,137 09 |

Total Amount Expended.....$11,145,830.70.

J. BAINE,
*Accountant.*

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, December, 1882.

# APPENDIX

STATEMENT showing the amount expended on the construction and enlarge-

*(Repairs not*

| By whom Expenditure Incurred. | Year ending 30th June. | Lachine Canal. | Beauharnois Canal. |
|---|---|---|---|
| | | $ cts. | $ cts. |
| Imperial Government | Up to June 30, 1867. | 40,000 00 | ..... |
| Provincial Government | Up to June 30, 1867. | 2,547,532 85 | 1,611,424 11 |
| Dominion Government | 1868 | 1,852 70 | 7,008 00 |
| do | 1869 | 2,000 00 | 55 00 |
| do | 1870 | ..... | 587 50 |
| do | 1871 | 12,231 40 | 187 00 |
| do | 1872 | 36,708 15 | 27 50 |
| do | 1873 | 42,982 49 | 5,280 90 |
| do | 1874 | 158,618 35 | 26 00 |
| do | 1875 | 197,420 52 | 36 00 |
| do | 1876 | 327,769 39 | ..... |
| do | 1877 | 1,439,375 73 | ..... |
| do | 1878 | 1,484,619 63 | ..... |
| do | 1879 | 958,053 30 | ..... |
| do | 1880 | 369,566 74 | ..... |
| do | 1881 | 292,165 51 | ..... |
| do | 1882 | 252,821 33 | ..... |
| Total | ..... | 8,163,718 09 | 1,624,632 01 |

No. 2.

nent of the Canals of the Dominion of Canada, up to 30th June, 1882.

*ncluded.)*

| Cornwall Canal. | St. Lawrence Canals. — Not apportioned. | Williamsburg Canals. | St. Lawrence. — Chain Vessel and Improvement of Navigation. | Surveys, St. Lawrence and Canals. | Welland Canal. |
|---|---|---|---|---|---|
| $ cts. | $ cts. | $ cts. | $ cts. | $ cts. | $ cts. |
| ..... | ..... | ..... | ..... | ..... ..... | 222,220 00 |
| 1,933,152 69 | 116,821 31 | 1,320,655 54 | ..... | ..... | 7,416,019 83 |
| 2,786 00 | ..... | ..... | ..... | ..... ..... | 12,097 84 |
| 10,692 04 | ..... | ..... | ..... | ..... | 43,486 36 |
| 17,780 05 | ..... ..... | ..... | ..... ..... | ..... | 24,173 72 |
| 7 50 | ..... ..... .... | ..... | ..... | ..... | 47,869 10 |
| 10,000 21 | ..... ..... | 1,077 00 | ..... ..... | ..... | 59,702 76 |
| 1,011 75 | ..... | ..... | ..... | 35,326 44 | 130,158 47 |
| ..... | ..... | ..... | ..... ..... | 26,541 30 | 746,420 61 |
| 1,780 00 | ..... | ..... | ..... ..... | 22,611 36 | 1,046,714 91 |
| ..... | ..... | ..... | 28,500 00 | 21,715 47 | 1,570,178 19 |
| 49,211 37 | ..... | ..... | 28,064 67 | 19,312 64 | 2,199,962 61 |
| 145,015 45 | ..... | ..... | 1,623 76 | 3,946 70 | 2,138,392 99 |
| 143,092 05 | ..... | 4,580 00 | ..... | 4,685 77 | 1,552,697 41 |
| 109,454 95 | ..... | ..... | 623 52 | 8,591 04 | 1,252,924 75 |
| 53,948 14 | ..... | ..... | 6,927 96 | ..... ..... | 1,242,943 37 |
| 44,587 61 | ..... ..... | ..... | 28,933 45 | ..... ..... | 603,402 17 |
| 2,522,519 81 | 116,821 31 | 1,326,312 54 | 94,673 36 | 142,730 72 | 20,309,365 09 |

APPENDIX

STATEMENT showing the amount expended on the construction and

(*Repairs not*

| By whom Expenditure Incurred. | Year ending 30th June. | Ste. Anne's Lock. | Carillon and Grenville Canals. |
|---|---|---|---|
| | | $ cts. | $ cts. |
| Imperial Government | Up to June 30, 1867. | ..... | (*) |
| Provincial Government | | 134,456 51 | 63,053 64 |
| Dominion Government | 1868 | ..... | 19,817 22 |
| do | 1869 | ..... | ..... |
| do | 1870 | ..... | 4,167 96 |
| do | 1871 | ..... | 23,119 37 |
| do | 1872 | 1,939 46 | 165,257 28 |
| do | 1873 | 540 11 | 136,250 48 |
| do | 1874 | 12,753 27 | 245,258 38 |
| do | 1875 | 32,627 71 | 339,864 76 |
| do | 1876 | 24,935 85 | 326,203 16 |
| do | 1877 | 30,003 08 | 245,738 04 |
| do | 1878 | 14,618 85 | 22,676 20 |
| do | 1879 | 22,113 02 | 243,141 24 |
| do | 1880 | 3,054 68 | 281,514 27 |
| do | 1881 | 69,042 76 | 336,707 53 |
| do | 1882 | 193,158 36 | 433,084 39 |
| Total | ..... | 539,243 66 | 2,885,853 92 |

* Expenditure not given.

). 2.—*Concluded.*

largement of the Canals of the Dominion of Canada,&c.—*Concluded.*

*cluded.*)

| Culbute Lock. | Rideau Canal. | Chambly Canal. | St. Peter's Canal. | Survey, Baie Verte Canal. | Total. |
|---|---|---|---|---|---|
| $ cts. | $ cts. | $ cts. | $ cts. | $ cts. | $ cts. |
| ..... | 3,911,701 47 | ..... | ..... | ..... | 4,173,921 47 |
| ..... | 153,062 60 | 643,711 76 | 88,949 39 | ..... | 16,028,840 23 |
| ..... | 7,593 67 | ..... | 21,519 72 | ..... | 72,675 15 |
| ..... | ..... | ..... | 70,719 80 | ..... | 126,953 20 |
| ..... | ..... | ..... | 46,193 57 | ..... | 92,902 80 |
| ..... | 11,732 88 | 2,872 85 | ..... | ..... | 98,020 10 |
| ..... | 4,967 59 | 1,906 40 | ..... | ..... | 281,586 26 |
| ..... | 18,070 97 | 759 00 | ..... | 4,877 83 | 375,258 44 |
| 38,388 99 | 5,793 16 | ..... | ..... | 4,018 90 | 1,237,818 96 |
| 63,659 29 | 9,310 85 | 2,415 00 | 20 97 | 443 00 | 1,716,904 37 |
| 76,842 44 | 2,163 96 | ..... | 11,125 00 | 110 75 | 2,389,544 21 |
| 56,081 87 | 214 11 | 80 00 | 63,330 18 | 22 30 | 4,131,396 60 |
| 5,933 53 | ..... | ..... | 26,511 51 | ..... | 3,843,338 62 |
| 20,694 19 | 7,703 88 | ..... | 107,337 75 | ..... | 3,064,098 61 |
| 16,688 20 | 355 05 | ..... | 80,120 54 | ..... | 2,122,893 74 |
| 4,721 62 | ..... | ..... | 69,434 76 | 520 00 | 2,076,411 65 |
| 29,567 15 | ..... | ..... | 484 00 | ..... | 1,586,038 46 |
| 312,577 28 | 4,132,670 10 | 651,745 01 | 585,747 19 | 9,992 78 | 43,418,602 87 |

# APPENDIX No. 3.

## CANADIAN PACIFIC RAILWAY.

OFFICE OF THE ENGINEER-IN-CHIEF,
OTTAWA, 26th September, 1882.

SIR,—I have the honor to submit my Report upon the progress made, up to this date, with the works of construction, the surveys, etc., in connection with the Canadian Pacific Railway.

### GENERAL REMARKS.

The Trunk line is divided into the following sections, viz:

| | Miles. |
|---|---|
| No. 1.—From Callander Station (120 miles west of Pembroke) to Prince Arthur's Landing, an estimated distance of | 650 |
| No. 2.—From Prince Arthur's Landing to the Red River (St. Boniface, opposite Winnipeg) | 432 |
| No. 3.—From the Red River to Savona's Ferry (foot of Kamloops Lake), an estimated distance of | 1,350 |
| No. 4.—From Savona's Ferry to Port Moody, a distance of | 215 |
| Approximate length of Trunk line | 2,647 |

The branch lines, constructed and under construction, are as follows:—

| | Miles. | |
|---|---|---|
| Sault Ste. Marie Branch | 118 | |
| Pembina " | 65 | |
| West Selkirk " | 20 | |
| Stonewall " | 22 | |
| Colville Landing " | 2 | |
| South-western " | 164 | |
| | | 391 |
| Total mileage (approximate) | | 3,038 |
| Of which the Government are constructing Sections Nos. 2 and 4 of the Trunk line | | 647 |
| Pembina and Colville branches | | 67 |
| | | 714 |

Leaving the following sections and branches to be constructed by the Canadian Pacific Railway Company, viz.:

| | Miles. |
|---|---|
| Sections Nos. 1 and 3, Trunk line | 2,000 |
| Sault Ste. Marie, West Selkirk, Stonewall, and South-western branches | 324 |
| | 2,324 |

In the foregoing statement of distances, I have treated the Trunk line as passing through the city of Winnipeg.

SUBSIDIZED LINE.

Canada Central Railway Extension, now Canadian Pacific, Pembroke to Callander ation, 120 miles.

GENERAL PROGRESS.

*Pembroke to Callander Station, 120 miles.*

This portion of the road, (formerly known as the Canada Central Railway Extension), is being constructed under a Government subsidy of $12,000 per mile, making a total subsidy of $1,440,000. The work of construction is drawing towards completion. The station houses and other buildings are complete; the water service also. The track is laid throughout, the bridging all erected, the culverts built; and there remains only a little ballasting, the filling of some ravines crossed by temporary trestle bridges, and the widening of a few embankments to complete the work and place the road in good running order. That portion of the road between Pembroke and Mattawan, a distance of 94 miles, is now under traffic, and that between Mattawan and Callander, 26 miles, is used for the transport of material and supplies for the construction of the line from Callander westward.

*Callander Station to Prince Arthur's Landing.*

The location of this section not having been determined in its entirety, the actual mileage has not yet been ascertained, and may therefore for the present be assumed to be 650 miles, according to the original estimate. Early in the present season a route *via* Algoma Mills and Sault Ste. Marie was under consideration; but I am informed that the Company have abandoned this route, and now propose to follow the Algoma Mills location from Callander to Wahnapitae River, 82 miles, thence in a direct line for about 336 miles, forming a junction with the Algoma Mills route near the Pic River, and from this point along the Algoma Mills route to Prince Arthur's Landing, about 194 miles. Provided a feasible line can be obtained in the direction indicated, of which the Company express great confidence, it is estimated that the ground between Callander and Prince Arthur's Landing will be covered in 612 miles. From Callander to near North Bay, a distance of 20 miles, the grading and bridging are finished and the track laid, and from the latter point to one near the Sturgeon River, about 23 miles, the grading and bridging are in a forward state and are being prosecuted vigorously. From near the Sturgeon River to the Wahnapitae River, 39 miles, the line is located, and from the latter river to the Pic, some 336 miles, the preliminary surveys are in progress. From the Pic River to Red Rock, about 128 miles, a trial location is being made, and from the latter point to Prince Arthur's Landing, about 66 miles, the works of construction are in progress. The Company are fully confident that they will be in a position to exhibit a favorable profile in this route early in the winter season.

*Prince Arthur's Landing to Red River (opposite Winnipeg.)*

This section is 432 miles in length and was divided, for construction purposes into the following sub-sections, viz.:—

| | | Miles. |
|---|---|---|
| Prince Arthur's Landing and Kaministiquia Railway.... | | 6 |
| Grading Contract, | No. 13 | 32½ |
| " " | No. 25 | 80 |
| " " | No. 41A | 113½ |
| " " | No. 42B | 66½ |
| " " | No. 15 | 36½ |
| " " | No. 14 | 76 |
| " " | No. 5*a* | 21 |
| | | 432 |

The Prince Arthur's Landing and Kaministiquia Railway was graded and bridged by a company, and subsequently purchased by the Government for $14,000. It has since been laid with steel rails, and spur tracks have been run down to two wharves at Prince Arthur's Landing. Though not ballasted, the road is in fair condition for the passing of trains. Last year, I reported the work on Contracts 13 and 25, complete. Owing, however, to the lapse of time since the sleepers were cut and the bridges built, the former will need considerable renewals, and some of the smaller structures among the latter should be replaced; and owing to the swampy nature of much of the country through which the line passes, a great subsidence has taken place in many of the embankments, and this must be made up. Many of the cuttings, also, will require to be cleared of slurry in order to afford free drainage. It will be necessary to provide funds for these purposes, a considerable sum having already been expended on this service.

The works on Contract 41A are drawing near to completion, and had not an unexpected settlement taken place, during the summer, in a heavy embankment, they would by this time have been still further advanced. The track was laid throughout on the 25th August, 1881, the bridging is practically completed, all but about 18 miles of the track has received a lift of ballast, and the earthwork, if prosecuted with vigor, can be completed in about five weeks. Many of the embankments crossing the long stretches of swampy country have settled, and the subsidence will have to be made up and the track reset. Construction and supply trains have been passing over this contract during the present season.

During the past twelve months, satisfactory progress has been made with the works on Contract 42B. The rock work, which was very heavy, was finished early in the summer, and by the 19th June the track was laid throughout, crossing a large number of deep and wide ravines by means of temporary trestle bridges, from which the material forming the embankments will be dumped by the construction trains. It is estimated that, at the close of the present season, from 400,000 to 450,000 cubic yards of earth filling will remain to be done, of which the execution will occupy the greater portion of the next working season probably up to the 1st October. The ballasting has been carried on with great vigor, the track having received a lift throughout. A few culverts remain to be built, but the masons are now at work upon them, and it is believed they will soon be finished.

In my Report of last year, I mentioned the fact, that Contract 15 was completed. It was transferred to the Canadian Pacific Railway Company on the 1st December last, and from that date they have had it under traffic. I passed over it a few days ago, and am pleased to say that it is in first class running condition, the embankments and other works having stood well.

Upon that portion of the road known as Contract 14, the ballasting is not yet completed. With a view to the rapid construction of the road west of Winnipeg, it was deemed very important that the Canadian Pacific Railway Company should have full control of this section, which was to become the chief source of their supply of timber and sleepers; and it was, therefore, transferred to them, with the understanding that they should complete the ballasting, which they have been unable to do, owing to the road being constantly occupied by trains carrying construction materials. The road is in fair running order, and the traffic has been uninterrupted during the season.

The work on Contract 5*a*, Selkirk to St. Boniface (opposite Winnipeg), has been completed, and the road under traffic for several years.

Between Prince Arthur's Landing and St. Boniface the water service is in working order, except at two or three stations on Contract 42, where some work is still required to place it in satisfactory condition. The Haggas' water system has been introduced between Prince Arthur's Landing and Cormack, and the elevated system from that point to the Red River, opposite Winnipeg.

Between Prince Arthur's Landing and Rat Portage, a number of station houses and platforms have yet to be built.

On the section between Red River and Savona's Ferry at the foot of Lake Kamloops, the Company have obtained the approval of the location from the Red River to Moose Jaw Creek, a distance of 406 miles; and upon this location the road has been built and is in good running order, 372 miles (from Red River to Regina) being under traffic. From Moose Jaw Creek to Fort Calgary, a distance of about 454 miles, the Company, I am informed, have made a location with a view to passing through the Kicking Horse Pass. This location has not yet been approved, but the Company apparently have great faith in the existence of a feasible way through the mountains in the direction indicated, having constructed a line on this location from Moose Jaw Creek to a point near Old Wives' Lake, about 455 miles west of Red River, completed the work of grading for about 60 miles in advance of that point. The grading is also in a forward state for a further distance of about 70 miles. The Company also inform me that they intend to complete the road to the crossing of the South Saskatchewan River, about 660 miles west of Red River, before the close of the present season. I presume they have assumed this responsibility, not desiring to check their unprecedentedly rapid construction, and feeling assured by information already obtained from their engineers that they will succeed in finding a favorable passage *viâ* the Kicking Horse Pass. Several parties of engineers, under Major Rogers, have been busily engaged during the summer in surveying through this Pass; and the Company inform me that they expect reports from him which will, they believe, definitely settle the route. They also state that they intend to push the work of construction to the foot of the Rocky Mountains next season, and thus open up a base of supplies to enable them to carry the line through the mountain region vigorously to completion in the following years.

*Savona's Ferry (foot of Lake Kamloops) to Port Moody.*

This section, 215 miles in length, has been divided for convenience of construction into the following sub-sections, viz:

| | Miles. |
|---|---|
| Contract 63, Savona's Ferry to Junction Flat | 42¾ |
| " 62, Junction Flat to Lytton | 28½ |
| " 61, Lytton to Boston Bar | 29 |
| " 60, Boston Bar to Emory's Bar | 29 |
| " 92, Emory's Bar to Port Moody | 85½ |

The works upon these contracts are probably heavier than those upon any equal number of consecutive miles upon the whole of the Canadian Pacific Railway. Mr. D. O. Mills is the contractor for Nos. 63, 62, 61 and 60, and Mr. Andrew Onderdonk for No. 92.

On Contract No. 63, no work has been done since my Report of last year.

Upon Contract No. 62 the work of grading is far advanced, but as I understand that it is intended to transport the timber for the bridges by train, which cannot be done until the track is laid on Contract No. 61, little or no bridge work can be done until the material can be carried by train to points near the sites of the structures.

The work on Contract No. 61 consists largely of rock excavation, the vigorous prosecution of which only commenced in the early part of the present season. A very considerable amount of work of various kinds has been done, and I fully expect that the track will be laid over this contract next season.

On Contract No. 60 the work is almost completed, and is the heaviest in its nature of any yet undertaken on the Canadian Pacific Railway. This contract is 29 miles in length, and the track is laid and partially ballasted over 22 miles. Upon the remaining 7 miles the work is so far advanced that the track will probably cover it within a few months.

Upon the opening of the working season, the contractor for No. 92 commenced his preparations for the prosecution of the works, which were entered upon in April. But it is only now that they are well under way, and appearances indicate that

during the next few months a large amount of work will be done. Up to the end of August, work to the value of about $270,000 had been executed. A considerable number of the embankments having to be made up by train, temporary trestling is resorted to, and the rails are delivered along the line of the works as they advance, with a view to their being laid at an early day.

The foregoing remarks give a general idea of the condition of the works, etc. throughout the trunk line. I shall now offer a few observations on the progress made and being made with the branch lines.

The Canadian Pacific Railway Company have located the Sault Ste. Marie branch from Wahnapitae River to Algoma Mills, and have carried on the work of grading and bridging during the summer upon the first 60 miles east of the latter point. They have also graded about 100 miles of the south-western branch (Winnipeg to Smuggler's Point, etc.,) on which the track is laid southerly from Winnipeg for about 37 miles. I am informed the Company have also located the West Selkirk branch (20 miles, Winnipeg to Selkirk) along the west bank of the Red River, and that grading is in progress upon it.

The Stonewall Branch, 22 miles in length, was built by the Government, the cost being charged to the Company, by whom it is now owned and operated.

The Pembina Branch (Emerson to St. Boniface, 65 miles), and the Colville Landing Branch, (Selkirk to Colville Landing, 2 miles), were built by the Government and were transferred to the Company on the 1st May, 1881.

### Contracts not Already Refered to.

*Iron Bridges, Contracts* 71 *and* 73, *Toronto Bridge Company.*

The two 200 feet iron bridges spanning the Winnipeg River, have been completed; also the three on the Pembina Branch.

*Contract No.* 77, *Barbed-wire Fencing, Messrs. Stubbs & Co.*

The work under this contract has been in progress during the past season. The contract having been transferred to the Company with the Pembina Branch and the work west of Winnipeg, it merely remained for the Government to see that the contractors were settled with under the terms of the contract.

*Contract No.* 78, *Barbed-wire Fencing, Messrs. Skead & Haycock.*

The contractors delivered a quantity of wire and posts, after which the contract was cancelled, and the materials paid for.

*Contract No.* 93, *Iron Bridge, Andrew Onderdonk.*

This contract is for the erection of a cantilever iron bridge over the Fraser River, near Lytton, having one span of 300 feet, and two of 100 feet, and was entered into on the 22nd February last. The bridge is in course of manufacture in England, and Mr. Tomlinson, who is engaged in inspecting the work at the shops, reports satisfactory progress, and thinks that the bridge will be ready for shipment in January next.

*Steel Rails.*

8,800 tons of steel rails, with fastenings, have been purchased, to be delivered at Port Moody, B.C., early next spring. These, with the 4,600 tons which the Company were allowed to loan, and which are about to be replaced, make up the full complement required for those sections of the road under construction by the Government.

I have much pleasure in stating that the Canadian Pacific Railway Company are making unprecedentedly rapid progress with the construction of the road west of

Winnipeg, and that they are building a good and substantial work. On Contracts 41 and 42 the work has also been executed substantially and well.

*Telegraph Lines.*

The section between Thunder Bay and Red River has been maintained and worked by the contractors, Messrs. Oliver, Davidson & Co., under the terms of their contract, and communication has been fairly kept up during the past year.

The section between Red River and Edmonton, including the line from Selkirk to Winnipeg, has been maintained and operated by the Department, under the superintendence of Mr. Latouche Tupper, who also exercises a supervision over the contractors between Thunder Bay and Red River.

Mr. Tupper reports the cost of operation, including maintenance for the year ending the 30th June, - - - - - - - - - $14,477 78
Revenue - - - - - - - - - 3,222 78

Loss - - - - - - $11,255 00

The line between Cache Creek and Kamloops is operated in connection with the telegraph system of British Columbia. On the 5th July, 1882, the Canadian Pacific Telegraph was transferred to the Public Works Department.

*Rolling Stock.*

The rolling stock owned by the Government, and employed in connection with the work of construction on the Canadian Pacific Railway, consists of:—

13 locomotives,
3 first-class passenger cars,
1 baggage and postal car,
300 flat cars,
1 steam shovel car,
2 boarding cars,

The rolling stock owned by the Canadian Pacific Railway Company is:—

87 locomotives,
1 official car,
3 sleeping cars,
17 first-class passenger cars,
5 second-class passenger cars,
3 baggage and postal cars,
2 baggage cars,
1 combined passenger and baggage car,
219 box cars,
1956 platform cars,
30 cabooses,
62 wing ploughs,
6 flangers,
7 snow ploughs.

I have the honor to be, Sir,
Your obedient servant,

COLLINGWOOD SCHREIBER,
*Engineer-in-Chief.*

A. P. Bradley, Esq.,
Secretary Department Railways and Canals.

# APPENDIX No. 4.

## CANADIAN GOVERNMENT RAILWAYS IN OPERATION.

OFFICE OF THE CHIEF ENGINEER AND GENERAL MANAGER,
OTTAWA, 20th October, 1882.

| | Miles. |
|---|---|
| Intercolonial Railway - - - - - - | 840 |
| Prince Edward Island Railway - - - - - | 199 |
| Windsor Branch Railway - - - - - | 32 |
| | 1,071 |

SIR,—I have the honor to submit, herewith, the Reports and accounts in connection with the working of the railways in operation under my charge, for the year ended the 30th June, 1882, comprising the Intercolonial, Prince Edward Island, and Windsor Branch Railways, and having an aggregate length of 1,071 miles.

In my last Annual Report I stated the mileage of railway operated by the Government at 1,300 miles. That mileage, however, included the 229 miles of the Canadian Pacific Railway, transferred to the Company on the 1st May, 1881, leaving the mileage now under Government management, as stated above, 1,071 miles.

I am pleased to be able to state that during the year just closed, the operations of these roads show, in the aggregate, results equally favorable with those of the preceding year; the excess of working expenses over earnings in 1881-82 being $73,433.61, and, in 1880-81, $74,488.22.

The following is a summary of the operations of each of the lines under consideration:

| Name of Railway. | Length in Miles. | — | Amount. | Profit. | Loss. |
|---|---|---|---|---|---|
| | | | $ cts. | $ cts. | $ cts. |
| Intercolonial Railway. ..... | 840 | Earnings ..... | 2,079,262 66 | | |
| | | Expenses ..... | 2,069,657 48 | 9,605 18 | |
| Prince Edward Island Railway | 199 | Earnings ..... | 137,267 54 | | |
| | | Expenses ..... | 228,259 97 | ..... | 90,992 43 |
| Windsor Branch Railway..... | 32 | ⅓ Earnings... ..... | 21,053 19 | | |
| | | Expenses ..... | 13,099 55 | 7,953 64 | |
| Totals..... ..... | 1,071 | ..... | ..... | 17,558 82 | 90,992 43 |
| | | | | | 17,558 82 |
| | | Nett Loss..... | ..... | ..... | 73,433 61 |

### INTERCOLONIAL RAILWAY OPERATIONS.

On perusal of the Reports of the Chief Superintendent, Mechanical Superintendent, and Engineer, herewith submitted, it will be seen that the traffic has been

conducted with a good measure of success, and that the road and rolling stock have been well maintained; and as information on these points is very fully given in the reports and accompanying accounts, it is not in my opinion necessary to add any lengthy remarks. I desire, however, to draw the attention of the Honorable Minister to the marked increase in the volume of traffic, attributable, in my opinion, to the continued prosperity of the country's trade, and to the exertions on the part of our officers to secure business; and it may be hoped that with the improved facilities for conducting traffic at Halifax, St. John, and other points, that the rate of increase in the future will be even greater.

It will be observed that the increase of earnings is not in proportion to that of the volume of traffic. This is no doubt owing to the fact that the growth of the traffic has been, to a great extent, in that portion of it which is connected with the manufactories and collieries of the country, upon which very low rates obtain; the Honorable Minister having made arrangements, in this respect, with a view to the promotion of home industries.

| | |
|---|---|
| The earnings for the past three years were:— | |
| 1879-80 | $1,506,298 48 |
| 1880-81 | 1,760,393 92 |
| 1881-82 | 2,079,262 66 |
| The tons of freight carried were:— | |
| 1879-80 | 561,924 |
| 1880-81 | 725,577 |
| 1881-82 | 838,956 |
| The number of passengers carried was:— | |
| 1879-80 | 581,483 |
| 1880-81 | 631,245 |
| 1881-82 | 779,994 |

The great prosperity throughout the country has caused such a demand for labor, and for all articles entering into the working of railways, that the cost of operating is somewhat enhanced. I am, nevertheless, glad to be able to state that the earnings (as shown in the table given above) exceed the working expenses by several thousand dollars.

## Capital Account.

### *Halifax Extension.*

The wharf and warehouse at the ocean terminus, at the south end of Her Majesty's dockyard, greatly facilitated the movement of ocean borne traffic last winter, and it is believed that the additional accommodation at this point, now in course of construction, will be sufficiently advanced, by the date of the close of navigation on the St. Lawrence, to receive the business offering, and the facilities for conducting traffic, though not complete, will be very good. The water along each side, and at the end of the main wharf, will be of sufficient depth to float the largest ship owned by any of the ocean lines of steamers. The wharf is large and the warehouse roomy. A separate wharf has been built, having an elevated track which will enable the steamers to receive the coal from the cars directly into the bunkers, a facility not offered, so far as I am aware, by any port on this continent, and which will effect a great saving of time and expense to the ships.

Efforts have been repeatedly made in past years to induce a grain traffic *vid* Halifax, but without success; and it was stated by dealers and others competent to judge, that, in the absence of an elevator, it was impossible to ship grain. To meet this requirement an elevator with a capacity of 150,000 bushels has been erected, and will be available for use this winter. Siding storage for cars has been provided at this point, but until the yard room is extended by filling up the shallow water, it

will be rather cramped, and this will necessitate more shunting between Richmond and the terminus than would otherwise have to be done.

The appropriation available will not be sufficient to complete the work undertaken, and it will be necessary to provide a further sum for expenditure next year.

The military authorities have called upon the Department to carry out a condition made when the right of way was granted for the Halifax (North Street) extension through the military grounds to the north of Her Majesty's dockyard, viz.: to cover the track for a distance of 800 feet in the vicinity of the powder magazine. In 1878 a plan of the proposed covering of the track was submitted to the military authorities for approval, and a sum of $20,000 was placed in the Estimates towards its construction; but so far as I am able to learn, no reply or approval was received, and, in consequence, the work has not been proceeded with, and it will be necessary to provide funds if it is to be undertaken next season.

The work of building a main line along the west side of the Richmond Yard, with the extension of a double track to North Street, is progressing rapidly, and will, it is believed, be completed and ready for use this winter. This will afford great freedom to shunting operations in the Richmond Yard and between that point and the ocean terminus at the south end of Her Majesty's dockyard.

*Increased accommodation at St. John.*

In my report of last year, I mentioned that the existing cramped accommodation was quite inadequate to the business, and I recommended that, as a beginning, provision be made in 1882-83 for the erection of a freight house, flour shed, and bonded warehouse, and also for an extension of the yard. An appropriation was made for these objects, and the works are now in progress. These, together with the projected passenger station, and its attendant accommodation, will render the facilities for the conduct of business much more satisfactory to the public. The passenger station will be so located and designed as to permit of the approach of trains at both ends. This, when the bridge over the St. John River is built, will afford the means for direct communication with the United States *via* St. John, without change of cars. If the erection of the passenger station is to be proceeded with next season, funds should be provided.

*St. Charles Branch.*

During the last session of Parliament an appropriation was made for the construction of a branch line from the St. Charles station on the Intercolonial Railway *via* Indian Cove to Point Lévis, thence traversing the water front of the town of Lévis and forming a connection with the Grand Trunk Railway at Point Lévis station.

Tenders for this work were invited early in the season. The contract for the grading etc. of the line from St. Charles Station to Point Lévis, a distance of about 13 miles, was awarded to Mr. M. J. Hogan, and that for the wooden breast-work along the water front of the town of Lévis, to Mr. Lachance. The grading is completed and the track laid for some eight miles westward from St. Charles station, and the grading and bridging are in progress on the balance of the contract. It is hoped that the track will be laid into Lévis this winter. Mr. Lachance is making good progress with his work which is fast drawing towards completion. Owing to the late period of the season it is probable that the buildings will not be commenced before next spring.

It is proposed, when this work is completed, to give the Quebec Central Railway Company running powers over that portion of the branch from their junction to Point Lévis, with certain privileges as to the use of the passenger station, upon fair and equitable terms to be agreed upon hereafter. I would suggest that it is very important that a deep-water wharf be constructed in connection with this work.

*Train Ferry.*

Provision was made during the last session of Parliament for a contribution towards the establishment of a ferry for the conveyance of cars across the river between Point Lévis and Quebec; the arrangement being that the Quebec Government, or the owners of the North Shore Railway, should undertake the provision of suitable boats and other necessary appliances, and the establishment of the ferry, submitting their plans to the Federal Government for approval. Early in the season they were called upon to do so, but up to the present time they have not been heard from.

*Rolling Stock.*

Owing to the great increase in the traffic, it will be nescessary to provide at once séven shunting engines, ten road engines, twenty second-class, ten first-class, three baggage, 200 gondola, and 200 platform cars, also ten conductors vans; and if the business continues to increase, as of late, further additions to the rolling stock will be required from time to time, if the traffic is to be conducted with promptness and despatch.

PRINCE EDWARD ISLAND RAILWAY.

The reports of the Superintendent and Mechanical Superintendent hereto attached, will be found to deal very fully with the operations of the year. The nett results are not so favorable as might be desired. The earnings indeed show a slight increase over those of the preceding year, but it is, in my opinion, impossible to work up the traffic to any material extent, there being a certain volume and no more. The working expenses were very considerably increased by reason of many new works of improvement, such as additional station buildings, the increase of the number of sleepers per mile by 440 over half the road, the extension of siding accommodation, the purchase of additional land for snow fence protection, the establishment of water service at five additional stations. These works were charged to maintenance, and together with the unprecedentedly heavy cost of the removal of snow from the track, produced a much larger deficit than would otherwise have obtained. I may safely state that the road and rolling stock were never in a condition of greater efficiency, and it is intended to improve the track still further, during the current year, by the introduction of a further quantity of steel rails now afloat. Owing to the ravages of the *teredo navalis*, it is probable that the cost of wharf repairs will be heavy during the current season.

The stock of engines, 18 in number, furnished at the cost of capital, will be immediately increased by the delivery of two engines built by the Canadian Locomotive and Engine Company of Kingston, who are also building two others at the cost of maintenance, to be delivered at the same time. These, with the engine about to be built for the purpose of keeping up the stock, will make the locomotive power ample for the service for many years to come.

The passenger car stock has been fitted with Millar couplers and buffers, and is in good condition. It is sufficient for the ordinary traffic, but in the pic-nic season it falls short of the demand upon it; and it would add greatly to the safety of pic-nic trains if about six additional second class cars were provided. The management has been so far fortunate in escaping injury to passengers travelling on the crowded platform cars fitted up for excursion trains.

The stock of 100 platform and 150 box cars is being increased at the cost of capital, by the addition of 25 cars of each kind, which will make a full stock of 125 platform and 175 box cars. These are now in course of construction in the workshops of the railway at Charlottetown, and will probably be ready for this autumn's work. The eight ton freight cars show signs of decay, and a considerable number of them will have to be rebuilt during the current year. The expense of the renewal of this stock is unusually heavy, as it is being replaced by 10 ton cars with heavier

wheels and axles. The snow ploughs received very severe usage last winter and many of them will have to be replaced.

In November, 1881, Mr. Stronach was transferred from the position of Mechanical Superintendent of this road to that of Inspector of Rolling Stock on the Canadian Pacific Railway, Mr. Joseph Unsworth being appointed to the vacancy thus created.

### Windsor Branch Railway.

The Chief Superintendent and Engineer of the Intercolonial Railway, in their reports herewith submitted, give a full statement of the working and condition of this line.

It will be observed that the one-third earnings reserved by the Government has been more than sufficient to meet the cost of maintenance, but as it may be necessary to renew the track to a certain extent with steel rails during the current year, it is probable that so favorable an exhibit may not appear in the next report. The road has been maintained in good running order, and has also been worked without accident.

I have the honor to be, Sir,
Your obedient servant,

COLLINGWOOD SCHREIBER,
*Chief Engineer and General Manager of Government Railways.*

A. P. Bradley, Esq., Secretary,
Department of Railways and Canals.

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## INTERCOLONIAL RAILWAY.

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Office of the Chief Superintendent,
Moncton, N.B., 4th October, 1882.

Collingwood Schreiber, Esq.,
Chief Engineer and General Manager of Government Railways,
Ottawa.

Sir,—I have the honor to submit the following Report upon the working of the Intercolonial Railway, for the fiscal year which ended 30th June, 1882.

I enclose the reports of the Engineer and the Mechanical Superintendent, and also the following statements prepared by the Chief Accountant and Treasurer.

No. 1. Capital Account.
" 2. Revenue Account.
" 3. Locomotive Power (Abstract No. 1).
" 4. Car Expenses ( " " 2).
" 5. Maintenance of Way and Works ( " " 3).
" 6. Station Expenses ( " " 4).
" 7. General Charges ( " " 5).
" 8. General Stores Account.
" 9. General Balance.
" 10. Comparative Statement of Averages.

The length of railway worked was the same as last year, 840 miles.

### Capital Account.

The total cost of the road and equipment was, on the 30th June, 1881, $38,974,452.44.

The additions during the year were as follows:—

| | |
|---|---|
| For the Halifax Extension | $173,109 84 |
| " The Deep-water Terminus, St. John | 19,712 16 |
| " Repairs and Improvements of the Rivière du Loup Line | 14,980 47 |
| " Rolling Stock for the Rivière du Loup Line | 153,853 84 |
| " The Completion of the Intercolonial Railway | 18,246 98 |
| " Additional Rolling Stock | 205,005 20 |
| " St. Charles Branch | 660 30 |
| | $585,568 79 |
| Making the total cost to the 30th June, 1882 | $39,560,021 23 |

The property at Halifax, purchased for the new deep-water terminus, came into possession of the railway in the month of July, and the work of preparing it for the winter's business was at once commenced.

To connect it with the Intercolonial system a track was laid on the eastern side of Water Street, from the freight yard near North Street as far as the wharf formerly known as the Granite Wharf. This was done with the consent of the City Council, and under the authority of an Act of the Provincial Parliament.

The necessary sidings were laid, a wharf 800 feet long and 80 feet broad was constructed, and on it a large warehouse 46 feet wide and 400 feet long. The whole was ready by the month of November, and the premises were used last winter for the passenger and freight traffic by the British mail steamers.

At St. John, at the deep-water terminus, a large warehouse was built on the wharf; there were also erected an elevated trestle and large storehouse for coal to be used by the mining companies for retailing purposes.

Some earth filling was also done, and new sidings were laid to accommodate the lumber and other traffic.

The ballasting and other repairs of the Rivière du Loup Line were completed, and the balance of the rolling stock for that part of the railway was all received and paid for.

The amount for completion of the Intercolonial Railway consists of payments on account of claims in connection with the construction of the line between Rivière du Loup and Truro, and of the legal and other expenses of settling the same.

The expenditure for additional rolling-stock was rendered necessary by the great increase of traffic, as was fully explained in my report of last year.

## Revenue Account.

It is very gratifying to me to have to report that this account again shows an excess of earnings over expenditure, the nett earnings being considerably more than last year.

| | |
|---|---|
| The gross earnings of the year were | $2,079,262 66 |
| The working expenses were | 2,069,657 48 |
| Nett earnings | $ 9,605 18 |

The gross earnings shew a large increase over last year. The following statement shows the increase of gross earnings for two years:—

| | Gross Earnings. | Increase. |
|---|---|---|
| 1879-80 | $1,506,298 48 | |
| 1880-81 | 1,760,393 92 | $254,095 44 |
| 1881-82 | 2,079,262 66 | 318,868 74 |
| Increase in two years | | $572,964 18 |

Both the through traffic and the local traffic in passengers and in freight have increased, but the greatest increase is in freight traffic. The local freight traffic shows a steady increase from year to year.

The earnings per mile of railway compare as follows with those of the last three years:—

| | Earnings per mile of railway. | Increase. |
|---|---|---|
| 1878-79 | $1,812 46 | |
| 1879-80 | 1,825 81 | $ 13 35 |
| 1880-81 | 2,095 70 | 269 89 |
| 1881-82 | 2,475 31 | 379 61 |

The following is a comparative statement of a few of the chief articles of freight shewing the quantity carried in this and in the previous year:—

| | 1880-81 | 1881-82 | Increase. | Decrease. |
|---|---|---|---|---|
| Barrels flour | 672,310 | 692,095 | 19,785 | —— |
| Bushels grain | 565,678 | 560,253 | —— | 5,425 |
| Lumber in feet | 72,841,388 | 78,356,418 | 5,515,030 | —— |
| Head of live stock | 61,574 | 73,479 | 11,905 | —— |
| Other goods in tons | 544,354 | 647,561 | 103,207 | —— |

The following shows the quantity of each of the above articles carried each year for three years:—

| | 1879-80 | 1880-81 | 1881-82 |
|---|---|---|---|
| Barrels flour | 525,248 | 672,310 | 692,095 |
| Bushels grain | 324,021 | 565,678 | 560,253 |
| Lumber in feet | 55,462,654 | 72,841,388 | 78,356,418 |
| Head of live stock | 70,990 | 61,574 | 73,479 |
| Other goods in tons | 422,256 | 544,354 | 647,561 |

The traffic in lumber has increased, and it is now frequently carried longer distances by railway than in former years.

The quantity of coal shipped at Halifax increased from 28, 326 tons, in 1880-81, to 36,836 tons in 1881-82. A large wharf for storing and shipping coal is now being constructed and will be completed this fall. This wharf is especially designed for supplying steamers with bunker coal, and the facilities provided should cause a large increase in this business.

Large quantities of coal were carried to the Upper Provinces, amounting during the year to 44,400 tons, an increase of 23,400 tons over last year.

The traffic in connection with the works of the Steel Company at Londonderry continued to increase. The traffic in raw and in refined sugar has continued to increase.

A number of manufacturing establishments have been erected near the railway, the principal being glass works and steel works at New Glasgow and cotton factories at Windsor, Halifax, Moncton and St. John. All these works are connected with the railway by sidings.

In last year's report, reference was made to the steamer "Rimouski" as being unsuitable for the mail tender service. It was sold in May last, and the service for this season is being performed by contract.

The British mail steamers landed the mails, and also passengers and freight, weekly, at Halifax last winter. Other ocean steamers called there more or less regularly, and landed freight for the Lower Provinces and for the west. The competition between the different lines of railway, for the ocean traffic, is very keen; it is, therefore, gratifying to know that the amount of traffic furnished to the Intercolonial by ocean steamers last winter was considerably larger than in previous winters.

Efforts are being made to secure a larger share of this business. The wharf and warehouse built at Halifax last year are now being more than doubled in size; another wharf is being built for coaling ocean steamers, and a grain elevator of one

hundred and fifty thousand bushels capacity is being erected. These works, with, perhaps, the exception of the elevator, will be finished and ready for use by the month of December next.

In order to provide for the increasing traffic at St. John, extensive improvements are now being made. The property between the railway boundary line and Pond Street has been purchased, the old buildings on it have been removed, and three large warehouses of brick are being built for the storage of bonded goods, of flour, and of miscellaneous freight.

A large coal store is being built on the deep-water wharf, and in connection with it tracks will be provided at a sufficient elevation to allow of the shipment of coal direct from cars in vessels of the largest size.

All these works will be completed and ready for use this autumn; they will greatly facilitate business, and should have the effect of still further increasing our traffic.

There has been a large increase in the passenger traffic, the number carried during the year 1881-82 being ..... 779,994
While in 1880-81 it was ..... 631,245

An increase of ..... 148,749

A great part of this increase is due to summer tourist travel from Western Canada and the United States. This travel increases from year to year, and must continue to increase, as the beautiful and picturesque scenery along the Intercolonial becomes more widely known.

The number of immigrants landed at Halifax last winter, was much larger than in previous seasons.

## Expenditure.

The working expenses for the year were $2,069,657.48.
The work performed by locomotives and cars was much greater than last year.
The engine mileage

| | Miles. |
|---|---|
| In 1881-82 was ..... | 3,900,850 |
| In 1880-81 ..... | 3,453,078 |
| An increase of ..... | 447,772 |

The train mileage compared with last year was:—

| | Miles. |
|---|---|
| 1881-82 ..... | 3,195,566 |
| 1880-81 ..... | 2,813,723 |
| Increase ..... | 381,843 |

The car mileage compared with last year was:—

| | Miles. |
|---|---|
| 1881-82 ..... | 37,489,376 |
| 1880-81 ..... | 32,201,157 |
| Increase ..... | 5,288,219 |

The gross tonnage carried

| | Tons. |
|---|---|
| In 1881-82 ..... | 838,956 |
| In 1880-81 ..... | 725,577 |
| An increase of ..... | 113,379 |

The working expenses per mile, run by engines, were:

| | Cents. |
|---|---|
| In 1881-82 | 53·05 |
| In 1880-81 | 50·96 |
| Increase | 2·09 |

And per mile, run by trains, they were:

| | Cents. |
|---|---|
| In 1881-82 | 64·77 |
| In 1880-81 | 62·54 |
| Increase | 2·23 |

The necessary repairs were made to the permanent way and structures, and all the works in connection with the railway were maintained in a thorough state of efficiency.

During the working season 57 miles of the main tracks were ballasted, 342,859 new sleepers were put in, and new steels rails were laid where necessary.

The rails now on the track weigh 57 lbs. to the yard, but in consequence of the greatly increased tonnage passing over the road, the increased load carried by cars, and the heavier engines used, it has been determined to lay in future, as these wear out, rails weighing 67 lbs. to the yard.

Ten miles of new sidings were laid at different parts of the line to accommodate the increased traffic.

The necessary repairs were made to fences on all parts of the line, and more than eighty miles of new fences were built, the whole costing $33,583.49.

Great care has been exercised in the inspection and repair of bridges, both as regards masonry and superstructure, and they are all in good order.

The buildings on all parts of the line received necessary repairs. A combined passenger and freight station was erected at Derby, and also a similar building at Eel River; a dwelling house for the station master was built at Causapscal, and also at Jacquet River and at Painsec. At Aulac and at Sackville extensive repairs and improvements were made to the station houses.

Improvements were also made at several points in the water supply for locomotives.

The cost of all these repairs and improvements, and of others which I have not specified, forms part of the working expenses.

The rolling stock of the railway consists of 124 locomotives, 3,830 cars of all kinds, and 55 snow ploughs and flangers.

These are all in good condition, having received from time to time the necessary repairs.

Four of the smaller locomotives were sold and four new and more powerful ones were purchased to supply their place, the difference in price between those sold and the new ones purchased being charged to working expenses.

146 cars were condemned and replaced by new ones at the cost of working expenses.

The increase of traffic referred to elsewhere in this report, makes it necessary that more rolling stock should be procured. Additional passenger cars and baggage cars are required, and also more platform and coal cars.

## Stores.

The stores account compares as follows with the previous year.

The value of stores purchased was:—

| | |
|---|---|
| In 1881-82 | $692,400 12 |
| In 1880-81 | 630,277 98 |
| Increase | 62,122 14 |

The stock of stores on hand compares as follows with the previous year:—

| | 1880-81. | 1881-82. |
|---|---|---|
| Ordinary stores, including fuel..... | $226,272 43 | $265,031 13 |
| Iron and steel rails..... | 67,030 13 | 42 106 54 |
| Old materials for sale... ... ..... | 20,398 50 | 78,013 08 |
| Totals..... | $313,701 06 | $385,150 75 |

To promote the efficiency of the service, it was considered desirable, in consequence of the great competition and of the increased traffic, to make certain changes in the staff.

The department of the General Freight and Passenger Agent was divided. Mr. Taylor being relieved of the passenger business by the appointment of Mr. Busby, as General Passenger and Ticket Agent, Mr. Taylor retaining the freight business with the title of General Freight Agent.

The portion of the line of which Mr. Busby was Superintendent, was divided into two districts, Mr. J. E. Price being promoted to the position of Superintendent of the district from Moncton to St. Flavie, and Mr. A. R. McDonald being promoted to the position of Superintendent of the district from Quebec to St. Flavie. These changes were made on 1st November, 1881.

I regret that Mr. Foot, the Treasurer, has, on account of health, found it necessary to sever his connection with the railway. During last winter he had a rather severe illness, on account of which he obtained leave of absence for a time, but, as at its expiry, his health was not re-established, he was, at his own request, placed upon the retired list, and Mr. Thomas Williams, Accountant of the Prince Edward Island Railway, was appointed Chief Accountant and Treasurer in his stead. Mr. Foot entered the service of the Nova Scotia Railway in June, 1855. He was Accountant of that Railway in the year 1861, and retained that made position until the Government Railways in Nova Scotia and New Brunswick were amalgamated in 18.2, forming the Intercolonial Railway, when he was appointed Accountant of the Intercolonial. His title was changed to that of Treasurer, on the 23rd December, 1881.

The length of his service was thus about twenty-seven years, and it gives me great pleasure to testify that he performed the responsible duties devolving upon him in the most faithful, painstaking and efficient manner.

The cost of clearing snow and ice from the track, last winter, was more than in any former year, and amounted to over $38,000, exclusive of the cost of repairing snow-ploughs and flangers, which was $14,600, making the total expenditure for clearing the track for the season $5 ,600.

Snow ploughs were run during the winter 32,600 miles, and notwithstanding the heavy snow fall last winter, the trains were only interrupted on one or two occasions, and then but for a few hours.

It gives me pleasure to be able to state, that in general the several officers and employés have performed their duties in a satisfactory and efficient manner, and it must be gratifying to you to know that the operations of the year have been so successful.

I have the honor to be, Sir,
Your obedient servant,

DAVID POTTINGER,
*Chief Superintendent.*

ENGINEER'S OFFICE,
MONCTON, N.B., 1st August, 1882.

SIR,—I have the honor to submit my Report of the working of the Engineering Department for the year ending 30th June, 1882.

## TRACK.

The mileage of the main line and branches is the same as previously reported (840 miles); one mile of the old iron rails on the Shediac Branch and 1¼ miles on the Pictou Branch, have been renewed with partially worn steel rails from the main line.

The steel rails on the main line on the Eastern Division have now been down about 10 years and many of them are considerably worn, especially on the sharp curves around Bedford Basin. It is proposed to renew about 10 miles of them this year with a rail weighing 67 lbs. to the lineal yard, with the double angle fish plates.

The old steel taken up is not by any means worn out, and will yet last for years in sidings and branches.

## SLEEPERS.

During the year 342,859 sleepers have been put in track as against 75,901 last year. Where the sleepers are being renewed now, they are placed 2 feet apart from centres, instead of 2½ feet as laid originally.

This is very necessary on account of the greatly increased weight of the locomotives the past few years. The weight on each of the driving wheels of the last 4-wheeled coupled locomotives is 7 tons. This is 2¼ tons more than on the driving wheels of the heaviest engine in use four years ago.

## BALLASTING.

The ballasting of the Rivière du Loup Branch referred to in my Report of last year has been completed, and 57 miles of the old part of the line, on the eastern, western and northern divisions, have been re-ballasted.

Five ballast trains are now at work on different divisions with a large force of men.

## SIDINGS.

Additional siding accommodation has been provided to the extent of 54,877 feet, or about 10 miles. Another mile at Moncton and about the same at Halifax would be required this season, to meet the largely increased traffic.

## FENCING AND SNOW SHEDS.

During the year, 19,400 feet of new snow fencing has been erected, and a large quantity has been repaired throughout the line.

In cleared parts of the line the barbed wire on cedar posts has been adopted as the standard fence. It has been in use for the past three years, and in only two cases have animals been injured by coming in contact with the wire. 60 miles were erected during the year and a large quantity is in course of erection now.

In wooded sections of the line 23 miles of new pole fencing have been erected.

Several snow sheds that have been taken down, will be rebuilt before winter.

## TURNTABLES.

One 30 feet iron turntable was put in on the deep-water wharf at St. John, and extensive repairs were made to the old wooden tables at Point du Chêne and Pictou. These latter are the only wooden tables now left on the line.

## Wharves, &c.

Last year it was decided to extend the line from North Street into the city to the roperty known as West's Wharf, and provide terminal facilities for ocean steamers t that place. Eight hundred and sixty feet of water frontage was procured from the dmiralty, the city and from private parties for this purpose.

A wharf 800 feet long and 80 feet wide, and a warehouse 400 feet long and 46 eet wide were erected before the close of the working season last year.

During the current year the wharf has been widened from 80 to 132 feet and the varehouse from 46 to 117 feet and lengthened 100 feet.

A bunker coal wharf 800 feet long and 32 feet wide is in course of erection parallel to and 57 feet from the large shipping wharf.

On either side of the dock, elevated coal trestles are being erected, from which coal may be shipped direct from the cars to the bunkers whilst the steamers are discharging or taking in cargo.

On the coal bunker wharf the trestle is to be housed over and storage capacity will thus be provided for about 3,000 tons of coal.

A grain elevator of 150,000 bushels capacity is in course of erection, and is being vigorously pushed forward to completion. It is located on the east side and close to Water street. The grain will be elevated and conveyed on a belt running in a gallery on trestle-work, about 30 feet above the level of the wharf, so that grain, coal and goods may be delivered simultaneously to ocean steamers.

Extensive repairs were made to the wharves at Richmond, Pictou, Point du Chêne and Newcastle. At the latter place an additional crib was built and a heavy derrick erected for hoisting grindstones.

## Buildings and Platforms.

New platforms have been erected at Graham's Siding, Brookfield, Onslow, Londonderry, Wentworth, Greenville, Salt Springs, on the main line on the Eastern Division, also at Valley, Battery Hill, Stellarton and New Glasgow on the Pictou Branch.

An addition was made to the tank house at Greenville, to admit of a second tub being put in.

An addition was made to the station at Salt Springs.

New cattle guards were put in at Maccan, Salt Springs, Thompson, Greenville, Westchester and Wentworth. The roofs of Pictou Landing engine-house and station were renewed.

The station at West River was re-shingled; at Painsec an addition was made to the station to provide dwelling apartments for the agent.

Extensive repairs were made to the stations at Aulac and Sackville. The apartment of the station formerly used as a freight shed was converted into an office and ladies waiting-room.

At Moncton new offices were built in freight shed and platform at east end extended 100 feet.

The building formerly used as a cattle shed was required by the Stores Department for lumber, and a new cattle shed 250 feet long by 48 feet wide was erected. A new iron store was also provided for the Stores Department, and a coal shed for the storage of hard coal.

The platforms were renewed at Point du Chene, Dorchester Road, Moncton, Petitcodiac, Anagance and Brookville. A large covered cattle pen was erected at St. John. It is provided with troughs, and is supplied with water from the city pipes.

A large warehouse 313 feet by 32½ feet, a coal shed 300 feet by 30 feet, and additional sidings have been provided at the deep-water terminus, St John.

A shed of 1,000 tons capacity is in course of erection on the breakwater wharf for coal bunker purposes.

The yard at St. John is being thoroughly re-arranged.

The whole of the land lying to the south of and between the station grounds and Pond Street has been purchased, and the following buildings are in course of erection :—

Brick Freight Shed 600 feet by 50 and 45 feet.
" Flour Shed 300 feet by 30 feet.
" Bonded Warehouse 300 feet by 40 feet.

A brick sewer 4 feet by 2 feet 4 inches, with necessary branches, has been laid throughout the whole length of the yard (about 1,200 feet).

At Coal Branch the interior of station, badly damaged by fire, was repaired.

At Weldford the freight house was moved across the track, thoroughly overhauled and refitted. A baggage room was provided in the station and a new platform built at the north end.

At Newcastle some considerable changes and improvements were made in the agent's office. A stone ash pit 100 feet long was built for the Mechanical Department. The floors in tank-house and boiler-room were renewed. A roof 110 feet long by 28 feet span was built to shelter the track from snow between the two coal sheds.

At Derby the flag station was removed to Dickey's platform, near Jacquet River, and a new combined passenger and freight station erected in its place.

A loading platform 60 feet long and 20 feet wide was also erected at this place.

At Red Pine a loading platform 160 feet long and 20 feet wide was provided for the accommodation of lumber, shipped from there in large quantities; at Bathurst, a loading platform 200 feet long by 15 feet wide was provided.

At Eel River a new combined passenger and freight station was erected.

At Jacquet River an addition was made to the station, to provide dwelling apartments for the agent.

At Campbellton the old coal shed was taken down, and a new one 300 feet long by 30 feet wide erected in its stead. A new floor was laid in the round-house, and new doors provided to admit of a track being carried through the round-house to the car shop.

Necessary repairs have been made to nearly all stations and platforms between Moncton and Campbellton.

At Causapscal, the station was overhauled thoroughly, and new dwelling apartments provided for the agent.

At Amqui a new house was erected for the section foreman in place of one destroyed by fire.

At Ste. Flavie two iron smoke stacks of engine house were renewed. The stringers and floors of round-house were renewed. The dwelling apartment of locomotive foreman and agent also received extensive repairs.

At Trois Pistoles the station restaurant and tank house were painted.

At Rivière du Loup two new tank tubs and trestles were built in round house.

Necessary repairs and alterations were made to the stations at St. Alexandre, Ste. Hélène, St. Paschal, Ste. Anne's, and St. Philippe de Neri.

Cattle yards were built at St. Alexandre and St. Phillippe de Neri, Ste. Hélène and St. François.

New platforms were erected at Trois Saumons and Elgin Road.

## Iron Bridges.

In seasonable weather a gang of painters have been steadily engaged in scraping and painting iron bridges on different divisions of the road.

A gang of rivetters were also employed on the bridges between Moncton and Ste. Flavie about three months during the year. Also a gang on northern division No. 3 about the same time.

The overhead lateral bracing of the Sackville bridge being too low, it was taken out and replaced with a new system which gives the headway required by law. The

ame change was made in the 100-feet span (Howe truss) over the Missequash, near Amherst.

The cost of carrying out this work was about $2,000.

Two iron spans of fifteen feet each, built of rails, were put in south of Painsec.

The floors of the following bridges have been renewed during the year: Jones's Mill, Weldford, Perris, Barnaby River, Mill Creek, Petit Rocher, Moffat's, Gilmour's, Cairn's, Clarke's and Metis.

The masonry for the renewal of Otty's overhead bridge is built, ready to receive the iron work. This is the eighth and last overhead wooden bridge that has been replaced with iron between Moncton and St. John since 1879.

MASONRY.

Three gangs of masons have been engaged during the working season on different divisions, overhauling and pointing masonry where required.

WATER SUPPLIES.

A good gravitation water supply has been provided at Spring Hill, and two pumpmen are thus dispensed with.

A steam pump was put in at Westcock.

A new water crane was put in at the round house, St. John.

I have the honor to be, Sir,
Your obedient servant,

P. S. ARCHIBALD,
*Engineer.*

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## INTERCOLONIAL RAILWAY.

MECHANICAL SUPERINTENDENT'S OFFICE,
MONCTON, N.B., 27th September, 1882.

DEAR SIR,—I beg to submit, for your information, the following statements showing the operations of the Mechanical Department for the year ending June 30th, 1882.

A.—Statement showing the number of locomotives and the various classes of cars.

B.—Statement showing the locomotive and car mileage, and the average number of passenger and freight cars hauled per mile run by engines.

C.—Abstract of locomotive returns.

D.—Statement of the cost of locomotive power for each month during the year.

E.—General statement of the expenses of the Mechanical Department.

During the year 4 new engines were purchased and charged to working expenses, 66 hopper cars were condemned and taken off the register, and 80 box and platform cars to replace an equal number condemned, and 22 gondolas, to replace the 66 hoppers, were rebuilt at the cost of working expenses.

Four of the oldest engines which had been replaced by new at the cost of working expenses were this year sold.

Three engines, 3 first class cars, 3 second class cars, 243 box freight, 250 gondola, 43 platform cars, 6 cattle cars, 100 hoppers and 6 vans were received on the road this year on account of Capital and Rivière du Loup Branch.

The rolling stock is in good condition.

I am, Sir,
Your obedient servant,

H. A. WHITNEY,
*Mechanical Superintendent.*

D. POTTINGER, Esq.,
Chief Superintendent Intercolonial Railway,

# A.—INTERCOLONIAL RAILWAY.

STATEMENT showing the number of Locomotives and the various classes of Cars on the 1st July; 1881, and on the 30th June, 1882.

| Particulars. | Locomotives. | The Various Classes of Cars. | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | First Class Passenger. | Second Class Passenger. | Postal and Smoking. | Baggage and Express. | Vans. | Box Freight. | Cattle. | Platform—15 Tons. | Hoppers — 5 Tons. | Gondola—20 Tons. | Total. | Snow Ploughs. | Wing Ploughs. | Flangers. | Total. |
| On hand, 1st July, 1881, serviceable | 121 | 48 | 38 | 15 | 20 | 39 | 1,152 | 66 | 1,115 | 636 | 76 | 3,205 | 28 | 9 | 18 | 55 |
| do do condemned | ..... | ..... | ..... | ..... | ..... | ..... | 12 | ..... | 3 | ..... | ..... | 15 | ..... | ..... | ..... | ..... |
| Total stock, 1st July, 1881 | 121 | 48 | 38 | 15 | 20 | 39 | 1,164 | 66 | 1,118 | 636 | 76 | 3,220 | 28 | 9 | 18 | 55 |
| Purchased and charged to working expenses | 4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| do do Capital Account | 3 | 3 | 3 | ..... | ..... | ..... | 243 | ..... | 43 | 100 | 250 | 642 | ..... | ..... | ..... | ..... |
| Built at Moncton works, charged to Capital Account | ..... | ..... | ..... | ..... | ..... | 6 | ..... | 6 | ..... | ..... | ..... | 12 | ..... | ..... | ..... | ..... |
| Sold—replaced by new | *4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Condemned—replaced by Gondola cars | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | *66 | 22 | 22 | ..... | ..... | ..... | ..... |
| | | | | | | | | | | | | *66 | | | | |
| Total stock | 124 | 51 | 41 | 15 | 20 | 45 | 1,407 | 72 | 1,161 | 670 | 348 | 3,830 | 28 | 9 | 18 | 55 |
| Condemned on hand, 1st July, 1881 | ..... | ..... | .. .. | ..... | ..... | ..... | 12 | ..... | 3 | ..... | ..... | 15 | ..... | ..... | ..... | ..... |
| Condemned during the year | ..... | ..... | ..... | ..... | .... | 1 | 9 | 2 | 53 | †81 | ..... | 146 | ..... | ..... | ..... | ..... |
| | ..... | ..... | ..... | ..... | ..... | 1 | 21 | 2 | 56 | †81 | ..... | 161 | ..... | ..... | ..... | ..... |
| LESS—Rebuilt during the year | ..... | ..... | ..... | ..... | ..... | ..... | 7 | 2 | 56 | †81 | ..... | 146 | ..... | ..... | ..... | ..... |
| | ..... | ..... | ..... | ..... | ..... | 1 | 14 | ..... | ..... | ..... | ..... | 15 | ..... | ..... | ..... | ..... |
| ADD—Serviceable and repairing | ..... | 51 | 41 | 15 | 20 | 44 | 1,393 | 72 | 1,161 | 670 | 348 | 3,815 | ..... | ..... | ..... | ..... |
| Total stock, 30th June, 1882 | 124 | 51 | 41 | 15 | 20 | 45 | 1,407 | 72 | 1,161 | 670 | 348 | 3,830 | 28 | 9 | 18 | 55 |

* "Deduct." †Replaced by 22 Gondola cars.

## B.—INTERCOLONIAL RAILWAY.

### STATEMENT of Locomotive and Car Mileage for Year ending 30th June, 1882.

| Months. | Locomotive Mileage. | | Car Mileage. | | | | | | | Average. | | Snow Ploughs. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Passenger. | Freight. | 1st Class. | 2nd Class. | Express, Postal and Baggage. | Box and Stock. | Platform and 8-wheel Coal. | Hoppers. | Total. | Passenger. | Freight. | |
| 1881—July ..... | 69,962 | 139,702 | 220,918 | 130,597 | 130,624 | 1,414,263 | 403,869 | 115,998 | 2,446,269 | 6·88 | 14·06 | ..... |
| August. ... | 69,611 | 144,621 | 216,503 | 128,848 | 130,493 | 1,423,045 | 388,356 | 149,866 | 2,436,747 | 6·82 | 13·58 | ..... |
| September | 67,120 | 155,983 | 225,307 | 120,804 | 126,303 | 1,673,578 | 374,098 | 166,976 | 2,687,066 | 6·88 | 14·20 | ..... |
| October.... | 66,649 | 174,949 | 185,077 | 121,085 | 126,717 | 1,843,539 | 470,667 | 147,754 | 2,894,839 | 6·49 | 14·07 | ..... |
| November | 67,082 | 183,295 | 177,978 | 125,517 | 125,967 | 1,790,384 | 716,056 | 122,640 | 3,058,542 | 6·39 | 14·29 | 972 |
| December. | 68,717 | 211,960 | 178,336 | 128,701 | 137,664 | 1,899,242 | 774,089 | 130,752 | 3,248,784 | 6·47 | 13·23 | 691 |
| 1882—January.. | 66,421 | 218,947 | 170,443 | 115,379 | 122,035 | 1,933,419 | 778,523 | 185,619 | 3,305,418 | 6·13 | 13·23 | 9,554 |
| February.. | 59,115 | 176,444 | 139,192 | 95,164 | 115,780 | 1,632,089 | 572,031 | 107,070 | 2,661,326 | 5·93 | 13·09 | 12,836 |
| March ..... | 68,053 | 255,515 | 170,468 | 126,809 | 131,220 | 2,431,050 | 945,585 | 190,419 | 3,995,551 | 6·30 | 13·96 | 7,152 |
| April..... | 70,741 | 249,778 | 217,523 | 133 171 | 125,486 | 2,475,938 | 1,013,129 | 137,571 | 4,102,818 | 6·71 | 14·52 | 991 |
| May.. ..... | 73,201 | 225,002 | 203,947 | 136,419 | 120,616 | 1,923,153 | 1,122,331 | 168,804 | 3,675,270 | 6·29 | 14·29 | 418 |
| June ..... | 69,126 | 185,526 | 199,658 | 114,228 | 120,582 | 1,649,407 | 794,748 | 98,123 | 2,976,746 | 6·28 | 13·70 | ..... |
| Total ... | 815,798 | 2,321,722 | 2,305,350 | 1,476,358 | 1,513,487 | 22,119,107 | 8,353,482 | 1,721,592 | 37,489,376 | 6·49 | 13·71 | 32,614 |

## C.—INTERCOLONIAL RAILWAY.

### Abstract of Locomotive Returns for Year ending 30th June, 1882.

| Months. | Hours in Steam. | Locomotive Mileage. | Consumption. | | | | Average Consumption per 100 Miles. | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Tons of Coal. | Pints of Oil. | Lbs. of Tallow. | Lbs. of Waste. | Miles to hour in Steam. | Lbs. of Coal. | Pints of Oil. | Lbs. of Tallow. | Lbs. of Waste. |
| 1881—July | 24,983 | 265,276 | 5,910 | 14,322 | 8,362 | 4,267 | 10·61 | 49·90 | 5·40 | 3·15 | 1·61 |
| August | 24,750 | 266,853 | 5,861 | 13,887 | 8,199 | 4,464 | 10·77 | 49·19 | 5·20 | 3·11 | 1·67 |
| September | 25,639 | 276,772 | 6,382 | 13,711 | 8,215 | 4,210 | 10·70 | 51·65 | 4·95 | 2·96 | 1·52 |
| October | 28,092 | 299,729 | 7,438 | 14,755 | 7,076 | 4,653 | 10·67 | 55·59 | 4·92 | 2·36 | 1 55 |
| November | 28,928 | 308,605 | 7,751 | 13,810 | 8,305 | 4,486 | 10·66 | 56·26 | 4·47 | 2·69 | 1·45 |
| December | 31,486 | 314,537 | 8,566 | 15,352 | 9,330 | 4,773 | 10·94 | 55·69 | 4·46 | 2·71 | 1·39 |
| 1882—January | 34,558 | 357,106 | 9,768 | 17,108 | 9,447 | 4,807 | 10·33 | 61 27 | 4·79 | 2·64 | 1·35 |
| February | 31,694 | 305,647 | 8,520 | 16,569 | 8,350 | 3,155 | 9·64 | 61·43 | 5·42 | 2·73 | 1·03 |
| March | 40,072 | 399,537 | 10,807 | 21,167 | 11,717 | 5,443 | 9·97 | 60·59 | 5·30 | 2·93 | 1·36 |
| April | 38,218 | 393,247 | 10,135 | 18,810 | 12,141 | 5,012 | 10·29 | 57·73 | 4·78 | 3·09 | 1·27 |
| May | 35,987 | 367,854 | 8,901 | 19,027 | 11,463 | 5,298 | 10·22 | 54·20 | 5·17 | 3·01 | 1·44 |
| June | 30,426 | 315,687 | 6,942 | 16,245 | 9,552 | 4,679 | 10·37 | 49·26 | 5·15 | 3·03 | 1·48 |
| Total | 374,833 | 3,900,850 | 96,981 | 194,763 | 112,157 | 55,247 | 10·41 | 55·69 | 4·99 | 2·87 | 1·42 |

STATEMENT of the cost of Locomotive Power for each month, from 1st July, 1881, to 30th June, 1882.

| Months. | Miles run by Engines. | Drivers' and Firemen's Wages. | Fuel. | Oil, Tallow and Waste. | Repairs. | Water. | Miscellaneous, Engineer houses, Mechanical Staff. | Total. | Average cost per 100 Miles. | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Wages. | Fuel. | Oil, Tallow and Waste. | Repairs. | Water. | Miscellaneous. | Total. |
| | | $ cts. | $ cts. | $ cts. | $ cts. | $ cts. | $ cts. | $ cts. | $ cts | $ cts. | Cts. | $ cts | $ cts. | $ cts. | $ cts. |
| 1881—July | 265,276 | 11,012 55 | 14,020 30 | 2,299 23 | 18,148 37 | 782 21 | 2,355 52 | 48,605 18 | 4 15 | 5 28 | 87 | 6 84 | 0 29 | 0 89 | 18 32 |
| August | 266,853 | 11,867 66 | 14,422 48 | 2,273 21 | 16,635 54 | 2,747 88 | 3,400 49 | 51,347 26 | 4 44 | 5 40 | 85 | 6 23 | 1 02 | 1 30 | 19 24 |
| September | 276,772 | 12,125 92 | 16,267 32 | 2,600 66 | 19,179 81 | 2,742 49 | 3,059 35 | 55,705 55 | 4 38 | 5 87 | 94 | 6 93 | 0 89 | 1 11 | 20 12 |
| October | 299,729 | 11,544 77 | 17,698 00 | 2,531 36 | 17,196 72 | 1,581 13 | 3,088 01 | 53,639 99 | 3 85 | 5 90 | 84 | 5 74 | 0 53 | 1 03 | 17 89 |
| November | 308,605 | 12,280 14 | 19,553 70 | 2,704 08 | 19,066 72 | 2,172 14 | 3,626 54 | 59,403 32 | 3 98 | 6 34 | 87 | 6 18 | 0 70 | 1 18 | 19 25 |
| December | 344,537 | 13,568 90 | 22,083 23 | 2,990 20 | 19,951 83 | 2,826 85 | 4,722 88 | 66,143 89 | 3 93 | 6 41 | 87 | 5 79 | 0 82 | 1 37 | 19 19 |
| 1882—January | 357,106 | 11,525 93 | 18,940 81 | 2,680 40 | 9,473 85 | 1,849 53 | 3,812 21 | 48,282 73 | 3 23 | 5 30 | 75 | 2 66 | 0 51 | 1 07 | 13 52 |
| February | 305,647 | 12,507 78 | 22,937 45 | 2,856 09 | 8,204 24 | 2,237 33 | 2,999 19 | 51,742 08 | 4 09 | 7 50 | 93 | 2 68 | 0 74 | 0 98 | 16 92 |
| March | 399,537 | 13,771 94 | 27,751 83 | 3,568 42 | 19,753 70 | 2,727 94 | 4,213 25 | 71,787 08 | 3 45 | 6 94 | 89 | 4 95 | 0 68 | 1 06 | 17 97 |
| April | 393,247 | 13,954 58 | 27,638 51 | 3,656 06 | 16,449 35 | 2,215 49 | 4,074 79 | 67,988 78 | 3 54 | 7 00 | 93 | 4 18 | 0 59 | 1 04 | 17 28 |
| May | 367,854 | 12,908 93 | 22,645 86 | 3,469 57 | 16,050 49 | 1,558 54 | 3,220 35 | 59,853 74 | 3 50 | 6 15 | 94 | 4 37 | 0 43 | 0 88 | 16 27 |
| June | 315,687 | 11,630 47 | 17,721 60 | 2,936 25 | 12,179 09 | 1,384 66 | 3,839 74 | 49,691 81 | 3 68 | 5 61 | 93 | 3 86 | 0 45 | 1 22 | 15 75 |
| Total | 3,900,850 | 148,699 57 | 241,681 09 | 34,565 53 | 192,289 71 | 24,556 20 | 42,412 32 | 684,191 41 | 3 84 | 6 19 | 88 | 4 93 | 0 63 | 1 07 | 17 54 |

## E.—INTERCOLONIAL RAILWAY.

### General Statement of the Expenses of the Mechanical Department, for the Year ending 30th June, 1882.

| | | |
|---|---|---|
| The miles run by trains were | | 3,195,566 |
| do engines were | | 3,900,850 |
| do cars were | | 37,489,376 |
| do snow ploughs were | | 32,614 |
| The cost of locomotive power | | $684,191 41 |
| The cost of car repairs: | | |
| Repairs to passenger cars | $ 45,527 06 | |
| do postal, express and baggage cars | 18,435 27 | |
| do freight cars and vans | 179,061 92 | |
| Oil and waste for packing | 21,378 52 | |
| Miscellaneous | 2,493 52 | |
| | | $266,896 29 |
| The cost of locomotive power per 100 miles run by trains was | | 21·41 |
| do do do engines | | 17·54 |
| do do do cars | | 18·1 |
| The cost of repairs to cars per 100 miles by train | | 7·60 |
| do do engines | | 6·23 |
| do do cars | | 0·64 |
| he cost of oil and waste for packing per 100 miles by train | | 0·66 |
| do do do engines | | 0·54 |
| do do do cars | | 0·05 |
| The cost of repairs to passenger cars per 100 miles run by them | | 1·20 |
| do postal, express and baggage do | | 1·21 |
| do freight cars and vans do | | 0·55 |

H. A. WHITNEY,
*Mechanical Superintendent.*

# No. 1.—INTERCOLONIAL RAILWAY.

## Capital Account, 30th June, 1882.

Dr. Cr.

| 1881. | | $ cts. | $ cts. | $ cts. | 1881. | | $ cts. |
|---|---|---|---|---|---|---|---|
| June 30.... | To Cost of Road and Equipment..... | ..... | ..... | 38,974,452 44 | June 30..... | By Dominion of Canada. | 38,974,452 44 |
| 1882. | | | | | | | |
| June 30.... | To Outlay on Halifax Extension ..... | 173,109 84 | | | | | |
| | do Deep-Water Terminus, St. John.... | 19,712 16 | | | | | |
| | | | 192,822 00 | | | | |
| | do Rivière-du-Loup Branch..... | ..... | 167,252 45 | | | | |
| | Additional Rolling Stock..... | ..... | 295,005 20 | | | | |
| | Expenditure on completion of Intercolonial Railway between Rivière-du-Loup and Truro, works, permanent way, buildings, right of way, &c..... | ..... | 4,343 80 | | | | |
| | Salaries and expenses, F. Shanly and Staff... | 9,635 85 | | | | | |
| | Legal expenses..... | 2,829 08 | | | | | |
| | | | 12,464 93 | | | | |
| | Rent of buildings, St. Octave..... | ..... | 132 00 | | | | |
| | Services of C. D. Fosbery..... | ..... | 250 00 | | | | |
| | Land damages, Rimouski Branch..... | ..... | 156 25 | | | | |
| | Rivière-du-Loup Station-house..... | ..... | 1,581 86 | | | | |
| | Land damages, Onslow..... | ..... | 900 00 | | 1882. | | |
| | St. Charles Branch ..... | ..... | 660 30 | | | | |
| | | | | 585,568 79 | June 30.... | By Dominion of Canada. | 585,568 79 |
| | | | | 39,560,021 23 | | | 39,560,021 23 |

THOS. WILLIAMS,
*Chief Accountant and Treasurer.*

Moncton, N.B., 30th June, 1882.

## No. 2.—INTERCOLONIAL RAILWAY.

DR. REVENUE ACCOUNT, Year ending 30th June, 1882. CR.

| Previous Year. | Expenditure. | | Year ending 30th June, 1882. | Previous Year. | Earnings. | Year ending 30th June, 1882. |
|---|---|---|---|---|---|---|
| $ cts. | | | $ cts. | $ cts. | | $ cts. |
| 586,998 84 | Locomotive power | Abstract No. 1..... | 684,191 41 | 545,114 48 | Passenger traffic..... | 651,296 94 |
| 411,391 76 | Car expenses | do 2..... | 469,331 23 | 1,113,872 21 | Freight do ..... | 1,303,495 00 |
| 380,312 89 | Maintenance way and works | do 3..... | 476,134 17 | 101,407 23 | Mails and sundries..... | 124,470 72 |
| 241,194 44 | Station expenses | do 4..... | 270,355 70 | | | |
| 122,708 59 | General charges | do 5..... | 162,134 29 | | | |
| 17,244 75 | Car mileage..... | | 7,510 68 | | | |
| 1,759,851 27 | | | 2,069,657 48 | | | |
| 542 65 | Balance..... | | 9,605 18 | | | |
| 1,760,393 92 | | | 2,079,262 66 | 1,760,393 92 | | 2,079,262 66 |

THOS. WILLIAMS,
*Chief Accountant and Treasurer.*

MONCTON, N.B., 30th June, 1882.

## No. 3.—INTERCOLONIAL RAILWAY.

### Locomotive Power.—(Abstract No. 1.)

| Previous Year. | | Year ending 30th June, 1882. |
|---|---|---|
| $ cts. | | $ cts. |
| 5,814 00 | Mechanical Superintendent's salary, Clerks Office and Travelling expenses | 6,401 77 |
| 137,417 89 | Wages, Drivers, Firemen and Cleaners | 148,699 57 |
| 185,168 19 | Fuel | 241,681 09 |
| 31,211 15 | Oil, Tallow, Waste and Small Stores | 34,565 53 |
| 167,290 27 | Repairs to Engines, Tenders and Engine Tools | 192,289 71 |
| 24,492 16 | Water, including Pump and Tank repairs | 24,563 19 |
| 35,605 18 | Miscellaneous | 35,990 55 |
| 586,998 84 | | 684,191 41 |

THOS. WILLIAMS,
*Chief Accountant and Treasurer.*

Moncton, N.B., 30th June, 1882.

## No. 4.—INTERCOLONIAL RAILWY.

### Car Expenses.—(Abstract No. 2.)

| Previous Year. | | Year ending 30th June, 1882. |
|---|---|---|
| $ cts. | | $ cts. |
| 56,983 46 | Repairs to passenger cars | 45,527 06 |
| 16,003 50 | do postal, express and baggage cars | 18,435 27 |
| 146,842 74 | do freight cars and vans | 179,061 92 |
| 128,969 23 | Wages of Conductors, Train Baggage Masters and Brakesmen | 142,202 34 |
| 15,422 49 | Oil and waste for packing | 21,378 52 |
| 35,179 84 | Small stores and fuel | 47,313 70 |
| 11,990 80 | Miscellaneous | 15,412 42 |
| 411,391 76 | | 469,331 23 |

THOS. WILLIAMS,
*Chief Accountant and Treasurer.*

Moncton, N.B., 30th June, 1882.

## No. 5.—INTERCOLONIAL RAILWAY.

### Maintenance of Way and Works—(Abstract No. 3.)

| Previous Year. | | Year ending 30th June, 1882. |
|---|---|---|
| $ cts. | | $ cts. |
| 7,089 38 | Engineer's salary, Clerks, Office and Travelling expenses | 7,788 82 |
| 248,528 51 | Wages in repairing roadway, fences and semaphores, including new sidings laid in | 278,009 42 |
| 9,280 09 | Rails and Fastenings, including new Sidings laid in | 16,692 38 |
| 9,731 13 | Sleepers | 44,729 08 |
| 18,087 40 | Timber, Lumber, etc., for repairs to Bridges, Cattle-guards, Crossings, Snow sheds, Fences, etc. | 21,114 77 |
| 4,696 89 | Repairs to Wharves | 3,679 21 |
| 31,015 82 | Repairs to Buildings and Platforms, including extension of and additions to same | 48,148 95 |
| 17,319 15 | Repairs to Snow Ploughs, Flangers and Tools | 14,601 69 |
| 32,244 24 | Clearing Ice and Snow | 38,047 34 |
| 2,320 28 | Miscellaneous | 3,312 51 |
| 380,312 89 | | 476,134 17 |

THOS. WILLIAMS,
*Chief Accountant and Treasurer.*

Moncton, N.B., 30th June, 1882.

## No. 6—INTERCOLONIAL RAILWAY.

### Station Expenses—(Abstract No. 4.)

| Previous Year. | | Year ending 30th June, 1882. |
|---|---|---|
| $ cts. | | $ cts. |
| 184,049 40 | Salaries and wages of Station Masters, Agents, Clerks, Telegraph Operators, Station Baggage Masters, Yard Masters, Switchmen, Watchmen and Laborers | 209 309 73 |
| 57,145 04 | Fuel, Oil, Light, Stationery, Tickets and other incidental expenses | 61,045 97 |
| ..... | Miscellaneous | ..... |
| 241,194 44 | | 270,355 70 |

THOS. WILLIAMS,
*Chief Accountant and Treasurer.*

Moncton, N.B., 30th June, 1882.

## No. 7.—INTERCOLONIAL RAILWAY.

### General Charges—(Abstract No. 5.)

| Previous Year. | —— | Year ending 30th June, 1882. |
|---|---|---|
| $ cts. | | $ cts. |
| 45,052 75 | Chief Superintendent, District Superintendents, Train Despatchers, and the General Freight Agent, General Passenger Agent, Clerks, Office and Travelling expenses | 55,791 08 |
| 21,155 01 | Accounting Department, salaries of the Treasurer, Traffic Auditor, Paymaster, Cashier, Clerks, Office and Travelling expenses | 20,618 04 |
| 3,675 60 | Damages to men, animals and goods | 14,527 95 |
| 23,277 05 | Ferry service | 23,087 76 |
| 1,247 46 | Telegraph expenses (not including pay to operators) | 2,561 07 |
| 21,765 07 | Miscellaneous, printing, advertising, etc | 29,887 50 |
| 6,535 65 | Agency expenses | 15,660 89 |
| 122,708 59 | | 162,134 29 |

THOS. WILLIAMS,
*Chief Accountant and Treasurer.*

Moncton, N.B., 30th June, 1882.

8—3½

## No. 8.—INTERCOLONIAL RAILWAY.

DR. GENERAL STORES ACCOUNT, Year ending 30th June, 1882. CR.

| 1881. | | $ cts. | $ cts. | 1882. | | $ cts. | $ cts |
|---|---|---|---|---|---|---|---|
| June 30.... | To Balance | | 313,701 06 | June 30.... | By Issues during year | 832,796 42 | |
| | | | | | Old material sold | 87,363 83 | |
| | | | | | | | 920,160 25 |
| 1882. | | | | | | | |
| June 30.... | Purchases during year | 692,400 12 | | | Balance— | | |
| | Charges from other Departments.... | 287,743 62 | | | Ordinary stores, including fuel | 265,031 13 | |
| | Pay Rolls | 11,466 20 | | | Iron and steel rails, &c | 42,106 54 | |
| | | | 991,609 94 | | Old material | 78,013 08 | |
| | | | | | | | 385,150 75 |
| | | | 1,305,311 00 | | | | 1,305,311 00 |

35

THOS. WILLIAMS,
*Chief Accountant and Treasurer.*

MONCTON, N.B., 30th June, 1882.

## General Balance, 30th June, 1882.

Dr. Cr.

| | $ cts. | $ cts. |
|---|---|---|
| Cash | | 16,612 97 |
| General stores— | | |
| Ordinary Stores, including Fuel | 265,031 13 | |
| Iron and Steel Rails, &c. | 42,106 54 | |
| Old material | 78,013 08 | |
| | | 385,150 75 |
| Stations | | 53,984 00 |
| Intercolonial Express Co. | | 1,850 68 |
| Rents | | 3,257 52 |
| Steel Company of Canada | | 29,656 99 |
| Acadia Coal Co. | | 3,733 85 |
| Intercolonial Coal Co. | | 1,427 39 |
| Spring Hill and Parrsboro' Railway | | 3,161 99 |
| Western Counties Railway, general account | 15,893 35 | |
| do do traffic account | 1,657 42 | |
| | | 17,550 77 |
| Halifax and Cape Breton Railway | | 119 88 |
| Windsor Branch Railway | | 1,912 75 |
| Windsor and Annapolis Railway, new account | 1,499 10 | |
| do do old account | 6,684 46 | |
| | | 8,183 56 |
| St. Martins and Upham Railway | | 4,107 39 |
| Elgin Branch Railway | | 726 10 |
| Kent Northern Railway | | 165 50 |
| Canada Pacific Railway, old account | 2,007 24 | |
| do do new account | 8 81 | |
| | | 2,016 05 |
| Chicago and Grand Trunk Railway | | 28 00 |
| Central Vermont Railway | | 17 00 |
| Canada Pacific Railway Co. | | 140 00 |
| Chatham Branch Railway | | 268 13 |
| Grand Trunk Railway, general account | | 3,710 52 |
| Prince Edward Island Railway | | 146 21 |
| Great Western Railway | | 12 20 |
| Oxford Branch Railway | | 12,324 80 |
| Coldbrook Rolling Mills | | 1,967 41 |
| Moncton Sugar Refinery Co. | | 2,938 45 |
| Nova Scotia Government | | 280 45 |
| Halifax Cotton Co, siding | | 9,188 48 |
| Carried forward | | 564,639 79 |

| | $ cts. | $ cts. |
|---|---|---|
| Dominion Account | | 598,392 65 |
| Accident Insurance | | 5,965 19 |
| Fines and Rewards | | 270 98 |
| Quebec Central Railway | | 34 26 |
| Grand Trunk Railway, traffic account | | 7,884 66 |
| Albert Railway | | 60 94 |
| Suspense account | | 6,975 43 |
| Carried forward | | 619,584 11 |

## No. 9.—INTERCOLONIAL RAILWAY—*Concluded.*

DR. GENERAL BALANCE 30th June, 1882. CR.

| | $ cts. | $ cts | | $ cts | $ cts |
|---|---|---|---|---|---|
| Brought forward | | 561,639 79 | Brought forward | | 619,584 11 |
| Unclaimed freight | | 73 77 | | | |
| Nova Scotia Forge Co | | 949 47 | | | |
| Moncton Cotton Co., siding | | 458 35 | | | |
| Steamer "St. Lawrence" | | 1,199 24 | | | |
| Prince Edward Island Steam Navigation Co | | 58 24 | | | |
| DEPARTMENTAL ACCOUNTS. | | | | | |
| Public Works | 42 79 | | | | |
| Post Office | 41,074 41 | | | | |
| Militia | 666 21 | | | | |
| Agriculture | 1,392 96 | | | | |
| Marine and Fisheries | 55 80 | | | | |
| Penitentiary, Dorchester | 22 85 | | | | |
| Justice | 810 45 | | | | |
| | | 44,065 47 | | | |
| Individual accounts | | 8,139 78 | | | |
| | | 619,584 11 | | | 619,584 11 |

THOS. WILLIAMS,
*Treasurer.*

MONCTON, N.B., 30th June, 1882.

## No. 10.—INTERCOLONIAL RAILWAY.

### Comparative Statement of Averages, Year ending 30th June, 1882.

| | 1882. | 1881. |
|---|---|---|
| Mileage of railway | 840 | 840 |
| Engine mileage | 3,900,850 | 3,453,078 |
| Train do | 3,195,566 | 2,813,723 |
| Cars do | 37,489,376 | 32,201,157 |
| | $ cts. | $ cts. |
| Receipts per engine mile | 53 30 | 50 98 |
| do mile of railway | 2,475 31 | 2,095 70 |
| | Per cent. | Per cent. |
| Percentage of passenger earnings to gross earnings | 31·32 | 30·97 |
| do freight do do | 62·69 | 63·27 |
| do other do do | 5·99 | 5·76 |
| Expenses per engine mile— | | |
| Drivers', Firemen's and Cleaner's wages | 3·81 | 3·98 |
| Fuel | 6·20 | 5·37 |
| Oil, tallow, waste and small stores | 0·89 | 0·90 |
| Repairs to engines | 4·93 | 4·84 |
| Water and tank repairs | 0·63 | 0·71 |
| Miscellaneous | 0·92 | 1·03 |
| Total | 17·38 | 16·83 |
| Mechanical Superintendent's salary, office and travelling expenses | 0·16 | 0·17 |
| | 17·54 | 17·00 |
| Locomotive power per engine mile | 17·54 | 17·00 |
| Car expenses do | 12·03 | 11·92 |
| Maintenance of way and works do | 12·21 | 11·01 |
| Station expenses do | 6·93 | 6·98 |
| General charges do | 4·15 | 3·55 |
| | 52·86 | 50·46 |
| Car mileage | 0·19 | 0·50 |
| Total per engine mile | 53·05 | 50·96 |
| Locomotive power per train mile | 21·41 | 20·86 |
| Car expenses do | 14·69 | 14·62 |
| Maintenance of way and works do | 14·90 | 13·52 |
| Station expenses do | 8·46 | 8·57 |
| General charges do | 5·07 | 4·36 |
| | 64·53 | 61·93 |
| Car mileage | 0·24 | 0·61 |
| Total per train mile | 64·77 | 62·54 |
| Working expenses per mile of railway | $2,463 88 | $2,095 06 |

THOS. WILLIAMS,
*Chief Accountant and Treasurer.*

Moncton, N.B., 30th June, 1882.

## INTERCOLONIAL

RETURN of Accidents and Casualties which have occurred in Canada

31st Decem

(*This Return is made up in compliance with the Provisions*

| Date. | Time of Night or Day. | Number of Train. | Description of Train. | Name of Conductor. | Name of Driver. | No of Engine. |
|---|---|---|---|---|---|---|
| 1881. | | | | | | |
| July 15... | 4.30 p.m. | ..... | Shunting ..... | ..... | R. James ..... | 94 |
| do 18... | 9 15 a.m. | 12 | Freight..... | J. Coffey ..... | A. Donald..... | 106 |
| do 22... | 2.00 p.m. | ..... | Special..... | J. W. King ..... | J. J. Smith ..... | 92 |
| do 23... | 10.00 p.m. | 10 | Express ..... | A. Hillson..... | R. Carr ..... | 71 |
| Aug. 4... | 7.00 a.m. | ..... | Shunting..... | Cummings, Yard Master. | J. W. Boyd..... | 37 |
| do 10... | 11.40 p.m. | 33 | Freight ..... | A. V. Bourret ..... | Thomas Quinn..... | 45 |
| do 18... | 3.40 p.m. | 34 | Express ..... | N. Merrill ..... | W. D. Martin ..... | 34 |
| do 23... | 2.45 p.m. | ..... | Shunting ..... | ..... | M. F. Jones..... | 53 |
| do 26... | 1.00 p.m. | ..... | ..... | ..... | ..... | ..... |
| Sept. 11... | 8.00 p.m. | ..... | Shunting ..... | J. A. Pratté, Agent.... | ..... | 97 |
| do 23... | 7.10 p.m. | ..... | Special ..... | F. A. Davison ..... | C. Edwards ..... | 6 |
| Sept. 24... | 8.00 a.m. | 18 | Express..... | John Ahern..... | Jos. Glennon..... | 35 |
| do 26... | 4,40 a.m. | ..... | Special..... | F. A. Davidson..... | H. Smith..... | 80 |
| Oct. 3... | 5.30 a.m. | ..... | do ..... | W. J. Ross..... | Jos. Probert ..... | 127 |
| do 7... | 2.15 a.m. | 14 | Freight..... | John Berry..... | P. Ashe ..... | 108 |
| do 12... | 6.45 p.m. | ..... | Special..... | J. Craigie ..... | C. Edwards..... | 6 |
| do 23... | 7.25 p.m. | 2 | Express..... | R. G. Duncan..... | M. Tobin..... | 55 |
| do 23... | 7.00 a m. | ..... | ..... | J. W. Pitfield, Station Agent. | ..... | ..... |

AILWAY.

ı the Line of the Intercolonial Railway, during the Half Year ending

ɛr, 1880.

*the Railway Act of* 1868, 31 *Vic., cap.* 68, *sec.* 43.)

| Place of Accident. | Name of Person Injured. | Whether Passenger or Employé. | Particulars of Accident. | Extent of Injury. | Verdict of Coroner's Jury. |
|---|---|---|---|---|---|
| t. John..... | Geo. Knowles . | Employé.. | While coupling cars, got finger on right hand caught. | Cut off first joint of finger. | |
| )orchester ..... | L. G. Smith .... | do ... | When applying brake, the spindle dropped through. | Crushed finger | |
| do ..... | — Luper ..... | do ... | Thrown off a car ..... | Back hurt ..... | |
| St. John... ..... | A. Hillson ..... | do ... | Stepped from platform of car into a hole. | Ankle sprained | |
| Truro ..... | Chas. Hall ..... | do ... | When coupling engine to car, got caught. | Seriously injured. | |
| Near Mill Stream | — Sawyer..... | do ... | Train ran into a rock weighing ten tons, throwing engine from track. | Fatal..... | No inquest held. |
| Carleton ..... | J. Johnson ..... | Passenger. | Attempted to get on train when in motion, and fell under the cars. | do ..... | Accidental death |
| St. John..... | Chs. McDonald | Employé.. | Was struck by engine while attempting to cross main line. | do ..... | do |
| York Point Wharf St John. | Rosa and Eddie Donahoe. | Neither.... | Fell over wharf..... | do ..... | Accidentally drowned. |
| Rivière du Loup. | — Chatigny .... | Employé.. | Coupling cars..... | Arm injured... | |
| Londonderry..... | J. McIntosh .... | do ... | When applying the brakes | do ... | |
| Stellarton..... | — McEvoy ..... | Employé . | Loading heavy freight.... | Hurt his side... | |
| Wellington ..... | Lewis Cuttle.... | do ... | Slipped on station platform. | do ... | |
| Stellarton..... | A. Fraser..... | do ... | While coupling cars..... | Hand jammed. | |
| Maccan..... | — Cormier ..... | do ... | While shunting, got his thumb caught. | Jammed piece off the end of his thumb | |
| Polly Bog..... | T. Johnston .... | do ... | Fell while jumping off train. | Ankle sprained | |
| Richmond ..... | G. M. Connor.. | do ... | do do .. | Badly injured. | |
| Moncton..... | Joseph Noel.... | Neither.... | Found dead alongside track. | Fatal. ..... | Accidental death |

INTERCOLONIAL

RETURN of Accidents and Casualties which have occurred in Canada,

| Date. | Time of Day or Night. | Number of Train. | Description of Train. | Name of Conductor. | Name of Driver. | No. of Engine. |
|---|---|---|---|---|---|---|
| 1881. | | | | | | |
| Oct. 25... | 2.40 a.m. | ..... | Special ..... | W. Foster..... | W. Sproul..... | 85 |
| do 29... | 2.15 a.m. | 13 | Freight..... | J. Berray ..... | G. B. Storey..... | 108 |
| do 31... | 2.05 p.m. | 29 | do ..... | J. McLeod ..... | G. Morrison..... | 105 |
| Nov. 19... | 8.00 a.m. | ..... | Shunting..... | H. H. Shcaefer, Station Agent. | A. Davey..... | 33 |
| do 26... | 9.00 a.m. | 33 | Freight..... | W. Sutherland..... | C. E. Sawyer..... | 75 |
| do 29... | 6.00 p.m. | ..... | Working..... | M. Daley..... | — McAuley..... | 98 |
| Dec. 3... | 5.50 p.m. | ..... | Shunting ..... | J. W. Pitfield, Station Agent. | J. McDermott..... | 99 |
| do 10... | 3.00 p.m. | ..... | Special ..... | J. Craigie ..... | G Futham ..... | 27 |
| do 20... | 10.15 p.m. | ..... | do ..... | M. W. Broad..... | D. A. Connor..... | 91 |
| do 21... | 3.40 p.m. | ..... | do ..... | M. Cummings..... | — Stratten..... | 45 |
| do 21... | 6.45 p.m. | ..... | Shunting..... | B. White, Yard Master. | P. Fogarty ..... | 94 |
| do 24... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1882. | | | | | | |
| Jan. 3... | 11.00 a.m. | ..... | Shunting ..... | W. G. Robertson, Station Master. | R. James..... | 100 |
| do 4... | 1.00 a.m. | ..... | Special..... | P. E. Heine..... | E. S. White..... | 47 |
| do 8... | 8.30 a.m. | ..... | Shunting..... | O. A. Barberie, Station Master. | B. Goodwin..... | 2 |
| do 17... | 6.50 a.m. | ..... | Special ..... | G. Walker..... | S. Jones ..... | 105 |
| do 17... | 6.50 a.m. | ..... | Light ..... | ..... | A. Ferguson..... | 101 |
| do 18... | 7.30 p.m. | ..... | Special ..... | W. T. Sprague..... | A. McCabe ..... | 104 |
| do 23... | 1.00 p.m. | ..... | do ..... | R. Johnson ..... | C. C. Brown..... | 115 |
| do 26... | 3.30 p.m. | ..... | Shunting..... | W. G. Robertson, Station Master. | R. James..... | 100 |

## RAILWAY.

### on the Line of the Intercolonial Railway, &c.—*Continued.*

| Place of Accident. | Name of Person Injured. | Whether Passenger or Employé. | Particulars of Accident. | Extent of Injury. | Verdict of Coroner's Jury. |
|---|---|---|---|---|---|
| Drummond ..... | Wm. Fleming.. | Employé.. | Fell off train..... | do ..... | Accidental death |
| Amherst..... | H. Buchanan... | do ... | Fell while running over cars. | Side badly hurt | |
| St. Luce ..... | P. McGee..... | do ... | While coupling cars..... | Arm jammed.. | |
| Point du Chene. | Fred. Smith.... | do ... | do ..... | Hand jammed. | |
| St. Simon..... | H. Michaud..... | do ... | do ..... | Thumb hurt.... | |
| Near Moncton..... | L. Connell ..... | do ... | do ..... | Arm jammed,. | |
| Moncton..... | Jas. Everett.... | do ... | While coupling engine to flat cars, got hand jammed. | Third finger amputated. | |
| Near RiverPhilip | Chas. Lockart. | do ... | Struck by engine while lying on the track. | Fatal..... | do |
| St. John..... | — Ryan..... | do ... | Fell from top of cars to ground. | Slightly hurt.. | |
| Charlo..... | T. Cormier..... | do ... | Slipped off the d of car | Hurt his back.. | |
| Moncton..... | Jackson Laird. | do ... | While coupling cars, got left hand caught. | Broke forefinger and burst thumb. | |
| Richmond..... | A. R. Chambers | Neither.... | Crushed between two cars he was moving. | Fatal..... | do |
| St. John..... | Robt. Irvine.... | Employé.. | While coupling cars, arm caught. | Fingers crushed. | |
| Near Newcastle. | W. Fitzpatrick. | do ... | Parallel rod breaking and knocking him off engine. | Badly cut on the head. | |
| Campbellton..... | W. England.... | do ... | Jumped from engine to ground. | Sprained his knee. | |
| Near St, Arsène.. | — Lebel..... | do ... | Collision between engines Nos. 101 and 105. | Slightly injured about head & side | |
| do .. | — Duhamel..... | do ... | do do ... | | |
| Carleton ..... | Wm. Treen..... | do ... | While coupling cars..... | Crushed his elbow seriously. | |
| Nigadoo ..... | — Blais ..... | Neither.... | Struck with wing plough. | Seriously injured. | |
| St. John..... | A. Manning .... | Employé.. | Flanger ran off track..... | Slightly injured. | |

## INTERCOLONIAL

RETURN of Accidents and Casualties which have occurred in

| Date. | Time of Day or Night. | Number of Train. | Description of Train. | Name of Conductor. | Name of Driver. | No. of Engine. |
|---|---|---|---|---|---|---|
| 1882. | | | | | | |
| Feb. 1... | 8.30 p.m. | ..... | Shunting ..... | W. H. Williams, Asst Station Agent. | P. Fogarty ..... | 94 |
| do 2... | 4.45 p.m. | 34 | Freight..... | — Macpherson..... | W. Russell..... | 51 |
| do 4... | 10.30 p.m. | ..... | Shunting..... | W. H. Williams, Asst. Station Agent. | P. Fogarty ..... | 94 |
| do 5... | 1.50 a.m. | ..... | do ..... | C. F. Dery, Station Agent. | W. Bastien ..... | 103 |
| do 6... | 6.10 p.m. | ..... | Special ..... | W. J. Dickson..... | E. Blair ..... | 30 |
| do 6... | 6.10 p.m. | 13 | Accommodation. | W. H. Donkin ..... | H. Smith ..... | 52 |
| do 8... | 3.00 p.m. | 23 | Freight ..... | G. McLeod ..... | J. J. Smith ..... | 121 |
| Feb. 10... | 10.45 p.m. | 23 | Freight..... | G. McLeod ..... | A. Calder ..... | 32 |
| do 3... | 8.15 a.m. | ..... | Express..... | R. G. Duncan ..... | ..... | ..... |
| do 13... | 5.50 a.m. | ..... | Special ..... | D. Buchanan ..... | J. Glennon..... | 60 |
| do 15... | 3.30 a m. | 5 | Freight..... | R. A. Rainnie..... | J. J. Irvine ..... | 59 |
| do 15... | 5.15 a.m. | ..... | Shunting..... | W. H. Williams, Asst. Station Agent. | A. B. White ..... | 94 |
| do 21... | 5.30 a.m. | ..... | ..... | H. H. Carvell, Freight Agent. | ..... | ..... |
| do 21... | 10.25 a.m. | 34 | Freight..... | N. Merrill ..... | C. Atkinson ..... | 44 |
| do 24... | 8.00 p.m. | ..... | Special.. ..... | — McLeod..... | J. J. Smith ..... | 92 |
| do 28... | 9.15 a.m. | ..... | do ..... | W. J. Dickson..... | J. Stockall..... | 60 |
| March 3... | 7.30 p.m. | 1 | Express ..... | A. Rainnie ..... | T. W. Prince ..... | 74 |
| do 13... | 4.05 p.m. | ..... | Special ..... | Y. C. Campbell. ..... | R. McMann ..... | 59 |

RAILWAY.

Canada on the Line of the Intercolonial Railway, &c.—*Continued.*

| Place of Accident. | Name of Person Injured. | Whether Passenger or Employé. | Particulars of Accident. | Extent of Injury. | Verdict of Coroner's Jury. |
|---|---|---|---|---|---|
| Moncton ..... | C. Myshrall .... | Employé. | Was struck on side by car. | Considerably bruised. | |
| Near Beaver Brook. | T. Sullivan..... | do ... | Hand car ran over him ... | Badly hurt..... | |
| Moncton. ..... | Jas. Powal .... | do ... | While coupling cars, got arm jammed. | Slightly injured. | |
| St. Flavie ..... | A. Lebel ..... | do ... | While coupling cars. ..... | Thumb taken off | |
| Near Windsor Junction. | A. Cameron.. | do ... | In collision between trains. | Fatal..... | Mistake in detention order. |
| do ... | W. H. Donkin | do ... | | Not seriously.. | |
| | Simeon Hall. | do ... | | do ... | |
| Athol ..... | M. Cooke..... | do ... | While cleaning out ash pan. | Slightly injured. | |
| Grenville ..... | Chas. Lunn.... | do ... | While coupling cars, arm caught between buffers | Arm amputated. | |
| Halifax. ..... | Jas. Keys..... | do ... | While adjusting bell cord in 1st class car, slipped off step ladder. | Foot sprained. | |
| Near Memramcook. | Jos. Brean ..... | Neither.... | Struck by engine while lying on track. | Fatal ..... | Struck by train. No blame attached to railway. |
| Salisbury..... | Isaac Campbell | Employé.. | While putting pin between car and tender. | Bruised knee... | |
| Moncton..... | Jas. E. Elliott. | do ... | Oil box struck him on hip. | Arm and hip injured. | |
| do ..... | Jno Arthur..... | do ... | Case of goods fell across his leg. | Severely injured. | |
| Charlo ..... | Jas. Treen ..... | do ... | While coupling cars..... | Hand crushed. | |
| Spring Hill ..... | — McLeod ..... | do ... | Caught between plough and door of shed. | Seriously injured. | |
| Amherst..... | D. Stevens ..... | do ... | While coupling cars ..... | Very bad.. .... | |
| Hampton..... | Geo. Buchanan | Neither.... | Found lying on main track with one leg cut off. | Fatal ..... | Accidental death while under the influence of liquor. |
| Near Moncton.... | A. G. Graham. | Employé in shops. | While attempting to cross track with a team, was run into. | do ..... | Accidental death |

## INTERCOLONIAL

RETURN of Accidents and Casualties which have occurred in

| Date. | Time of Day or Night. | Number of Train. | Description of Train. | Name of Conductor. | Name of Driver. | No. of Engine. |
|---|---|---|---|---|---|---|
| 1882. | | | | | | |
| March 22... | 3.00 p.m. | ..... | Special ..... | N. W. Broad..... | J. Brownell..... | 63 |
| do 24... | 1.00 p.m. | ..... | do ..... | J. Craigie ..... | B. Cooke ..... | 31 |
| do 25... | 7.30 a.m. | ..... | do ..... | E. L. Watts ..... | S. Watson ..... | 43 |
| do 26... | 9.00 a.m. | ..... | Shunting..... | J. W. Pitfield, Station Agent. | P. Fogarty ..... | 99 |
| do 30... | 4.45 a.m. | ..... | Special..... | J. Geldert ..... | Wm. Hunt..... | 73 |
| do 30... | 4.45 a.m. | ..... | do ..... | Geo. Logan..... | J. W. Nairn..... | 28 |
| do 31... | 1.30 a.m. | ..... | do ..... | A. Armstrong ..... | A. Lacroix ..... | 116 |
| April 13... | 11.00 a.m. | ..... | ..... | W. G. Robertson, Station Master. | ..... | ..... |
| do 24... | 1.40 p.m. | ..... | Special..... | T. S. Moore, Station Agent. | Jas. McAuley ..... | 121 |
| do 26... | 10.00 a.m. | ..... | Shunting ..... | R. MacDonald, Station Agent. | Wm. Lovett ..... | 83 |
| do 27... | 7.45 p.m. | ..... | ..... | T. Laverdière, Station Agent. | ..... | ..... |
| May 2... | 8.00 p.m. | 6 | Freight ..... | W. J. Campbell..... | J. J. Irvine ..... | 50 |
| do 2... | 9.00 p.m. | ..... | Shunting ..... | R. Williams ..... | Jno. Leonard ..... | 95 |
| do 4... | 11.45 a.m. | ..... | Special ..... | Wm. Foster..... | N. Sproule..... | 85 |
| do 6... | 6.00 p.m. | ..... | Working..... | A. MacPherson..... | A. McCabe..... | 64 |
| do 12... | 1.00 p.m. | ..... | ..... | R. MacDonald, Station Agent. | ..... | ..... |
| do 18... | 11.00 p.m. | ..... | Shunting..... | Ed. Boak, Station Agent. | C. Tobin..... | 98 |
| do 24... | 4.00 p.m. | ..... | do ..... | W. G. Robertson, Station Master. | A. James..... | 100 |

## RAILWAY.

### Canada, on the Line of the Intercolonial Railway, &c.—*Continued.*

| Place of Accident. | Name of Person Injured. | Whether Passenger or Employé. | Particulars of Accident. | Extent of Injury. | Verdict of Coroner's Jury. |
|---|---|---|---|---|---|
| Sussex | Sam'l Sprague. | Employé. | While coupling cars | Fingers badly crushed. | |
| Calhoun's | Jane Sewell | Neither | Struck by engine while walking on track. | Badly hurt. | |
| Red Pine | W. Pride | Employé. | While coupling cars | Hips jammed. | |
| Moncton | N. C. Daley | do | While coupling cars | Thumb broken & 2 fingers inj. | |
| Grand Lake | J. E. Geldert. | do | Rear collision between trains. | Fatal | Accidental death |
| do | B. Peterson... | do | | Slightly inj'd. | |
| | J. W. Nairn. | do | | do | |
| St. Fabien | D. Michaud | do | Fell from top of box car.. | Arm broken & severely inj'd about the head | |
| St. John | E. P. Shaw | do | While unloading machinery. | Foot crushed severely. | |
| Amherst | N. W. Broad | do | While shunting, fell under cars. | Fatal | Accidental death |
| Halifax | Henry Garrett.. | do | Struck a fence | Head & shoulders injured. | |
| Chaudière Junction. | Jos. Ouellet.. | do | Oil in tank ignited... | Fatal | No inquest held. |
| | Geo. Langlois | do | | Face and hands burnt. | |
| | Ph. Ouellet... | do | | do | |
| | C. Hobrough. jun. | do | | Face and hands burnt very slight. | |
| Petitcodiac | Thos. McKee | do | While coupling cars | Crushed very bad. | |
| Truro | Jno. Leonard... | do | Gauge glass broke | Hand scalded. | |
| Smelt Brook | Hugh Fraser | do | While coupling cars | Finger badly injured. | |
| Berry Mills | W. G. Peters... | do | While distributing sleepers. | Breast crushed | |
| Halifax | William Roast (boy). | Neither | Found between buffers of two cars. | Fatal | Accidental death |
| Richmond | Fred. Forrest... | Employe.. | While coupling cars | Left hand badly injured. | |
| St. John | Samuel Ritchie | do | do | Top of thumb badly crushed | |

## INTERCOLONIAL

RETURN of Accidents and Casualties which have occurred in

| Date. | Time of Day or Night. | Number of Train. | Description of Train. | Name of Conductor. | Name of Driver. | No. of Engine. |
|---|---|---|---|---|---|---|
| 1882. | | | | | | |
| May 26... | 5.15 a.m. | 15 | Freight | J. Berry | G. B. Storey | 112 |
| do 31... | 10.30 p.m. | | Special | F. Dumont | W. Bastien | 13 |
| June 8... | 11.10 p.m. | | do | J. Huppe | A. Lacroix | 116 |
| do 15... | 11.15 a.m. | 29 | Express | M. Letarte | W. Wall | 133 |
| do 19... | 11.30 a m. | | Shunting | J. W. Pitfield, Station Agent. | B. White, Yardmaster. | |
| do 21... | 7.04 p.m. | 15 | Freight | J. W. Miller | Geo. Futham | 9 |
| do 22... | 4.40 p.m. | 8 | Accommodation. | — Kelly | F. Whitney | 52 |
| do 24... | 5.25 a.m. | | Special | A. E. Yeo | H. Gorham | 3 |
| do 27... | 7.30 a.m. | | do | — Proulx | Jas. Miller | 119 |

RAILWAY.

Canada on the Line of the Intercolonial Railway, &c.—*Continued.*

| Place of Accident. | Name of Persons Injured. | Whether Passenger or Employé. | Particulars of Accident. | Extent of Injury. | Verdict of Coroner's Jury. |
|---|---|---|---|---|---|
| Painsec Junction | Jos. Phinney... | Employé.. | While coupling cars. ..... | Had a piece of finger amputated. | |
| Bic..... | ..... | Passenger | Getting off train when in motion. | Injured himself about the head. | |
| Rivière du Loup. | E. Roberge..... | Employé.. | While coupling bell cord on engine, fell off. | Broke his leg in two places. | |
| St. Octave ..... | — Chamberland (boy). | Neither.... | Trying to jump on train in motion. | Lost his leg. ... | |
| Moncton.... ..... | C. H. Angus.... | Employé.. | While coupling cars..... | Smashed finger | |
| Brookfield ..... | J. Hamilton..... | Station employé | Jumping on train when in motion. | Foot amputated. | |
| St. John..... | A. Kimball..... | Employé.. | While coupling engine to train. | Two fingers injured. | |
| Near Bic..... | Jas. Kelly..... | do ... | Found lying on track..... | Fatal..... | No inquest held. |
| Near St. Alexandre. | Conductor Proulx. | do ... | Fell off train..... | Broke one leg and head badly cut. | |

## PRINCE EDWARD ISLAND RAILWAY.

SUPERINTENDENT'S OFFICE,
CHARLOTTETOWN, 1st August, 1882.

SIR,—I have the honor to submit the following Report on the operation of the Prince Edward Island Railway for the year ending 30th June, 1882, and to enclose herewith the accounts for the year, comprising:—

No. 1. Capital account.
" 2. Revenue account.
" 3. Locomotive power.
" 4. Car expenses.
" 5. Maintenance of way and works.
" 6. Station expenses.
" 7. General charges.
" 8. Monthly statement of earnings.
" 9. Statement of general store account.
" 10. General balance.
" 11. Comparative statement of averages.

I also enclose the report of the Mechanical Superintendent and Storekeeper, with statement prepared by him.

### CAPITAL ACCOUNT.

The total expenditure on capital account to 30th June, 1881, was $3,466,588.57, since which date $402.03 have been expended for land taken in connection with the Souris extension, and for legal expenses connected therewith, making a total outlay on capital account to date of $3,466,990.60.

### REVENUE ACCOUNT.

The gross earnings for the year were the largest in the history of the road, and amounted to - - - - - - - - - $137,267 54
Previous year - - - - - - - - - 131,131 43

Increase - - - - - $6,136 11

The earnings per mile of railway compare, with the previous year, as follows:—

1880–81 (198½ miles operated) - - - - - $660 61
1881–82 " " - - - - - - 691 52

An increase per mile of - - - $30 91

The passenger traffic is increasing, as shown by the following comparative statement:—

| | Passengers carried. | Receipts. |
|---|---|---|
| 1879–80 | 90,533 | $51,679 86 |
| 1880–81 | 102,937 | 57,188 30 |
| 1881–82 | 118,436 | 63,949 26 |

During the year the general freight tariff was revised, and very considerable reductions were made in the rates, more particularly on the long distances.

There is a slight increase in the tonnage of freight moved, but a decrease in earnings from this source, arising no doubt from reduced rates before mentioned.

| | Freight carried tons. | | Receipts. |
|---|---|---|---|
| 1880-81 | 45,336 | | $65,326 13 |
| 1881-82 | 48,315 | | 64,776 28 |
| Increase | 2,979 | Decrease | $549 85 |

The partial failure of the fisheries last fall, the suspension of the Bank of Prince Edward Island, the extreme severity of the winter and late opening of navigation in spring, all combined to operate against the business of the road.

The engine mileage compared with last year, was:—

| | Miles. |
|---|---|
| 1880-81 | 314,918 |
| 1881-82 | 317,194 |
| Increase | 2,276 |

The train mileage, compared with last year, was:—

| | |
|---|---|
| 1880-81 | 255,353 |
| 1881-82 | 253,185 |
| Decrease | 2,168 |

The car mileage, compared with last year, was:—

| | |
|---|---|
| 1880-81 | 1,122,419 |
| 1881-82 | 1,117,989 |
| Decrease | 4,430 |

## Expenditure.

The operating expenses for the year amounted to $228,259.97. Of this amount, a large sum was expended in the erection of new stations, freight-houses, coal sheds, and other improvements beyond ordinary maintenance of the line. The unprecedented severity of the winter also added very materially to the operating expenses, the removal of snow and ice alone costing $14,622.18. Some idea of the difficulty encountered in operating the road during the last two winters can be formed when it is stated that the snow-plough mileage on the 200 miles of the line was 61,137. On the 29th of March last, in a district extending over 121 miles, there was 14 miles of snow-drifts from 5 to 10 feet deep, four and one-fifth miles from 10 to 15 feet deep, and one and one-fifth mile from 15 to 20 feet deep.

## Maintenance of Way.

The road-bed has received great attention and is now in excellent order; 105,984 sleepers were replaced during the year, as against 63,801 in the previous year, being an increase of 42,183. On one-half of the line the number of sleepers has been increased from 2,200 to 2,640 per mile. This has very greatly improved the road, and by affording more support will undoubtedly prolong the life of the rails. It is proposed to continue this increase of 440 sleepers per mile, so as to complete the entire line during the next two years.

New sidings were laid down during the year, as follows:—

| | | Length in feet. |
|---|---|---|
| Charlottetown, | Spur | 226 |
| Peake's Starch Factory, | " | 250 |
| Georgetown, Y | " | 735 |
| " | Through | 350 |
| Alberton, | " | 374 |
| Cascumpec, | " | 263 |
| Pinsville, | " | 309 |
| Conway, | " | 384 |
| Summerside, | " | 226 |
| New Annan, | " | 546 |
| And the following were extended:— | | |
| Elmsdale, Spur | | 72 |
| Alberton, through | | 450 |
| Aggregating in length | | 4,185 |

There are now on the line 145 sidings, equivalent in length to about 14 miles of second track.

Twelve hundred car loads of ballast were distributed where most required. It is much to be regretted that the quality is very poor, rendering it extremely difficult in the spring when the frost is leaving the ground, to keep the road in good running order.

### Bridges.

The masonry of all bridges and culverts was carefully examined, thoroughly repaired and pointed with cement where necessary, while the superstructures received all requisite attention. All are now in good order.

Twenty-three cattle guards were built, and 40 received new stringers and other repairs.

### Buildings.

Combined passenger and freight stations were erected at Bloomfield and Freetown. At Ellerslie a dwelling house and freight house combined was built.

The station houses at Cardigan, St. Peters, Hunter River, Kensington and County Line were greatly enlarged, re-arranged, thoroughly repaired and painted inside and out; while general repairs were made to Mount Stewart, Charlottetown and Bredalbane, and platforms rebuilt at Mount Stewart, Hunter River, Port Hill and St. Peters.

At Alberton the old freight house was moved to the north end of the station and 100 feet added to its length, making it one of the most commodious and best arranged freight houses on the line.

The coal shed at Charlottetown was enlarged by the addition of 40 feet, and the building arranged with inclines, so that coal is now dumped into the engines from small coal cars, in place of being handled in baskets as formerly. At Summerside 100 feet was added to the coal shed proper, and a building similar to that at Charlottetown for dumping purposes was erected. This will enable the coaling to be done at both these stations in much less time than formerly, and will be of great advantage in winter. The coal sheds at Georgetown, Mount Stewart, Hunter River and O'Leary, also received necessary repairs.

The railway wharves at Charlottetown and Georgetown have received attention. Considerable additional work will be required on those at Charlottetown and Summerside this fall. The worms at these places are very destructive to the piles.

### Fencing.

During the year 6¼ miles of barbed wire fence and about 3½ miles of pole fence, was built. Land was purchased for, and the erection of 8,095 feet of new snow fence completed during the year; while a large amount of old fence was rebuilt.

The heavy snow falls of last winter did much damage to fencing.

### Water Supply.

The Haggas Water Elevator, which was adopted during the previous year, continued to give satisfaction, and additional watering stations on that principle ve been constructed at Elliott's, Miscouche, Port Hill, Alberton and Union. All of old tank houses, with the exception of those at Baldwin's, Charlottetown and nter River, have been taken down That at Alberton has been converted into a l shed.

### Mechanical Department.

This department received particular attention during the year, and extensive newals and repairs were made to both locomotives and cars.

Engines Nos. 13, 14, 15, 16, 17 and 18, have been thoroughly overhauled, and e now in first-rate order. Engine No. 12 is undergoing repairs, and will shortly fit for service. Up to this date, seven of the old tank engines, with which the ad was originally equipped, have been condemned. Four have been already placed by purchase, and others are now being constructed at Kingston to replace e balance.

Two locomotives of the Mason-Fairlie type were purchased from the New runswick Railway Company, in November last, and have given great satisfaction.

The passenger cars are in good order. A sufficient number to equip the express ains were painted and otherwise improved during the winter.

All express trains on this road are now supplied with Miller platforms and air-reaks, thereby adding materially to the comfort and safety of the travelling public.

Eight 20-ton box and five 10 ton platform cars were rebuilt to replace an equal umber of 8-ton cars which have been condemned.

Owing to the severity of the winter, the snow-ploughs received hard service, and aree will require to be renewed before another winter sets in.

### Stores.

The purchases during the year amounted to $64,843.28. The value of stores on and, 30th June, was as follows:—

| | | |
|---|---|---|
| General stores | $41,693 99 | |
| Rails and fastenings | 17,789 05 | |
| | | $59,483 04 |
| Coal | | 32 51 |
| | | $59,450 53 |

The purchases, as usual, are largely made by tender and contract, and only material of the best quality has been used in the maintenance of the road.

### Casualties.

I am glad to say that no accident of any description happened to any passenger on the line during the year, but regret to report the following fatalities:

On 10th September, a lad named George Henry Taylor, who was lying asleep or in a fit on the track near Brudenell Station, was run over and so badly injured by No. 13 train, that he died within a few hours. The verdict of the jury was as follows:—"That deceased, George Henry Taylor, appears to have been sleeping on the railway track at Brudenell Station His death was caused by the train passing over him. It appears to the jury, from the evidence, that the train hands did all possible to stop the train, which was found impossible by reason of the short distance and heavy train, and down grade, and that the said George Henry Taylor, in manner and by means aforesaid, casually and by misfortune, came to his death and not otherwise."

On the 24th February, while engaged in opening the line after a severe snow-storm, Archibald Macfarlane, an engine driver, fell from his engine, was run over, and instantly killed. The verdict of the coroner's jury was as follows:—"The said Archibald Macfarlane, on the 24th February, being driver of engine No. 20, going west on special snow clearing train, of which Daniel McDonald was conductor, when about a mile west of Summerside, slipped and fell from said engine, the outside running gear striking him on the head, which, together with the snow plough passing over his head, inflicted wounds which, we believe, caused instant death."

In conclusion, I am happy to say the whole road was never in better order, nor the public better served than at present. Express trains are run in summer with the utmost regularity, and afford great accommodation to the people. In winter, owing to snow, it is impossible at times to maintain regularity, but the most untiring efforts are made to keep the line open and traffic moving.

In short, the line will compare favorably with any of the same gauge on the continent.

I have the honor to be, Sir,
Your obedient servant,

L. B. ARCHIBALD,
*Superintendent.*

COLLINGWOOD SCHREIBER, Esq.,
Chief Engineer and General Manager Government Railways,
Ottawa.

## PRINCE EDWARD ISLAND RAILWAY.

MECHANICAL SUPERINTENDENT'S OFFICE,
CHARLOTTETOWN, 14th August, 1882.

SIR,—I beg to submit the following statement showing the operations of the Mechanical Department of this Railway for the year ending 30th June, 1882.

A.—Monthly statement of the cost of locomotive power.
B.—Statement of performance and consumption of locomotives.
C.—Monthly statement of car mileage.
D.—Statement showing number of locomotives and cars.
E.—Statement of the expenses of the Mechanical Department for the year 1882.

I was appointed Mechanical Superintendent and Storekeeper of this Railway on 22nd November, 1881, and, in compliance with your instructions, I immediately commenced a thorough inspection of the machinery and rolling stock of the road, and reported upon the condition of the same. Since then, the work of carrying out those of my suggestions which met with your approval for bettering the condition and increasing the efficiency of the service has been diligently prosecuted.

The stationary engine, being urgently in need of thorough repair, was first taken in hand and carefully overhauled. From long service with the use of water of an alkaline nature the boiler was much encrusted, and the crown sheet, bars, and stays had to be entirely renewed. By temporarily substituting one of the old tank engines in its place, repairs to this engine were made without any interruption to the working of the machinery in the shops. In this connection I would suggest that if possible a supply of better water be procured for the use of the Mechanical Department at Charlottetown, as all the locomotives are suffering more or less from the use of bad water at this place.

### LOCOMOTIVES.

Four of the ten tank engines with which the road was originally equipped have been condemned up to this date, and four engines were purchased replacing them.

Three others have been condemned during the year, and others to replace them are in course of construction at Kingston (and it is expected will be on the road this fall), leaving now on the road, fit for service, fifteen locomotives, which are numbered as follows:—

1, 2, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 and 20.

No. 1, which was purchased from the New Brunswick Railway Co. last fall, is of the Mason-Fairlie type built by the Mason Machine Works at Taunton, Mass., in 1873, and is in good order.

No. 2, which is an engine precisely the same in every respect as No. 1, and purchased at the same time, is also in good order, but will shortly require a new set of tires. These engines have given every satisfaction since they were put on the road.

Nos. 7, 9 10 are tank engines, and are used only as switch engines, not being suitable, on account of their limited tank capacity, for running passenger or freight trains. They have received the repairs necessary during the year to keep them in good condition for their work.

No. 11, built at the Baldwin Works, Philadelphia, in 1874, will shortly require to be taken into the shop and thoroughly repaired.

No. 12, built at the Baldwin Works in 1874, is now in the shops undergoing heavy repairs.

No. 13, built at the Baldwin Works in 1874, has been carefully overhauled during the past winter and is now in excellent working order.

No. 14, built at the Baldwin Works in 1874, has also received extensive repairs and is in first class condition.

Nos. 15, 16, 17, and 18, built at the Kingston Works in 1876, have also been thoroughly overhauled. No. 17 since her repairs has seen a good deal of hard service, and will shortly require some additional labor expended on her. The others are in first rate order. All of the tenders of these American pattern locomotives had only one truck and a pair of pony wheels under them. They have all been furnished with new tender frames, which have been lengthened so as to enable us to put in two pairs of trucks. This adds very much to their safety, as previous to this they were continually getting off the track.

Engines Nos. 19 and 20, built at the Kingston Works in 1880, are of the "Mason-Fairlie" pattern, with outside link motion. These engines have required continual attention in order to keep them running.

The boilers and steam gauges of all the locomotives are duly tested and a record of the same kept.

CARS.

| | |
|---|---|
| The road is equipped with 282 cars, as follows:— | |
| First class passenger cars | 14 |
| Second class cars | 3 |
| Second class and baggage cars combined | 8 |
| Baggage car | 1 |
| Postal cars | 2 |
| Pay car | 1 |
| Conductors' vans | 3 |
| Box cars | 142 |
| Cattle cars | 4 |
| Sheep cars | 4 |
| Flat cars | 100 |

Of the 150 box, stock and sheep cars, 104 are 8-ton cars, and are those with which the road was first equipped. The greater number of these have small, light trucks, with 24-inch wheels. The other 46 are 10-ton cars, and are in good condition, having 33-inch wheels and standard trucks.

Of the 100 flat cars, 37 are 8-ton cars, and are those with which the road was originally supplied.

The balance, 63, are 10-ton cars, and are in good order. All of the 8-ton cars will very shortly require to be rebuilt.

There are 5 snow ploughs, 2 of which are in good condition, the other 3, from the hard service to which they have been subjected during the past two winters, will require to be thoroughly repaired or rebuilt this fall.

There are also one auxiliary car and 6 flangers; 2 of the latter have been rebuilt during the past year, and are in good order.

The passenger car stock is in satisfactory condition, and with but few exceptions is equipped with the Miller platform and air-brake. A sufficient number of these cars to equip the express trains received extensive repairs and painting during the winter.

No. 12 coach was rebuilt and very much improved.

Six box cars, 2 flangers and 5 platform cars, each of 10-ton capacity, were built during the year to replace an equal number of 8-ton cars condemned.

The machinery and tools in the shops have been efficiently maintained, and the following additions made to them: 2 emery grinders, 1 milling machine, 1 lathe, 1 cut off saw and 1 bolt heading machine.

In the blacksmith's shop, 4 forges have been rebuilt.

All the pits and the floor of the round-house at Charlottetown have been renewed, and I would recommend that new iron turn-tables be procured without delay for the Charlottetown, Summerside and Tignish engine houses.

I have the honor to be, Sir,
Your obedient servant,

J. UNSWORTH,
*Mechanical Superintendent and Storekeeper.*

L. B. Archibald, Esq.,
Superintendent P.E.I. Railway,
Charlottetown.

# PRINCE EDWARD ISLAND RAILWAY.

## MECHANICAL DEPARTMENT.

### A.—STATEMENT of the cost of Locomotive Power for the year ended 30th June, 1882.

| Months. | Miles run by Engines, less Ballasting. | Cost of | | | | | | | Average Cost per Mile run. | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Engine men's Wages. | Fuel. | Oil, Tallow, Waste, &c. | Repairs. | Water, including Tank and Pump repairs. | Miscellaneous, including expenses of Office and Engine-houses. | Total. | Engine men. | Fuel. | Oil, Tallow, &c. | Repairs. | Water. | Miscellaneous. | Total. |
| | | $ cts. | $ cts | $ cts. | $ cts. | $ cts. | $ cts. | $ cts. | Cts. | Cts. | Cts. | Cts. | Cts. | Cts. | Cts. |
| 1881—July | 31,704 | 1,085 58 | 1,186 27 | 127 88 | 764 55 | 0 2[illegible] | 166 93 | 3,331 44 | 3·42 | 3·74 | 0·41 | 2·41 | 0·01 | 0·52 | 10·51 |
| August | 34,215 | 1,142 42 | 1,331 82 | 151 78 | 1,052 65 | 31 33 | 194 86 | 3,904 86 | 3·34 | 3·89 | 0·44 | 3·08 | 0·09 | 0·57 | 11·41 |
| September | 29,593 | 1,015 94 | 1,492 12 | 108 08 | 1,313 45 | 42 83 | 183 04 | 4,155 46 | 3·43 | 5·04 | 0·36 | 4·44 | 0·15 | 0·62 | 14·04 |
| October | 31,649 | 1,037 55 | 1,637 60 | 136 25 | 1,06[illegible] 30 | 340 52 | 211 83 | 4,425 05 | 3·28 | 5·17 | 0·42 | 3·35 | 1·08 | 0·68 | 13·98 |
| November | 34,589 | 1,169 52 | 2,018 28 | 161 53 | 11,075 53 | 460 92 | 388 96 | 15,274 74 | 3·38 | 5·83 | 0·47 | 32·02 | 1·33 | 1·13 | 44·16 |
| December | 21,810 | 851 62 | 1,362 72 | 131 76 | 2,530 54 | 2,888 13 | 303 04 | 8,067 81 | 3·91 | 6·24 | 0·60 | 11·60 | 13·25 | 1·39 | 36·99 |
| 1882—January | 19,465 | 844 18 | 1,245 62 | 143 20 | 2,724 50 | 19 00 | 544 62 | 5,521 12 | 4·33 | 6·40 | 0·73 | 14·00 | 0·10 | 2·80 | 28·36 |
| February | 19,935 | 1,329 78 | 1,599 48 | 158 08 | 2,890 89 | 108 50 | 378 26 | 6,464 99 | 6·67 | 8·03 | 0·79 | 14·50 | 0·55 | 1·89 | 32·43 |
| March | 22,265 | 1,482 07 | 1,975 80 | 175 42 | 3,414 67 | 4 56 | 261 47 | 7,313 99 | 6·66 | 8·87 | 0·79 | 15·34 | 0·02 | 1·17 | 32·85 |
| April | 20,797 | 1,156 47 | 1,437 94 | 128 44 | 157 22 | 26 35 | 241 50 | 3,147 92 | 5·56 | 6·92 | 0 61 | 0·75 | 0·13 | 1·16 | 15·13 |
| May | 22,393 | 1,160 61 | 1,217 44 | 127 77 | 568 60 | 10 76 | 199 34 | 2,147 32 | 5·18 | 5·43 | 0·57 | 2·53 | 0·04 | 0·89 | 9·58 |
| June | 28,779 | 1,248 17 | 1,413 68 | 166 37 | 145 31 | 26 06 | 242 04 | 3,241 63 | 4·33 | 4·92 | 0·58 | 0·50 | 0·09 | 0·84 | 11·26 |
| Totals | 317,194 | 13,523 91 | 17,918 77 | 1,716 56 | 26,562 01 | 3,959 19 | 3,315 89 | 66,996 33 | 4·26 | 5·65 | 0·54 | 8·38 | 1·25 | 1·04 | 21·12 |

(Signed) J. UNSWORTH,
*Mechanical Superintendent and Storekeeper.*

## PRINCE EDWARD

### MECHANICAL

### B.—STATEMENT of the Performance and Consumption

| Months. | Hours in steam. | Train Mileage. | | | | Miles run by Engines. | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Passengers. | Freight and Mixed. | Ballasting. | Piloting. | With train. | Light. | Shunting. | Total. |
| 1881—July | 3,700 | 12,535 | 13,399 | 923 | ..... | 26,857 | 63 | 5,802 | 32,722 |
| August | 3,893 | 13,500 | 14,448 | 312 | ..... | 28,260 | 147 | 6,150 | 34,557 |
| September | 3,660 | 10,546 | 13,198 | 1,892 | ..... | 25,636 | 408 | 5,980 | 32,024 |
| October | 3,845 | 11,143 | 14,088 | 930 | 32 | 26,193 | 167 | 6,416 | 32,776 |
| November | 4,051 | 11,175 | 16,318 | ..... | ..... | 27,493 | 334 | 6,762 | 34,589 |
| December | 2,757 | 1,400 | 15,583 | 68 | ..... | 17,051 | 113 | 4,734 | 21,898 |
| 1882—January | 2,397 | 1,574 | 13,442 | ..... | 898 | 15,914 | 44 | 3,507 | 19,465 |
| February | 3,581 | ..... | 8,936 | ..... | 6,473 | 15,409 | 714 | 3,812 | 19,935 |
| March | 4,136 | ..... | 11,438 | ..... | 5,505 | 16,943 | 769 | 4,553 | 22,265 |
| April | 2,959 | 400 | 12,885 | ..... | 3,406 | 16,691 | 275 | 3,831 | 20,797 |
| May | 2,980 | 2,619 | 14,848 | ..... | 253 | 17,720 | 22 | 4,651 | 22,393 |
| June | 3,376 | 9,818 | 13,232 | ..... | 93 | 23,143 | 184 | 5,452 | 28,779 |
| Totals | 41,335 | 74,710 | 161,815 | 4,125 | 16,660 | 257,310 | 3,240 | 61,650 | 322,200 |

ISLAND RAILWAY.

DEPARTMENT.

of Locomotives, for the Year ended 30th June, 1882.

| Total Mileage. | | * Average of cars per mile run with train. | Average Mileage. | | Consumption. | | | | Consumption per 100 miles run by Engines. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cars. | Snow Ploughs. | | Miles to one hour in steam. | Of Cars to one of Engine. | Bushels of coal. | Pints of oil. | Pounds of tallow. | Pounds of waste. | Bushels of coal. | Pints of oil. | Pounds of tallow. | Pounds of waste. |
| 118,258 | ..... | 4·40 | 8·84 | 3·61 | 12,880 | 948 | 805 | 272 | 39·36 | 2·89 | 2·46 | 0·83 |
| 130,004 | ..... | 4·60 | 8·87 | 3·76 | 14,353 | 1,156 | 924 | 319 | 41·53 | 3·34 | 2·67 | 0·92 |
| 126,208 | ..... | 4·92 | 8·75 | 3·94 | 14,196 | 880 | 872 | 266½ | 44·33 | 2·74 | 2·72 | 0·83 |
| 129,502 | 419 | 4·95 | 8·26 | 3·95 | 15,311 | 1,032 | 955 | 283 | 46·71 | 3·14 | 2·91 | 0·86 |
| 126,436 | 179 | 4·60 | 8·53 | 3·66 | 17,519 | 1,108 | 997 | 303 | 50·65 | 3·20 | 2·91 | 0·87 |
| 94,115 | 4,192 | 5·52 | 7·94 | 4·30 | 11,864 | 838 | 660 | 303 | 54·18 | 3·82 | 1·90 | 1·38 |
| 59,820 | 10,084 | 3·98 | 8·12 | 3·07 | 10,379 | 828 | 702 | 266 | 53·32 | 4·25 | 3·60 | 1·35 |
| 31,274 | 10,609 | 3·50 | 5·57 | 1·56 | 13,420 | 1,056 | 811 | 207 | 67·32 | 5·30 | 4·07 | 1·04 |
| 48,306 | 5,075 | 3·34 | 5·38 | 2·17 | 15,651 | 1,012 | 819 | 245 | 70·29 | 4·54 | 3·67 | 1·10 |
| 69,155 | 269 | 5·20 | 7·03 | 3·32 | 12,183 | 868 | 630 | 276 | 58·58 | 4·17 | 3·02 | 1·32 |
| 103,356 | ..... | 5·91 | 7·51 | 4·61 | 11,046 | 1,151 | 146 | 330½ | 49·32 | 5·14 | 0·65 | 1·02 |
| 107,153 | ..... | 4·65 | 8·52 | 3·72 | 12,266 | 1,048 | 732 | 380½ | 42·62 | 3·64 | 2·54 | 1·32 |
| 1,143,587 | 30,827 | 4·75 | 7·80 | 3·54 | 161,068 | 11,925 | 9,053 | 3,451½ | 49·99 | 3·70 | 2·80 | 1·07 |

* Deduct piloting from train mileage in making these averages.

J. UNSWORTH,
*Mechanical Superintendent and Storekeeper.*

## PRINCE EDWARD ISLAND RAILWAY.

### MECHANICAL DEPARTMENT.

C.—MONTHLY STATEMENT of Car Mileage for the year ended 30th June, 1882.

| Months. | First class. | Second class. | Postal, Baggage & Express. | Box, Stock and Hay. | Platform. | Total. |
|---|---|---|---|---|---|---|
| 1881—July | 29,385 | 29,602 | 2,000 | 33,396 | 23,875 | 118,258 |
| August | 32,172 | 31,994 | 1,789 | 37,652 | 26,397 | 130,004 |
| September | 23,740 | 26,667 | 1,244 | 44,933 | 29,624 | 126,208 |
| October | 27,172 | 27,503 | 1,470 | 48,809 | 24,548 | 129,502 |
| November | 24,767 | 28,351 | 1,535 | 59,403 | 12,380 | 126,436 |
| December | 15,619 | 23,846 | 1,106 | 41,317 | 12,227 | 94,115 |
| 1882—January | 14,664 | 17,162 | 1,529 | 20,136 | 6,329 | 59,820 |
| February | 8,010 | 9,640 | 735 | 8,975 | 3,914 | 31,274 |
| March | 9,886 | 12,057 | 805 | 13,888 | 11,670 | 48,306 |
| April | 12,518 | 14,588 | 2,654 | 22,333 | 17,062 | 69,155 |
| May | 17,331 | 21,643 | 6,114 | 41,047 | 17,221 | 103,356 |
| June | 25,532 | 27,414 | 4,492 | 38,443 | 11,272 | 107,153 |
| Totals | 240,796 | 270,467 | 25,473 | 410,332 | 196,519 | 1,143,587 |
| Less Ballasting | ..... | 2,713 | ..... | 236 | 22,649 | 25,598 |
| Balance | 240,796 | 267,754 | 25,473 | 410,096 | 173,870 | 1,117,989 |

J. UNSWORTH,
*Mechanical Superintendent and Storekeeper.*

## PRINCE EDWARD ISLAND RAILWAY.

### MECHANICAL DEPARTMENT.

D—STATEMENT showing the number of Locomotives and the various classes of Cars on hand, 1st July, 1881 and 1882.

| Particulars. | Locomotives. | Classification. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1st Class. | 2nd Class. | Postal, Baggage & Express. | Box and Stock. | Platform. | Vans. | Pay Car. | Total. |
| On hand, 1st July, 1881 | 19 | 14 | 12 | 2 | 150 | 100 | 3 | 1 | 282 |
| Condemned during the year | 6 | ..... | ..... | ..... | 6 | 5 | ..... | ..... | 11 |
| Serviceable | 13 | 14 | 12 | 2 | 144 | 95 | 3 | 1 | 271 |
| Purchased during the year | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 |
| Rebuilt during the year | ..... | ..... | ..... | ..... | 6 | 5 | ..... | ..... | 11 |
| Total Stock, 1st July, 1882 | 15 | 14 | 12 | 2 | 150 | 100 | 3 | 1 | 282 |

J. UNSWORTH,
*Mechanical Superintendent and Storekeeper.*

# PRINCE EDWARD ISLAND RAILWAY.

## Mechanical Department.

E.—Comparative Statement of the Expenses of the Mechanical Department, for the Years ended 30th June, 1881 and 1882.

| | 1882. | 1881. |
|---|---|---|
| The miles run by trains were | 253,185 | 255,353 |
| do engines were | 317,194 | 314,918 |
| do cars were | 1,117,989 | 1,122,419 |
| do snow ploughs were | 30,827 | 30,310 |
| | $ cts. | $ cts. |
| The cost of locomotive power was | 66,996 23 | 45,025 92 |
| do repairs to cars was | 16,872 71 | 12,587 92 |
| do labor, oil and waste for packing was | 850 74 | 643 28 |
| do repairs to passenger cars was | 10,984 41 | 6,762 00 |
| do do postal, express and baggage cars was | 506 05 | 800 51 |
| do do freight cars and vans was | 5,382 25 | 5,025 41 |
| The cost of locomotive power per 100 miles run by trains was | 26 46 | 17 63 |
| do do do engines was | 21 12 | 14 29 |
| do do do cars was | 5 99 | 4 01 |
| The cost of repairs to cars per 100 miles run by trains was | 6 66 | 4 93 |
| do do do engines was | 5 31 | 3 99 |
| do do do cars was | 1 50 | 1 12 |
| The cost of labor, oil and waste for packing per 100 miles run by trains was | 0 33 | 0 25 |
| do do do do engines was | 0 26 | 0 20 |
| do do do do cars was | 0 08 | 0 05 |
| Repairs to passenger cars per 100 miles run by trains | 4 33 | 2 64 |
| do postal, express and baggage cars | 0 20 | 0 31 |
| do freight cars and vans | 2 12 | 1 96 |

J. UNSWORTH,
*Mechanical Superintendent and Storekeeper.*

## No. 1.—PRINCE EDWARD ISLAND RAILWAY.

### Capital Account.

| Dr. | | | | | Cr. |
|---|---|---|---|---|---|
| 1881. | | $ cts. | 1881. | | $ cts. |
| June 30..... | To cost of Road and Equipment to date..... ..... | 3,446,588 57 | June 30..... | By Dominion of Canada.. ..... | 3,466,588 57 |
| 1882. | | | 1882. | | |
| June 30..... | To Expenditure, year ended 30th June, 1882, on Extension of Railway at Souris, Land Damages and Buildings..... ..... | 402 03 | June 30..... | By Dominion of Canada ..... ..... | 402 03 |
| | | 3,466,990 60 | | | 3,466,990 60 |

W. T. S. HUGGAN,
*Accountant and Auditor.*

Charlottetown, P.E.I., 30th June, 1882.

## No. 2.—PRINCE EDWARD ISLAND RAILWAY.

### Revenue Account for Year ended 30th June, 1882.

| Previous Year. | Expenditure. | | Year ended 30th June, 1882. | Previous Year. | Earnings. | Year ended 30th June, 1882. |
|---|---|---|---|---|---|---|
| $ cts. | | | $ cts. | $ cts. | | $ cts. |
| 45,025 92 | Locomotive Power | per Abstract 1..... | 66,996 33 | 57,188 30 | Passenger Traffic ..... | 63,949 26 |
| 25,823 34 | Car Expenses | do 2 ..... | 30,844 32 | 65,326 13 | Freight Traffic..... | 64,776 28 |
| 98,301 59 | Maintenance Way and Works | do 3 .... | 92,735 10 | 8,617 00 | Mails and Sundries..... | 8,542 00 |
| 22,165 99 | Station Expenses | do 4..... | 23,560 16 | | | 137,267 54 |
| 11,806 04 | General Charges | do 5..... | 14,124 06 | 131,131 43 | Total Earnings..... | |
| | | | | 71,991 45 | Balance..... | 90,992 43 |
| 203,122 88 | Totals ..... | | 228,259 97 | 203,122 88 | Totals ..... | 228,259 97 |

W. T. S. HUGGAN.
*Accountant and Auditor.*

Charlottetown, P.E.I., 30th June, 1881.

## No. 3.—PRINCE EDWARD ISLAND RAILWAY.

### Locomotive Power. (Abstract No. 1.)

| Previous Year. | Details. | Year ended 30th June, 1882. |
|---|---|---|
| $ cts. | | $ cts. |
| 1,329 29 | Mechanical Superintendent's salary, Clerks, Office and Travelling expenses | 1,711 36 |
| 12,351 15 | Wages of Drivers, Firemen and Cleaners | 13,523 91 |
| 11,909 86 | Fuel | 17,918 77 |
| 1,098 19 | Oil, Tallow, Waste and Small stores | 1,716 56 |
| 12,860 86 | Repairs to Engines, Tenders and Engine Tools | 26,562 01 |
| 4,364 36 | Water, including Pump and Tank repairs | 3,959 19 |
| 1,112 21 | Miscellaneous | 1,604 53 |
| 45,025 92 | Totals | 66,996 33 |

W. T. S. HUGGAN,
*Accountant and Auditor.*

Charlottetown, P.E.I., 30th June, 1882.

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## No. 4.—PRINCE EDWARD ISLAND RAILWAY.

### Car Expenses. (Abstract No. 2.)

| Previous Year. | —— | Year ended 30th June, 1882. |
|---|---|---|
| $ cts. | | $ cts. |
| 6,762 00 | Repairs to passenger cars | 10,984 41 |
| 800 51 | do postal and baggage cars | 506 05 |
| 5,025 41 | do freight cars and vans | 5,382 25 |
| 9,725 87 | Wages of Conductors, Train Baggagemen and Brakesmen | 10,221 25 |
| 643 28 | Oil and waste for packing | 850 74 |
| 2,455 75 | Small stores and fuel | 2,578 48 |
| 410 52 | Miscellaneous | 321 14 |
| 25,823 34 | Totals | 30,844 32 |

W. T. S. HUGGAN,
*Accountant and Auditor.*

Charlottetown, P.E.I., 30th June, 1882.

## No. 5.—PRINCE EDWARD ISLAND RAILWAY.

### Maintenance of Way and Works.—(Abstract No. 3.)

| Previous Year. | Details. | Year ended 30th June 1882. |
|---|---|---|
| $ cts. | | $ cts. |
| 688 36 | Engineer's salary, Clerks, Office and Travelling expenses | 350 43 |
| 31,976 31 | Wages in repairing road way, Fences and Semaphores | 31,940 98 |
| 24,396 12 | Rails, Chairs and Spikes | 1,249 64 |
| 15,411 79 | Sleepers | 20,771 00 |
| 5,029 16 | Timber and Lumber for repairs to bridge, Cattle guards, Fences, etc | 7,933 14 |
| 501 26 | Repairs to Wharves | 519 19 |
| 5,513 14 | do Buildings | 11,724 68 |
| 3,359 23 | do Snow-ploughs, Flangers and Tools | 3,623 86 |
| 11,426 22 | Clearing ice and snow | 14,622 18 |
| 98,301 59 | Totals | 92,735 10 |

W. T. S. HUGGAN,
*Accountant and Auditor.*

Charlottetown, P.E.I., 30th June, 1882.

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## No. 6.—PRINCE EDWARD ISLAND RAILWAY.

### Station Expenses—(Abstract No. 4.)

| Previous Year. | Details. | Year ended 30th June, 1882. |
|---|---|---|
| $ cts. | | $ cts. |
| 16,146 02 | Salaries and wages of Station Masters, Agents, Clerks, Telegraph Operators, Station Baggagemen, Yardmasters, Switchmen, Watchmen and Labourers | 17,445 81 |
| 6,019 97 | Fuel, Oil, Light, Stationery, Tickets and other incidental expenses | 6,114 35 |
| ..... | Miscellaneous | ..... |
| 22,165 99 | Totals | 23,560 16 |

W. T. S. HUGGAN,
*Accountant and Auditor.*

Charlottetown, P.E.I., 30th June, 188

8—5

## No. 7.—PRINCE EDWARD ISLAND RAILWAY.

### General Charges.—(Abstract No. 5.)

| Previous Year. | Details. | Year ended 30th June, 1882. |
|---|---|---|
| $ cts. | | $ cts. |
| 5,141 38 | Superintendent's and Train Despatcher's salaries, Clerks, Office and Travelling expenses | 5,119 92 |
| 4,872 82 | Accountant and Auditor's, Paymaster's and Cashier's salaries, Clerks, Office and Travelling expenses | 5,489 03 |
| 558 65 | Advertising | 289 60 |
| 495 78 | Damages to men, animals and goods | 1,888 81 |
| 304 13 | Telegraph men (not including pay to Operators) | 444 94 |
| 433 28 | Miscellaneous | 891 76 |
| 11,806 04 | Totals. | 14,124 06 |

W. T. S. HUGGAN,
*Accountant and Auditor.*

Charlottetown, P.E.I., 30th June, 1882.

## No. 8.—PRINCE EDWARD ISLAND RAILWAY.

### Monthly Statement of Earnings.

| Months. | Passenger Traffic. | Freight Traffic. | Mails and Sundries. | Total Receipts. |
|---|---|---|---|---|
| 1881. | $ cts. | $ cts. | $ cts. | $ cts. |
| July | 7,979 22 | 5,165 90 | 707 00 | 13,852 12 |
| August | 7,760 20 | 5,288 79 | 711 00 | 13,759 99 |
| September | 5,192 35 | 5,472 40 | 713 00 | 11,377 75 |
| October | 7,288 20 | 7,337 79 | 706 00 | 15,331 99 |
| November | 6,020 43 | 11,040 84 | 707 00 | 17,768 27 |
| December | 5,716 00 | 7,497 02 | 704 00 | 13,917 02 |
| 1882. | | | | |
| January | 3,728 35 | 2,153 95 | 702 00 | 6,584 30 |
| February | 1,968 07 | 940 94 | 752 00 | 3,661 01 |
| March | 2,367 23 | 2,299 55 | 704 00 | 5,370 78 |
| April | 3,797 65 | 4,230 09 | 702 00 | 8,729 74 |
| May | 6,628 13 | 6,881 83 | 702 00 | 14,211 96 |
| June | 5,503 43 | 6,467 18 | 732 00 | 12,702 61 |
| Totals | 63,949 26 | 64,776 28 | 8,542 00 | 137,267 54 |

W. T. S. HUGGAN,
*Accountant and Auditor.*

Charlottetown, P.E.I., 30th June, 1882.

## No. 9.—PRINCE EDWARD ISLAND RAILWAY.

STATEMENT of General Store Account, Year ended 30th June, 1882.

| 1881. | Dr. | $ cts. | $ cts. |
|---|---|---|---|
| ane 30... | To balance brought forward.. | ..... ..... | 65,658 08 |
| 1882. | | | |
| une 30... | To Purchases during the year | 64,843 28 | |
| | Charges from other Departments | 24,184 27 | |
| | Pay-rolls | 3,416 14 | 92,443 69 |
| | | | 158,101 77 |
| 1882. | Cr. | | |
| une 30... | By Issues during the year | ..... ..... | 98,651 24 |
| | Balance. { Ordinary stores $41,661 48 / Rails and fastenings 17,789 05 } | ..... | 59,450 53 |

W. T. S. HUGGAN,
*Accountant and Auditor.*

CHARLOTTETOWN, P.E.I., 30th June, 1882.

## No. 10.—PRINCE EDWARD ISLAND RAILWAY.

DR. GENERAL BALANCE. CR.

| | $ cts. | | $ cts. |
|---|---|---|---|
| General Stores | 59,450 53 | Dominion Account | 60,199 97 |
| Cash | 769 54 | Accident Insurance | 2,436 72 |
| Stations | 1,186 41 | Through Ticket Ledger | 1,791 22 |
| Post Office Department | 2,016 00 | | |
| Militia Department | 13 35 | | |
| Suspense Account | 992 08 | | |
| Total | 64,427 91 | Total | 64,427 91 |



W. T. S. HUGGAN,
*Accountant and Auditor.*

CHARLOTTETOWN, P.E.I., 30th June, 1882.

## No. 11.—PRINCE EDWARD ISLAND RAILWAY.

COMPARATIVE STATEMENT of Averages, for Year ended 30th June, 1882.

| Details. | | 1882. | 1881. |
|---|---|---|---|
| eage of railway open | | 198½ | 198½ |
| rine mileage | | 317,194 | 314,918 |
| in do | | 253,185 | 255,353 |
| : do | | 1,117,989 | 1,122,419 |
| ceipts per engine mile | Cents | 43·27 | 41·64 |
| do mile of railway | $ | 691·52 | 660·61 |
| rcentage of passenger earnings to gross receipts | | 46·58 | 43 61 |
| do freight do do | | 47·20 | 49·82 |
| do other do do | | 6·22 | 6·57 |
| penses per engine mile :— | | | |
| Drivers', Firemen's and Cleaners' wages | | 4·26 | 3·92 |
| Fuel | | 5·65 | 3·78 |
| Oil, tallow, waste and small stores | | ·54 | ·35 |
| Repairs to engines | | 8·37 | 4·09 |
| Water and tank repairs | | 1·25 | 1·39 |
| Miscellaneous | | ·51 | ·35 |
| Total | | 20·58 | 13·88 |
| echanical Superintendent's salary, office and travelling expenses | | ·54 | ·42 |
| | Cents | 21·12 | 14·30 |
| ocomotive power per engine mile | | 21·12 | 14·30 |
| ar expeuses do | | 9·72 | 8·20 |
| aintenance way and works, per engine mile | | 29·24 | 31·21 |
| tation expenses do | | 7·43 | 7·04 |
| eneral charges do | | 4·45 | 3·75 |
| Total | Cents | 71·96 | 64·50 |
| ocomotive power, per train mile | | 26 46 | 17·63 |
| ar expenses do | | 12 18 | 10·11 |
| aintenance way and works, per train mile | | 36 63 | 38·50 |
| tation expenses do | | 9 31 | 8·68 |
| eneral charges do | | 5 58 | 4·62 |
| Total | Cents | 90 16 | 79·54 |
| Working expenses per mile of railway | $ | 1,144 89 | 1,023 29 |

W. T. S. HUGGAN,
*Accountant and Auditor.*

CHARLOTTETOWN, P.E.I., 30th June, 1882.

# PRINCE EDWARD ISLAND RAILWAY.

## DESCRIPTIVE STATEMENT of Freight Earnings for the Year ended 30th June, 1882.

| Description of Freight. | Quantities. | | Tons. | | Amounts. | |
|---|---|---|---|---|---|---|
| | 1881. | 1882. | 1881. | 1882. | 1881. | 1882. |
| | | | | | $ cts. | $ cts. |
| Oats.....Bush. | 412,526 | 473,859 | 7,029 | 8,056 | 8,789 02 | 10,091 54 |
| Wheat and other Grain..... do | 5,353 | 4,177 | 151 | 123 | 245 73 | 205 97 |
| Potatoes and Roots..... do | 105,223 | 156,664 | 3,159 | 4,709 | 2,037 51 | 4,382 72 |
| Flour..... Brls. | 15,939 | 24,819 | 1,543 | 2,434 | 2,743 01 | 3,954 46 |
| Mackerel ..... do | 20,387 | 9,943 | 3,059 | 1,614 | 3,576 23 | 1,770 33 |
| Herring..... do | 2,078 | 1,437 | 312 | 215 | 442 49 | 323 21 |
| Cod and other Fish..... do | ..... | ..... | 608 | 165 | 1,373 19 | 306 89 |
| Canned Fish..... Cases | ..... | 21,480 | ..... | 788 | ..... | 1,596 86 |
| Oysters..... Brls. | 1,929 | 1,375 | 198 | 138 | 280 46 | 178 06 |
| Fish Barrels ..... No. | 24,817 | 8,557 | 468 | 499 | 1,170 45 | 459 19 |
| Timber, hewn and unhewn.....C. Ft. | 75,397 | 115,159 | 2,187 | 2,919 | 1,767 43 | 1,905 90 |
| Lumber, sawn..... .....S. Ft. | 2,901,314 | 3,319,675 | 3,645 | 4,270 | 2,980 63 | 3,111 95 |
| Shingles..... | 4,544 | 6,631 | 796 | 994 | 873 15 | 1,020 86 |
| Cordwood and Tanbark.....Cord. | 1,945 | 2,166 | 3,489 | 3,997 | 1,981 03 | 2,252 15 |
| Shingle, Timber, &c..... .....Cars. | 98 | 55 | 925 | 534 | 892 30 | 481 95 |
| Coal..... do | 123 | 133 | 1,053 | 1,205 | 717 62 | 689 09 |
| Lime..... Brls. | 1,871 | 1,734 | 204 | 190 | 220 58 | 246 24 |
| Limestone..... .....Cars. | 107 | 165 | 968 | 1,441 | 370 92 | 435 84 |
| Brick and Building Stone..... do | 83 | 31 | 755 | 274 | 465 37 | 157 65 |
| Mussel Mud..... ..... do | 63 | 124 | 574 | 1,172 | 170 00 | 393 62 |
| Salt..... | ..... | ..... | 1,571 | 804 | 2,005 21 | 837 60 |
| Live Stock..... No. | 6,320 | 4,716 | 863 | 789 | 1,949 03 | 1,718 33 |
| Pressed Hay ..... | ..... | ..... | 433 | 537 | 418 41 | 548 02 |
| Fresh Beef..... | ..... | ..... | 83 | 70 | 295 48 | 167 69 |
| Pork, in carcass..... | ..... | ..... | 248 | 288 | 710 61 | 820 45 |
| do in barrels..... Brls. | 3,083 | 1,070 | 462 | 159 | 798 78 | 237 33 |
| Butter..... | ..... | ..... | 37 | 39 | 143 49 | 127 16 |
| Eggs.....Packages. | 16,369 | 19,609 | 607 | 711 | 1,583 50 | 1,772 58 |
| Merchandise..... | ..... | ..... | 9,909 | 9,182 | 25,486 10 | 23,669 54 |
| Wharfage, Storage, &c..... ..... | ..... | ..... | ..... | ..... | 838 40 | 913 10 |
| | | | 45,336 | 48,315 | 65,326 13 | 64,776 28 |

### STATEMENT OF PASSENGER TRAFFIC.

| | 1881. | 1882. |
|---|---|---|
| Total Number carried..... ..... | 102,937 00 | 118,436 00 |
| do Receipts..... | $ 57,188 30 | $ 63,949 26 |
| Receipt for each Passenger..... | 55·56 | 53·99 |

## WINDSOR BRANCH RAILWAY.

RAILWAY OFFICE,
MONCTON, N. B., 10th October, 1882.

SIR,—I have the honor to transmit the following statements showing the results f the working of the Windsor Branch Railway for the year which ended 30th June, 882:—

No. 1.—Revenue Account.
No. 2.—Maintenance of Way and Works.
No. 3.—General Balance.
No. 4.—Statement of Monthly Earnings.

I also send you the Report of the Engineer on the condition of the permanent vay and works.

This line, thirty-two miles in length, was operated during the year by the Wind- sor and Annapolis Railway Company on the same terms as last year, the Company being allowed to retain two-thirds of the gross earnings, the balance, one-third, being paid over to the Government, the latter maintaining the line.

The gross earnings accruing to the Government amounted to $21,053.19.

The expenditure for maintenance of way and works was $10,934.89.

The permanent way and all the works belonging to the railway have been main- tained in good working order.

A large number of new sleepers were put in the track.

Extensive repairs were made to the masonry and superstructure of several bridges, and a number of culverts and cattle guards were rebuilt.

A considerable length of new fence was built, and the old fences were repaired.

A large cotton factory has been erected at Windsor, and a siding 1,000 feet long has been laid to it.

It is gratifying to find that the traffic of the line has increased.

I have the honor to be, Sir,
Your obedient servant,

D. POTTINGER,
*Chief Superintendent.*

C. SCHREIBER, Esq ,
Ch ef Engineer and General Manager Government Railways,
Ottawa.

## No. 1.—WINDSOR BRANCH RAILWAY.

REVENUE ACCOUNT, year ending 30th June, 1882.

| Previous Year. | Expenditure. | Year ending 30th June, 1882. | Previous Year. | Receipts. | Year ending 30th June, 1882. |
|---|---|---|---|---|---|
| $ cts. | | $ cts. | $ cts. | | $ cts. |
| 20,502 26 | Maintenance of Way and Works..... (Abstract No. 1.) | 10,934 89 | 7,065 64 | Passenger Traffic ..... | 7,865 31 |
| | | | 13,191 02 | Freight Traffic ..... | 12,228 01 |
| | | | 959 87 | Mails..... | 959 87 |
| | | | 21,216 53 | | |
| | | | 3,753 69 | Deduct Traffic between Halifax and Windsor Junction for 7 months ending 30th June, 1880, over-credited previous year. | |
| | | | 17,462 84 | | |
| | Balance, 1882..... | 10,118 30 | 3,039 42 | Balance, 1881. | |
| 20,502 26 | | 21,053 19 | 20,502 26 | | 21,053 19 |

R. B. BOGGS,
*Accountant, W.B.R.*

MONCTON, N.B., 30th June, 1882.

## No. 2.—WINDSOR BRANCH RAILWAY.

(Abstract No. 1.)—Maintenance of Ways and Works.

| Previous Year ending 30th June, 1882. | Particulars. | Year ending 30th June, 1882. |
|---|---|---|
| $ cts. | | $ cts. |
| 1,125 96 | Accountant's office and expenses | 1,104 63 |
| 6,355 15 | Repairs of track | 5,592 99 |
| 1,969 37 | Rails and fastenings | 397 00 |
| 2,496 80 | Sleepers | 2,834 03 |
| 7 15 | Switch locks | 12 90 |
| 1,442 21 | Bridges | 678 12 |
| 6 14 | Signals | 15 42 |
| 539 51 | Culverts and cattle guards | 357 71 |
| 5,287 51 | Buildings and platforms | 242 55 |
| 338 07 | Fences | 439 05 |
| 134 96 | Hand cars and trollies | 8 05 |
| 161 53 | Tools and repairs | 235 49 |
| 508 90 | Removing snow and ice | 949 50 |
| 129 00 | Miscellaneous | 232 11 |
| 20,502 26 | | 13,099 55 |
| | Deduct old rails sold Intercolonial Old Material Account | 2,164 66 |
| | | 10,934 89 |

R. B. BOGGS,
*Accountant, W. B. R.*

Moncton, N.B., 30th June, 1882.

## No. 3.—WINDSOR BRANCH RAILWAY.

Dr. General Balance. Cr.

| 1882. | | $ cts. | 1882. | | $ cts. |
|---|---|---|---|---|---|
| June 30. | Windsor and Annapolis Railway | 2,509 11 | June 30. | Intercolonial Railway | 1,912 75 |
| | Stores | 4,748 26 | | Dominion Account | 5,344 62 |
| | | 7,257 37 | | | 7,257 37 |

R. B. BOGGS,
*Accountant, W. B. R.*

Moncton, N.B., 30th June, 1882.

## No. 4.—WINDSOR BRANCH RAILWAY.

MONTHLY STATEMENT of Receipts—One-third Earnings.

| Month. | Passengers. | Mails. | Freights. | Total. |
|---|---|---|---|---|
| 1881. | $ cts. | $ cts. | $ cts. | $ cts. |
| July | 740 26 | 80 75 | 890 40 | 1,711 41 |
| August | 838 17 | 80 76 | 766 68 | 1,685 61 |
| September | 1,521 12 | 80 76 | 1,230 79 | 2,832 67 |
| October | 673 43 | 80 75 | 1,336 40 | 2,090 58 |
| November | 513 18 | 80 76 | 1,567 58 | 2,161 52 |
| December | 615 69 | 80 76 | 1,082 50 | 1,778 95 |
| 1882. | | | | |
| January | 390 00 | 78 71 | 758 71 | 1,227 42 |
| February | 298 18 | 78 71 | 518 23 | 895 12 |
| March | 415 20 | 78 71 | 1,023 80 | 1,517 71 |
| April | 515 69 | 79 74 | 990 42 | 1,585 85 |
| May | 559 12 | 79 73 | 917 58 | 1,556 43 |
| June | 785 27 | 79 73 | 1,144 92 | 2,009 92 |
| Totals | 7,865 31 | 959 87 | 12,228 01 | 21,053 19 |

(Signed) R. B. BOGGS,
*Accountant, Windsor Branch Railway.*

MONCTON, N.B., 30th June, 1882.

ENGINEER'S OFFICE,
MONCTON, N.B., 1st August, 1882.

SIR,—I have the honor to submit the following Report on the maintenance of the Windsor Branch for the year ending 30th June, 1882.

The mileage is the same as reported last year.

During the year 8,100 sleepers were renewed.

A siding 1,000 feet long was laid to the new cotton factory at Windsor.

Extensive repairs were made to the St. Croix Bridge. The timber floor was entirely renewed, and the masonry, piers and abutments were overhauled and repointed.

The masonry of Carroll's Bridge also was overhauled and repointed.

Two stone culverts near Windsor and a pair of stone cattle guards at Three Mile Plains were entirely rebuilt.

Extensive repairs are now being made to a wooden bridge at Jordan's Brook.

A very considerable amount of fencing has been done during the year, and much more will be required next year.

The necessary repairs have been made to all station buildings and platforms.

The scales at Mount Uniacke, Ellershouse and Newport, were thoroughly overhauled and repaired.

The track is in good working order. There was not a wheel off the track during the year.

I have the honor to be, Sir,
Your obedient servant,

P. S. ARCHIBALD,
*Engineer.*

C. SCHREIBER, Esq.,
Chief Engineer and General Manager Government Railways,
Ottawa.

# APPENDIX No. 5.

DEPARTMENT OF RAILWAYS AND CANALS,
SUPERINTENDING ENGINEER'S OFFICE,
MONTREAL, 30th October, 1882

A. P. BRADLEY, Secretary,
Department of Railways and Canals,
Ottawa.

SIR,—I have the honor to submit the Annual Report on the works under my charge, for the fiscal year which ended on 30th June, 1882.

These works are the Lachine Canal and the Beauharnois Canal, on the St. Lawrence River; and the Chambly Canal, and St. Ours Lock and Dam, on the Richelieu River.

They have been maintained in an efficient state, and no accident occurred on them to interrupt the navigation during the fiscal year.

Statements are appended of the amounts collected on each canal for fines, damages, etc., with monthly returns of the highest and lowest water on the mitre sills of both entrance locks on each canal, and of the upper and lower sills of St. Ours Lock.

## LACHINE CANAL.

The trade through this canal has not been interrupted at any time during the season of navigation.

The canal was closed by ice on the 1st December, 1881, and again opened for traffic on 25th April, 1882. It was unwatered for repairs from the 17th to the 24th April.

The work done by the Superintendent during the fiscal year may be classed under two headings, viz:—

### "GENERAL REPAIRS" AND "CONSTRUCTION."

The "Repairs" comprised the maintenance of the canal and all the structures connected with it in good order; and the work done and chargeable to "Construction" was in connection with the enlargement of the canal, such as fitting up working machinery for valves on new gates; building bridge abutments and stationary bridges over head and tail race of old supply weir at Lachine; improving off-take drains; levelling spoil banks for the purpose of unloading lumber, cordwood, etc., thereon; grading and covering with gravel the spaces between the old and new locks; placing roller frames in chain wells, and putting up snubbing posts at new locks, Nos. 2, 3 and 4.

*Old Lock No. 1, at lower entrance.*

The gates of this lock were stripped of all their top rigging last fall, and weighted down to prevent them from being displaced by the action of the high water and ice during the spring flood. This lock was refitted early in April. A new fender post was placed at the upper end on north side, and the hand rails on lock gates were

straightened and repaired. Three new roller frames were placed in the chain wells instead of old stationary rollers which had become useless.

*Old Lock No.* 2.

The masonry at the upper gates of this lock and at the north lower gate had been shaken by the accident of 29th June, 1880, and leaked badly. These gates were removed last spring and the masonry in recesses and hollow quoins thoroughly pointed. A new fender post was placed at the upper end on north side; two new roller frames were furnished, the hand rails and machinery put in good order, and two new suspension anchor timbers placed at the upper gate.

*Old Lock No.* 3.—(*St. Gabriel.*)

This lock received new working chains for the lower gates, one new chain well roller frame, thorough repairs to the top rigging of gates, and new anchor timbers for gate suspension at the lower end.

*Old Lock No.* 4.—(*Cote St. Paul.*)

New face binders were placed on all the gates of this lock. New working chains were furnished for the lower gates, the hand rails and other top rigging received repairs, and new anchor timbers were placed at lower gates.

*Old Lock No.* 5.—(*Lachine.*)

The two lower gates of this lock were taken out and replaced by a spare pair. The old gates were hauled out on the bank and thoroughly repaired. The extremely low stage of the water last fall was taken advantage of, and all the masonry above the gates of lock and weir at this place was thoroughly pointed. This lock also received new anchor timbers for the lower gates.

*New Locks Nos.* 1 *and* 2.

These locks were fitted up this spring, and furnished with apparatus for working the gate valves. Roller frames were placed in the chain wells, and Lock No. 2 received oak snubbing posts.

Both of these locks are now ready for use.

*New Locks Nos.* 3, 4 *and* 5.

All the gates of these locks have been stepped by the contractor, and will be put in working order as soon as the machinery for operating the valves can be had from the "Caledonia Iron Works," where it is being made.

Roller frames for the working chains were fitted in the wells, and snubbing posts placed on the banks. A large amount of expense was incurred by the Department in cleaning the recesses of these locks by divers before the gates could be stepped.

BRIDGES.

The traffic over these bridges is very heavy, and requires to have the planking renewed at least once a year, which was done throughout except on the St. Gabriel Bridge. A new towing path bridge, 50 feet long by 12 feet in width, was built over the tail race of the old weir at Lachine, and a new road bridge over its head race. The latter is to form a connection between the present swing bridge over the old lock and the one to be built at the upper end of the new lock. This proposed swing bridge is much required, as the two temporary bridges now in use are not considered safe for heavy traffic.

### Weirs.

The masonry of all the weirs was pointed where found necessary, and the gates and machinery put in good working order in the spring.

### Wharves.

The wharves and basins received a considerable amount of repairs, and are now in fair order; but the wharf accommodation is rather limited compared with the amount of business done, and a good deal of inconvenience is experienced on this account by the people in the trade.

### Flour Sheds.

The flooring in these sheds has been renewed in many places, and other minor repairs done to them. The sheet-iron covering of the roof of No. 1 Shed, at Basin No. 2, is in very bad condition; the work of repairing it will be commenced immediately

### Piers and Booms.

The long mooring pier at the lower end of Lock No. 4 was rebuilt from the water line. The lower end of the mooring pier on the south side, below Lock No. 5, was renewed for a length of 30 feet; and five of the mooring piers at the timber basin were renewed from low water mark. The corners of all these piers were sheeted with tamarack plank and bound with iron straps.

Eight of the longest booms in the timber basin had become so much water soaked that they would no longer float. They were, therefore, hauled out on the bank of the old canal last fall, and, having dried for some time, received new side pieces, and their bottoms were covered with dry sawed cedar timber fastened with iron bolts. This treatment answered the purpose intended, for when the booms were launched in the spring they floated fully as well as when they were first built. Several of the other booms received new head blocks, cross bolts, &c.

The quantity of timber which arrived at Lachine this season was so much greater than in former years, that it largely exceeded the capacity of the timber basin to receive it; and the rafts for which there was no room were moored along the front of the town of Lachine. In this position they not only prevented access to the wharves, but were liable to be broken up by storms, and thus endanger the navigation of the canal, by obstructing its upper entrance with loose timber. It was therefore urgently necessary to provide a place of safety for these rafts. The difficulty was overcome and danger to navigation averted by connecting the detached guide piers, in the new entrance to Section No. 11, to each other and to the old wing dam by temporary booms. This forms a safe basin, capable of containing over a half a million feet of timber which has been filled with the timber previously exposed. The dues collected for boomage on this timber for one year will fully cover the expenses incurred.

### Banks, Roads, &c.

The towing paths, slopes, walls, and off-take drains have all been kept in good order; and the roads, ramps, slips, &c., leading to the different bridges and wharves, have from time to time, been repaired and kept in a proper and safe condition. The River St. Pierre was also thoroughly cleared of all weeds and other impediments; and the thistles were cut at the proper season on the canal banks and the adjoining Government ground. These two latter items of work have to be done annually and cost a good deal of money. All the old and decayed snubbing posts on the whole line of the canal have been renewed.

### Scows.

The two repair scows were hauled out last fall. One of them received a thorough going over and is now as good as new. The other, however, is not worth repairing and will be broken up. The timber to build a new one is now sawn and will be prepared during spare time.

### Buildings, Fences, &c.

The fences surrounding the different weirs, and on the line of the old canal, in front of the town of Lachine, have been repaired and pointed throughout. The dwelling houses furnished to some of the employés have received ordinary repairs from time to time. Some of these houses are in a poor condition, but as the ground on which they stand will soon be required for additional basins, it was not considered advisable to expend much money on them. The building containing the store house, carpenter's shop, and storeman and messenger's dwelling received such repairs as were necessary, and it is in fair order.

As it was found difficult and expensive to get the necessary iron work for the canal done when required, owing to the great pressure of business in the different iron working shops, a cheap wooden building was erected in the yard in rear of the carpenter's shop and fitted up with a blacksmith's forge, a small turning lathe, a drilling machine, vices, &c. Nearly all the iron work required is now being done in this building by day's work in a cheaper and more satisfactory manner than heretofore.

### Old Wing Dam at Lachine.

A considerable amount of repair was done to this structure last fall. The masonry of this dam is old and is easily displaced by passing vessels, rafts, &c., and requires a good deal of attention.

### Gates for the New Locks.

This contract embraces the construction of thirteen pairs of gates. Ten pairs of these were to be placed in the new locks, and three pairs to be held in reserve as spare gates. The Government supplied the timber, and the contractors Messrs. O'Brien, Gordon and Bergin, dressed, framed and put it together, and furnished all the cast iron, wrought iron, and brass work required.

The gates for the two lower locks are 31 feet 7 inches in height, and for the other three locks they are 23 feet 4 inches, 23 feet 2 inches, and 21 feet 1 inch respectively. They are built on the solid timber plan; each of the gates for Locks Nos. 1 and 2 having two wrought iron girders, and those for the other three locks, one each.

During the month of July, 1881, the gates of Locks Nos. 1 and 2 were launched and stepped in their places.

On August 1st, those of Lock No. 1 were closed and worked to allow the steamship "Campana" to pass up into Basin No. 1, and on the next day those of Lock No. 2 were similarly closed and worked, and this steamship passed up to Tate's Graving Dock, through Basin No. 2. This was the first vessel which used any of the new locks.

On November 23rd and 24th the gates for Lock No. 3 were launched, but winter setting in suddenly immediately after, they were allowed to remain in Wellington Basin until May last, when they were towed to St. Gabriel Lock, and shortly after stepped and closed. During the months of May and June the gates for Locks 4 and 5 were launched, towed to their respective locks and stepped.

At the close of the fiscal year the three pairs of spare gates were nearly completed, and the gate hangings and top fixtures of those in position were being mounted.

At this date (October 26th) the work under this contract may be considered as practically finished.

NEW WORKS OF ENLARGEMENT—MONTREAL DIVISION.

This division extending upwards from Montreal harbor to Côte St. Paul, includes Sections Nos. 1, 2, 3, 4, 5, 6 and 7 and is $4\frac{866}{1000}$ miles in length.

The works on these sections had all been completed at date of my last Report, and the contractors finally settled with, except for Sections 6 and 7. During the fiscal year a settlement was made with Messrs. Wm. Davis and Sons, who had the contract for these two sections.

Everything in connection with these contracts having thus been closed, the resident Assistant Engineer and such of his staff as had been still retained were paid off on 1st of May last.

LACHINE DIVISION.

This division is under the charge of H. H. Killaly, Esq., as Resident Assistant Engineer. It extends from Côte St. Paul to Lachine, a distance of four miles, and comprised Sections Nos. 8, 9, 10 and 11.

*Sections Nos.* 8, 9 *and* 10.

As stated in my Report for last year, work upon these three sections had been completed, and the final estimates prepared, but no settlement has yet been made with the contractors.

*Section No.* 11.

The work consists in the construction of a new entrance channel and harbor at Lachine on the south-east side of the present entrance. This harbor is separated from the river by a pier 6,200 feet in length. For about half its length from the shore this pier is formed of a double range of crib-work, the space between which is lined with sheet piling and filled with puddle. The outside of the old entrance pier is faced with a single row of cribs with sheet piling and puddle. Cross dams being built from one pier to the other, two water-tight basins are formed.

To repair the leaks which occurred in the dam of the double cribbing, and which stopped the work on 15th November, 1880, it was found necessary to place temporary cribs to act as buttresses at those points where the dam showed signs of weakness, and to drive eight-inch piling in the centre of the puddle chamber.

These repairs were commenced 28th July, 1881, and completed 25th of the following month. Excavation in the bottom was begun 30th August, and was carried on without interruption until October 22nd, when all work in the prism of the lower basin was completed. The temporary cribs and pumps were then removed and the basin allowed to fill up.

Before the close of the season of 1881 the walls on pier above Station 416, as well as that on crib-work alongside of old pier, were completed, and the space between the latter and the old pier partly filled up and graded.

A quantity of stone was placed at foot of cribs of upper basin and a small coffer dam formed, inside of which the foundation for pump was laid, well hole completed, and bed plates set. A portion of the double crib-work was also uncovered, and cross ties placed connecting the two rows of cribs.

During the winter months, and until April 28th of the present year, no work was done upon this section.

It having been determined to adopt means, similar to those already successfully used in the lower basin, for strengthening and making sound the remaining upper portion of the section, the contractors were instructed to drive 8 inch sheet piles throughout a considerable portion of the puddle chamber of the new pier.

The present season up to 30th June has been occupied in so doing, as well as in raising the puddle in the different dams to the full height, placing stone at foot of cribbing, completing cross dam at Station 416, moving derricks, repairing and altering pumps and making preparations generally for commencing excavation as the upper section shall have been pumped out.

### Extension of Landing Pier G. T. R. R. Depot, Lachine.

This pier forms the landing place for several lines of mail and other steam boats nning on the Upper St. Lawrence and Ottawa Rivers, and for the railway steam erry from Lachine to Caughnawaga. It was built where it is, at Leishman's Point, cause, owing to the rapidity of the current, ice never formed there, and the wharf uld be used in winter as well as in summer. However, since the construction of e long pier on Section 11, which extends upwards to a point opposite to, and distant 0 feet from the railway wharf, ice forms from one to the other, and destroys the efulness of the railway wharf for winter ferry purposes. Petitions having been ade to the Government for the extension of this wharf up stream for a short dis- nce to a point where it was asserted ice would not form, and it having been found om observations made during several winters that this was the case, Government cided to extend the wharf as requested. Tenders were, therefore, called for its nstruction, and the contract was awarded to Messrs. D. W. Gaherty and Co. on the 6th of March, 1882.

This work consists of the extension of the existing railway pier, up stream on its resent alignment, for a distance of 320 feet. The pier will be formed by placing ribs 30 feet square at intervals of 20 feet. Adjoining the last of these, one of 70 x 40 ill be placed, upon which will be built a sloping ice breaker sheeted with oak timber inches thick.

During the months of May and June, timber sufficient for the construction of the ribwork and superstructure of cribwork, together with a quantity of iron, was elivered, and work was commenced on the 27th of June.

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## BEAUHARNOIS CANAL.

This canal was closed on the 28th of November, 1881, and reopened on the 25th April, 1882. No interruption to the navigation occurred during the fiscal year, and he works have been maintained in a very efficient state. The principal repairs done may be enumerated as follows:—

### Locks and Lock Gates.

Some slight repairs were made to the gates of Locks Nos. 6, 7 and 8. The upper gates of Lock No. 9 and the lower gates of Lock No 12 were raised and adjusted, and binding straps renewed on the latter. Small repairs were also done to the gates of Locks Nos. 13 and 14. The bumping posts were repaired at Locks Nos. 6, 7, 8, 9, 10 and 11, and two new ones were placed at Locks Nos. 6 and 10.

One pair of gates were hauled out of the canal and taken to pieces; such of the material as is suitable will be used again. Two pairs of new gates have been commenced to be built in the workshops.

Two crabs and ten working chains have been renewed at different locks; and a new chain roller and frame put in at Lock No. 9.

### Weirs.

The supply weir at the upper entrance is situated between the guard lock and the main street of Valleyfield. The head race has had a covering of timber and plank over it for many years. From its position it must be either covered or enclosed in some manner. The above mentioned wooden covering having become so much decayed that it required to be entirely renewed, it was thought better instead of doing so to surround it with a permanent fence. The old wooden covering was therefore removed, the side walls rebuilt above the water line, and a plain iron railing formed of cast iron posts and gas tubes placed on the coping of the side walls. This makes

a superior job and has cost but little more than the renewal of the wooden covering would have done.

### Bridges.

The old single track swing bridge over Lock No 14, at Valleyfield, having to be renewed, has been replaced by a new double track bridge. A large quantity of new masonry had to be built and new turning table and track laid for the latter; swing bridge at Lock No 8 was raised and received a new pivot, new track, one cross beam, new floor, &c. A new end post was placed, and part of the floor renewed on the swing bridge over Lock No 7. Ordinary repairs were done to the bridges over Locks Nos. 9, 10 and 12. The bridge over Lock No 11 received extensive repairs, and must be renewed before long. St. Timothy Bridge required some small repairs and had the track partially renewed. This bridge and also those over Locks Nos 7, 8, 9, 10, 12 and 13 received two coats of paint.

New stationary bridges were built over the waste weir at Lock No. 9, and over the head race just above the lock at Valleyfield, on south side of canal. All the other fixed bridges over weirs, raceways, back ditches, &c., were kept in good order, and received such repairs as were required.

The ferry scows and the scow kept for canal repairs, were overhauled, and are in good condition.

### Buildings, Fences, &c.

A new dwelling house has been built for the keeper of ferry No. 1. It is a frame building, 24 feet square, with stone foundation. and is well finished and painted.

The double stone house for the men of Lock No. 14, at Valleyfield, has been reconstructed; the walls raised, a French roof put on, and two back kitchens built. A double shed was also built in rear, and the grounds properly fenced.

The Lockmaster's house, at Lock No. 11, was almost rebuilt. The floors, ceilings, partitions, doors, windows, &c, were renewed and well painted inside and outside.

The Superintendent's house and outbuildings received necessary repairs. This is a boulder stone house, and is about one hundred years old. It is cold, damp and unhealthy, the walls actually crumbling away. It would be cheaper in the end to build a new house for the Superintendent, than to continue repairing the present one. It would also be impossible to re-construct it, as the walls are in such a dilapidated condition that they would be useless for that purpose.

All the other Government buildings were kept in good repair.

A new workshop was built over the waste weir at Lock No. 9. It is a frame building 48 by 80 feet, strongly built, and fitted with sawing, planing and other machinery, operated by water-power obtained from the weir underneath. As all the work for the future will be done under cover and by the aid of this machinery, the result will be, in addition to the comfort of the workmen, a great saving in time and material for the Government.

### Banks, Towing Paths, Roads, &c.

The canal banks have been kept in good repair. The slope wall lining was raised for about one and a-half miles in length. The north bank of the canal above lock No. 7, for a length of 3,100 feet, was raised with good gravel, for a width of 15 feet, and a depth of 12 inches in the centre, and 6 inches at the sides. The slope walls above Lock No. 8, and those of the raceway of the weir at lock No. 9 were rebuilt; and all the other slope walls were repaired where required.

Forty new snubbing posts were placed on the banks and many others taken up and reset.

All the side ditches and discharges, about 14 miles in length, were cleaned. The discharges of the side ditches passing through Valleyfield, about two miles in length, were deepened from 15 to 24 inches, to facilitate the drainage of that town. Part of this excavation was in rock, and had to be blasted. Two small culverts were

placed across the banks to carry off surface water. One of these is on the south side above Lock No. 11, and the other a little above Lock No. 14, on the same side.

The dyke at Hungry Bay, the lower dam at Valleyfield, and that leading to Clarke's Island, received necessary repairs.

Public roads, where they pass on the canal banks, dykes or dams, have been kept in good order. These roads are about 27 miles in length.

Thistles and other weeds were cut on all the canal lands at the proper season, according to law.

### Piers.

Two mooring piers were built on the south side of the lower entrance of the canal. They are 50 x 21 feet each and 15 and 16 feet high, well filled with stone. A small pier has also been placed on the north side, on the lower end of the crib work under water of the old pier, the superstructure of which was carried away by the ice five years ago. This will mark the spot and fend vessels off the submerged portion.

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## CHAMBLY CANAL.

This canal was closed by ice on the 28th November, 1881, and re-opened on 2nd May, 1882. There was no interruption to the trade during the season of navigation. A large amount of work done, chargeable to income, is reported on under that head.

### Repairs.

The ordinary repairs executed by the Superintendent during the fiscal year, may be summarized as follows:—

*Locks.*

The banks were trimmed and covered with gravel on both sides of all the locks from No. 2 to No. 9 inclusive.

*Lock No. 2.*

New balance beams and foot bridges were supplied.

*Lock No. 3.*

Upper gates were repaired and new foot bridge mounted. The lower mitre sill also received repairs.

*Lock No. 4.*

The foot bridges were renewed and a new balance beam supplied.

*Lock No. 5.*

A new fender was placed on the south side, and the valve working gear renewed.

*Lock No. 6.*

Lower mitre sill repaired.

*Lock No. 8.*

The lower gates were repaired and received two new mitre posts, and one new top bar.

*Lock No. 9.*

Two new balance beams were placed on gates.

*Bridges.*

The old swing bridge, No. 4, was replaced by a new one, the material of which was prepared during the winter. A new pivot pier was built, and the abutment on south side repaired. New fenders with iron bands were placed at bridges Nos. 3, 5 and 7. Two road bridges, on the highway along west side of canal, between Lock No. 1 and bridge No. 1, were renewed. The streams, over which they are placed, discharge into the canal. Twelve small bridges on Ste. Thérèse Island were also repaired.

*Scows.*

Five scows were hauled out and repaired. On one of these a shanty was built as a lodging for the laborers when working in isolated places. A new deck was placed on the canal repairing scow.

A floating derrick and three punts were also built. Twenty dumping boxes were repaired, and four new ones made for use of the steam dredge, also four dozen wheel-barrows were repaired and three dozen new ones made.

*Wharves, Roads, Banks, &c.*

The wharf at Chambly, just above lock No. 7, was replanked, about 300 by 50 feet, and 12 new floor stringers were supplied at the same time.

The macadamized road at Ste. Thérèse was repaired, and at Iroquois Creek the road was raised for a length of 200 feet approaching the new bridge. The fences between St. John's and bridge No. 3, a distance of 7½ miles, were repaired. About three miles of new side ditches were made between bridge No. 3 and Lock No. 7. A new outlet ditch leading to the river was also made between bridges 4 and 5. It is through solid rock, 900 feet long, and from three to four feet deep. The old ditches were cleaned throughout, also the culverts and offtake drains.

The side walls were repaired generally. In many places they were raised and about 1,500 lineal feet of new wall built between Locks Nos. 6 and 7. Several miles of bank and towing path were raised and widened, but as this was done with material excavated by dredging and is chargeable to income, it is reported under that head.

A bad slide in the prism of canal was removed between Locks Nos 4 and 5. A large number of snubbing posts were placed and renewed on the banks of canal; and on the south shore of Chambly Basin, Richelieu River, twelve mooring posts were placed, for use of rafts waiting to enter the canal. Seventy-five new posts were made and placed in reserve.

*Buildings.*

A new frame house 24 by 22 with kitchen 12 by 12 and out-buildings were built for the keeper of bridge No. 4. New extension kitchens were also added to the houses of the master of Lock No. 2, keeper of bridge No. 8, and ferryman at Ste. Thérèse Island. All the dwelling houses, canal office, &c., received the usual annual repairs, and double doors and windows were furnished to those which were not already provided with them.

*Works of Improvement executed on the Chambly Canal, during the fiscal year 1881 and 1882.*

These works are under the immediate charge of L. G. Papineau, Esq., as Resident Assistant Engineer.

The Steam Dredge worked until the 22nd of November

From the 1st July until the month of August it had been employed at the north nd of the canal between bridges No. 4 and No. 3, after that below bridge No. 1, giving cut of 20 feet wide with a draught of 8 feet on the west side of the canal. From the 2nd of August until the month of November, it worked at St. John's, cleaning the ottom between the wharves and the pier which separates the canal from the rapids f the Richelieu River, and lowering the bottom between Jones' Bridge and Lock No. 1. The total length of the cuts made in this vicinity amount to about 6,600 feet.

The excavated material was used to raise and widen the towing path between ridges Nos. 4 and 3 below the waste weir at Ste. Thérèse, near bridge No. 1, and lso for the various works done at St. John's.

### Works at St. John's.

At the upper end of the long pier a pier head with an ice breaker has been constructed, 61 feet in length, by 16 feet in width and 9 feet in height, to make it easier for vessels to enter the canal and hinder them from being drawn into the rapids, and in addition the towing path has been continued from Jones' Bridge to this pier head. For this purpose a wooden platform was built three feet in height, 15 feet wide, and 58 feet long, to connect Jones Bridge with the pier which existed there already; the latter was repaired, raised on one side and filled with stone. In fact, with the help of the earth furnished by the dredge, a dry stone road with mooring posts has been constructed on the breakwater.

On the west side of the canal, wharf No 1 has been repaired and the grounds improved by filling up a pond, or shoal water, which occupied a considerable space.

The adjoining wharf, No. 2, was also raised and levelled.

### *Lock No.* 1.

The upper wing walls or south end of this lock have been protected and extended by two wharves covered with plank.

Besides these works a retaining wall has been constructed along Richelieu street. This wall is 735 feet long, 4 feet thick and 7 feet high. It will prevent the slides of which the Corporation and proprietors of the town of St. John's have complained.

The sides of Jones' Bridge have been furnished with platforms to facilitate the passage of teams towing vessels.

These different works had not been included in the estimate of 1881, but it appeared urgent that they should be executed during the season, and further they permitted the advantageous use of the earth excavated by the dredge.

### Locks.

Locks Nos. 2, 3, 4 and 6 have been repaired and partly rebuilt during the winter and spring of 1882, the work of demolition having been commenced in the month of December, 1881.

The walls of these locks were forced inwards to such an extent by the pressure of the earth as to render navigation difficult. The walls were taken down to the foundation; the lower courses to the level of the canal water, were replaced by timber on which the remainder of the walls were rebuilt in masonry. The walls were also protected by cribs filled with stone placed below the wings.

### *Lock No.* 2.

The lower wing wall on the east side was taken down and rebuilt as far as the mitre sill.

*Lock No. 3.*

The lower wing wall on the west side as far as the gate, and the walls of the upper wing, recess and part of the chamber were taken down and rebuilt. This lock received a pair of new gates at the lower or north end.

*Lock No. 4.*

The lower wing wall on the west side has been rebuilt as far as the gate.

*Lock No. 6.*

The lower wing wall on the west side has been rebuilt up to the gate.

To unwater the foundations of the different locks, while working at them, it was necessary to make a drain in the bottom of the canal from lock No. 3 to the waste weir below Lock No. 6. This increased the cost of these works, which has a little exceeded the amount asked for in the estimate.

It is well to remark here that the winter of 1882 was very mild and that the rains and thaws, which were almost continuous, rendered this unforeseen item necessary.

In addition to the work at the different locks, two bridges were built, one to replace the old bridge No. 4, and the other a new draw bridge, at Lock No. 2, for the service of the proprietors on the west side of the canal.

Besides the above a large number of ordinary repairs are detailed in the report of work done by the Superintendent.

STEAM DREDGE, SPRING OF 1882.

Dredge No. 1, having been brought down to Chambly in the month of November, 1881, to undergo important repairs, has resumed work at that place, above Lock No. 7, near the Government wharf, and has finished a length of 1,640 feet. The excavated materials have been used to raise and widen the west bank of the canal, which was very narrow and irregular in that vicinity.

From there it went to deepen at the wharf of the South Eastern Railway, where it worked till the 16th June. On that date it was sent to St. John's, and has commenced to deepen from Lock No. 1 downwards. On the 30th June it had got as far down as about 600 feet below the locks.

The works executed during the fiscal year have considerably improved the condition of the lower part of the canal, that is to say, from the entrance at Chambly to bridge No. 3, a distance of three and a-half miles.

Vessels have no longer any difficulty to pass through the locks, and in the portion of the canal which has been deepened they meet and pass each other easily.

The same system will be followed in the upper part of the canal, from St. John's downwards, which still presents many difficulties to the navigation.

## ST. OURS LOCK AND DAM.

The navigation closed at this Lock on the 25th November, 1881, and re-opened on 13th April, 1882.

The only interruption to traffic was one for an hour and a-half, while repairing a valve, on 15th October, 1882.

A leak was discovered last fall in the upper recess of the lock. It was stopped as well as possible, at the time, by puddling and re-planking the bottom, with the aid of a diver. To make a permanent job it may be necessary to unwater the lock next fall, after the close of navigation.

Other repairs were of the ordinary kind. The segments of upper gates were ewed, and two working chains were supplied for the lower gates. Three pulleys 'e placed on the lock walls to assist the towage of vessels. Three mooring posts 'e renewed and lamp posts and ladders repaired. Piers at both ends of lock were aired and the landing stage at upper pier was removed in the fall and replaced in ıe. The ice was cut away from the gates and dam, as usual, before the spring shets. A few missing plank were replaced in the covering of dam, and 15½ toises large boulder stones were used as rip-rap at and near the abutments. The two ›ws were hauled out and thoroughly repaired.

The Superintendent's dwelling-house and out-buildings received extensive repairs.

Two pairs of spare gates are being built for this lock at the workshop of the auharnois Canal, there being no convenience for doing such work at St. Ours.

It was not necessary to impose any fines or collect any damages during the past cal year, owing to the good conduct and carefulness of the navigators.

I have the honor to be, Sir,
Your most obedient servant,

E. H. PARENT,
*Superintending Engineer.*

## Lachine Canal.

Statement showing the depth of river water on the mitre sills of Lock No. 1, at lower entrance, and Lock No. 5, at upper entrance, during the Fiscal Year ended 30th June, 1882. (From Lockmaster's Returns.)

| Months. | Lock No. 1—Lower Sill. | | | | Lock No. 5—Upper Sill. | | | |
|---|---|---|---|---|---|---|---|---|
| | Highest. | | Lowest. | | Highest. | | Lowest. | |
| 1881. | Ft. | in. | Ft. | in. | Ft. | in. | Ft. | in. |
| July | 18 | 2 | 17 | 5 | 11 | 3 | 10 | 9 |
| August | 17 | 5 | 16 | 3 | 10 | 9 | 10 | 1 |
| September | 16 | 6 | 15 | 8 | 10 | 3 | 9 | 6 |
| October | 15 | 11 | 15 | 5 | 9 | 9 | 9 | 4 |
| November | 16 | 4 | 15 | 7 | 10 | 1 | 9 | 8 |
| December | 16 | 6 | 16 | 0 | 10 | 8 | 9 | 8 |
| 1882. | | | | | | | | |
| January | 33 | 9 | 16 | 9 | 12 | 5 | 10 | 2 |
| February | 32 | 6 | 28 | 1 | 12 | 0 | 10 | 6 |
| March | 31 | 3 | 27 | 1 | 12 | 2 | 10 | 8 |
| April | 31 | 0 | 19 | 4 | 12 | 10 | 11 | 4 |
| May | 22 | 9 | 20 | 2 | 14 | 2 | 12 | 6 |
| June | 23 | 6 | 21 | 8 | 14 | 8 | 13 | 8 |

## Beauharnois Canal.

Statement showing the depth of river water on the mitre sills of Lock No. 6, at lower entrance, and Lock No. 14, upper entrance, during the Fiscal Year ended 30th June, 1882. (From Lockmaster's Returns.)

| Months. | Lock No. 6—Lower Sill. | | | | Lock No. 14—Upper Sill. | | | |
|---|---|---|---|---|---|---|---|---|
| | Highest. | | Lowest. | | Highest. | | Lowest. | |
| 1881. | Ft. | in. | Ft. | in. | Ft. | in. | Ft. | in. |
| July | 10 | 10 | 10 | 4 | 12 | 0 | 11 | 10 |
| August | 10 | 4 | 10 | 0 | 12 | 0 | 11 | 5 |
| September | 9 | 10 | 9 | 5 | 11 | 7 | 11 | 0 |
| October | 9 | 4 | 9 | 2 | 11 | 5 | 11 | 0 |
| November | 9 | 6 | 9 | 4 | 11 | 7 | 11 | 1 |
| December | 9 | 9 | 9 | 6 | 11 | 10 | 11 | 0 |
| 1882. | | | | | | | | |
| January | 14 | 6 | 9 | 11 | 11 | 11 | 11 | 3 |
| February | 16 | 6 | 12 | 0 | 11 | 9 | 11 | 0 |
| March | 14 | 6 | 13 | 6 | 12 | 9 | 11 | 11 |
| April | 13 | 6 | 11 | 6 | 12 | 11 | 12 | 2 |
| May | 13 | 7 | 12 | 3 | 12 | 11 | 12 | 0 |
| June | 14 | 0 | 13 | 3 | 13 | 0 | 12 | 7 |

## Chambly Canal.

STATEMENT showing the depth of river water on the mitre sills of Lock No. 9, at lower entrance, and Lock No. 1, at upper entrance, during the Fiscal Year ended 30th June, 1882. (From Lockmaster's Returns.)

| Months. | Lock No. 9—Lower Sill. | | Lock No. 1—Upper Sill. | |
|---|---|---|---|---|
| | Highest. | Lowest. | Highest. | Lowest. |
| 1881. | Ft. in. | Ft. in. | Ft. in. | Ft. in. |
| July | 11 0 | 9 8 | 8 7 | 7 9 |
| August | 9 9 | 9 0 | 8 4 | 7 6 |
| September | 9 4 | 8 8 | 8 3 | 7 0 |
| October | 9 0 | 8 4 | 7 10 | 6 10 |
| November | 10 0 | 8 7 | 8 6 | 7 2 |
| December | 12 6 | 8 7 | 8 6 | 7 7 |
| 1882. | | | | |
| January | 13 7 | 9 11 | 9 0 | 8 6 |
| February | 13 7 | 12 6 | 8 9 | 8 5 |
| March | 16 6 | 13 4 | 10 6 | 9 7 |
| April | 14 9 | 12 6 | 10 4 | 9 4 |
| May | 12 6 | 12 0 | 9 8 | 9 2 |
| June | 13 10 | 12 3 | 10 6 | 9 3 |

## St. Our's Lock.

STATEMENT showing the depth of river water on the mitre sills of St. Our's Lock during the Fiscal Year ended 30th June, 1882. (From Superintendent's Returns.)

| Months. | Lowest Sill. | | Upper Sill. | |
|---|---|---|---|---|
| | Highest. | Lowest. | Highest. | Lowest. |
| 1881. | Ft. in. | Ft. in. | Ft. in. | Ft. in. |
| July | 9 6 | 8 6 | 10 2 | 9 2 |
| August | 8 10 | 7 10 | 9 3 | 8 10 |
| September | 8 4 | 7 0 | 9 2 | 8 7 |
| October | 7 6 | 6 5 | 9 0 | 8 4 |
| November | 7 10 | 6 10 | 9 9 | 8 8 |
| December | 10 2 | 7 5 | 10 11 | 8 11 |
| 1882. | | | | |
| January | 13 0 | 8 5 | 10 8½ | 9 2 |
| February | 12 8 | 11 3 | 11 0 | 9 7 |
| March | 16 10 | 12 2 | 13 10 | 11 0 |
| April | 14 7 | 11 3½ | 12 0 | 11 0½ |
| May | 14 3 | 11 9 | 11 2 | 10 5 |
| June | 15 5 | 12 10 | 12 2 | 10 9 |

## Lachine Canal.

Statement of Fines and Damages collected during the Fiscal Year ended 30th June, 1882.

| Date. | Name of Vessel. | Name of Owner. | Fines. | Damages. | Total. |
|---|---|---|---|---|---|
| 1881. | | | $ cts. | cts. | $ cts. |
| July 7 | Barge Nile | Cantin & Sons | 4 00 | | |
| do 7 | Barge Arno | do | 4 00 | | |
| Sept. 5 | Barge Martin | Kingham | | 39 22 | |
| do 28 | Tug N. A. Smith | V. Paradis | 4 00 | 10 00 | |
| Nov. 14 | Barge Arthur | McGillis | | 35 00 | |
| 1882. | | | | | |
| May 25 | Barge N.-W. Star | F. Mallette | 2 00 | | |
| do 27 | Barge R. W. Owens | Owens & Co | 4 00 | | |
| do 27 | do do | do | 4 00 | | |
| June 17 | Steamer Manitoba | Kelly | 4 00 | | |
| | | Total | 26 00 | 84 22 | 110 22 |

M. CONWAY,
*Superintendent.*

Lachine Canal Office,
Montreal, July, 1882.

## Lachine Canal.

Statement of amounts collected for Wood, Rent and Wintering Vessels during the Fiscal Year ended 30th June, 1882.

| Date. | Items. | Number. | Rate. | Amounts. |
|---|---|---|---|---|
| 1881-82. | | | $ cts. | $ cts. |
| | Firewood | | | 1,268 62 |
| | Wintering Vessels | | | 217 48 |
| | Total | | | 1,486 10 |

JOHN O'NEIL,
*Collector.*

Collector's Office,
Montreal, July, 1882.

LACHINE CANAL.

STATEMENT of Basin, Firewood, Fines and Bank Dues collected during the Fiscal Year ended 30th June, 1882.

| te. | Items. | Amount. |
|---|---|---|
| | | $ cts. |
| -82. | | |
| | Basin dues | 246 73 |
| | Firewood dues | 52 08 |
| | Bank dues | 39 00 |
| | Fines | 9 00 |
| | Total | 346 81 |

## OTTAWA RIVER CANALS.

SUPERINTENDING ENGINEER'S OFFICE,
OTTAWA, 17th August, 1882.

SIR,—I have the honor herewith to hand you a Report for the fiscal year ending th June, 1882, upon the "management and maintenance," and of the "works of nstruction" on the various canals under my charge.

I have the honor to be, Sir,
Your obedient servant,

D. STARK,
*Superintending Engineer O. R. C.*

. P. BRADLEY, Esq.,
Secretary Department Railways and Canals.

## MAINTENANCE.

### ST. ANNE'S CANAL.

The navigation closed on this canal on the 20th November, 1881, and was re-pened on the 11th April, 1882. It has since then been prosecuted regularly and vithout interruption.

The usual repairs have been made to gates, ice-breakers, wharves, &c., and a omewhat heavy amount of pointing had to be done to the lock masonry. It was ound necessary to place a two-ply boom alongside the lower cribwork of the new channel across the shoals below the canal of about 800 feet in length, to prevent vessels being damaged by the jutting rock upon which it stands at low water.

Day guide signals have been placed at the upper entrance and a pier put in above and between the entrances of the two locks to facilitate the passage of vessels to the old one.

No other repairs worth mentioning have been made here.

### CARILLON AND GRENVILLE CANALS.

These canals were closed on the 26th November, 1881, and reopened, the Carillon on the 28th April, and the Grenville on the 1st May, 1882.

Two interruptions to the traffic occurred during the year, one on the 12th September, 1881, when a loaded barge grounded on the Chute à Blondeau rapids, and obstructed the passage of vessels for three days; and the second by the falling in of a portion of the upper north wing wall of Lock No. 3 of the old canal. This last, however, only caused a detention of a few hours.

The Superintendent had on several occasions to complain of the overloading of barges during the months of low water. This was persisted in through these months to the inconvenience of the trade generally by the delays it occasioned to the navigation of the canals. Some owners would apparently insist upon so overloading their barges, notwithstanding the knowledge they must have possessed of the draught of water in the canals, and this at the risk of having to lighten them, and to the endangering in some places of the old canal embankments.

It is hoped that a perfect completion of the new canal will soon avoid a repetition of this difficulty, but at present forwarders fear taking full advantage of it, especially during the season of high water, owing to the proximity of the dam to the head of the guide pier marking the upper entrance. The current at this point during that season was certainly strong enough to render such fears well founded, in view of accident of any kind, and certain remedial measures have been submitted for the consideration of the Department which need not be treated of here.

Everything that can be should be done without delay to close the old Carillon canal entirely, unless a very considerable outlay in connection with its locks is decided upon being undertaken. These structures may be said to be, without exception, now virtually useless, and they can only again be rendered really serviceable by an amount of labor and expense which would be found to fall little short of an entire renewal.

A considerable amount of repair was found necessary this year to the North River feeder and dams.

### Chute-a-Blondeau.

The lock at this point it was found necessary to keep in use during high water and until some improvements in the shape of the removal of shoals are made in the rapids, it will continue to be needed.

The removal of these shoals, by its having the effect of equalizing the rate of current between Greece's Point and the dam, will at least enable the latter to yield the utmost it ever can yield to the facility of navigation in this section of the river, and do away, it is hoped, with further necessity for using the lock.

A considerable amount of repairs had to be made to this lock during the year, and if it should be found necessary to continue its use (which next year at least it certainly will be) steps in the interests of the navigation should be taken to increase by several feet the present depth of water on its sills. During last seasons low water the full depth recorded here was not more than 3 feet 3 inches.

### Grenville Canal.

Here the old canal is still in use from the lower entrance to Lock No. 8, pending the completion of the new works at Greece's Point.

Locks Nos. 5, 6, 7 and 8 are in such a state as to be a constant source of expense and anxiety, particularly the combined ones, Nos. 7 and 8, which have called for an extensive amount of repair to their gates, sluices, &c. These two, however, will, I am glad to say, be undoubtedly abandoned at the close of navigation this year.

The other two, Nos. 5 and 6, will still have to be used for a short time next season, but I am in hopes that the month of June will see them deserted also, and fortunately their present condition is a more satisfactory one.

Locks Nos. 9, 10 and 11 have called for no repairs of importance, but the swing bridge across Lock No. 11 will soon require reconstruction, and I should recommend the supply of a new one before the close of the present fiscal year.

The embankments, towing path, farmers roads, and fences, have demanded and ceived the usual amount of attention and repair. The retaining walls which ere put up to protect the canal banks have caused some trouble by their having given ay in various places, and tumbled into the canal. These will ere long have to ndergo remodelling at many points and be converted, from the perpendicular walls ey are, into rip rap or slope walls, with a view to rendering them both more rviceable and more permanent.

### Culbute Canal.

Nothing but the ordinary repairs have been needed here. There may be said to ave been no traffic through it since my last annual report.

D. STARK,
*Superintendent Engineer, O. R. C.*

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## CONSTRUCTION.

### Ste. Anne de Bellevue.

At the close of the fiscal year 1881, these works, which consist of the construction of a new lock and an enclosed slack water basin below it, together with the deepening and widening out of the river channel immediately above it, stand as follows:

The basin had been scarcely more than surrounded by a cofferdam, the lock pit had been got ready for the foundations, and excavation by dredging in the upper entrance had just been begun.

Since then the excavation of the lower basin has been completed, and the retaining wall on the north side built. The lock masonry has been carried up throughout to a height of 14 feet above the foundation, and will be finished towards the end of August. The dredging of both the upper and lower entrances has been entirely done, with the exception of what still remains under cofler-dams, and nothing by the end of August will remain to finish the contract but the completion of the wall on the south side of the basin, and probably also the one along the north side of the upper entrance. The placing of the lock gates will then render the new works available for traffic.

All the work in connection with the Grand Trunk Railway bridge rendered necessary by the location of the new lock has been done, excepting some finishing to the copings on the tops of the piers.

### Carillon Canal.

The works executed here during the year are as follows:—

The upper guide pier has been completed and the upper entrance freed from all obstructions.

The embankment forming the protection to the canal between the two locks has been made

The lower lock pit at the end of the last fiscal year had just been pumped out. The masonry was begun on the 1st July, the greater portion of the foundation having been laid the previous fall.

This was carried on until it was stopped by frost in the fall of 1881, when it was within about two thirds of completion. It was again begun as soon as the season permitted in the spring of 1882, and completed towards the end of the month of May of that year.

The putting in place of the gates of both the locks which had been framed during the winter, by the Department, under the superintendence of Mr. David Macadam,

and which was done immediately on the lower lock being got ready, rendered the canal ready for traffic, and it was opened for this on the 27th day of May.

Range lights for the guidance of vessels were then placed at the head of the new canal and at Chute-à-Blondeau.

### Chute-a-Blondeau.

A large mass of rock here, which stood directly in the way of navigation, was blown out during the winter, but notwithstanding this, further obstructions still render the current during the season of high water considerably more rapid than was contemplated when the scheme of the dam at Carillon was incepted.

This can be greatly helped by the blasting out of a ledge of rock across the current, still existing, and which is in reality the crest of the old rapids.

The removal of this (and it can be easily got rid of) would so equalize the current, with the whole flow of the river between Greece's Point and the dam, as to at once afford the maximum amount of benefit the latter can bestow. In the interests of the navigation this ledge should, if possible, be got rid of during the ensuing winter.

### Carillon Dam and Slide.

These works were finished in the fall of 1881 and have since been performing their duty satisfactorily. Some improvements to the slide entrance are now in progress, such as extending the guide booms farther up the river and altering the position of others which had been placed at too square a direction to that of the current.

These changes once made I have every reason to feel assured that all the benefits anticipated from the construction of these works will be realized.

### Greece's Point Works.

The works at this point, which compris · two new locks and the deepening and widening of the canal from about 600 feet above the upper one to deep water in the river below the lower, were, up to the 9th November, 1881, in the hands of a firm of contractors known as Heney, Stewart & Co., at which time, in consequence of the inability of this firm to proceed, they were suspended, and on the 7th February, 1882, relet to Messrs. Brecken & Co., another firm who began operations immediately, and have since been prosecuting them satisfactorily.

The amount of work done by the first contractors consisted of a partial grading of the reach between the locks, and that above the upper one, the excavation of both lock pits, the laying of the timber in the bottom of the upper lock, and some of its masonry also, to the extent of the levelling course, and a course and a half, of ashlar above it. The lock pit was then filled with water for the winter. Early in the spring it was pumped out again by the new firm of contractors and masonry recommenced; by the 30th June about two-thirds of the whole of this was laid.

Some excavations between the locks has also been taken out by the new firm, but effective work upon this must await the close of navigation, when a strong force will be employed to remove everything in the shape of earth prior to the setting in of severe frost, what there may remain of rock being removed during the winter. On the 30th June the laying of the timber in the bottom of the lower lock was commenced. This is now completed.

### Grenville Canal.

*Section No. 1,—From Upper Entrance Downwards.*

On this section, work has been confined to the widening of the reach between the river and the guard lock, to admit of increased accommodation to the trade, rafts and barges frequently arriving in such bulk as to cause, in the old state of things, serious detention and inconvenience.

The building of a new wharf, and the construction, out of the way of the canal altogether of a basin for the accommodation of the Ottawa River Navigation Co.'s steamers, have also been executed.

The excavation of the enlargement was begun on the 1st September, 1881, and in the beginning of October the contractor put in his coffer-dam for the steamboat basin, and commenced that work and the wharf at the same time. This wharf is composed of crib-work and stands 30 feet above the canal bottom. It is founded on piles driven through from ten to twenty feet of shifting sand down to hard pan, and partly, where the depth of sand diminished, on the hard pan itself. It was in its main features got ready for the opening of navigation, but its entire completion had to await the falling of the water in the river, which has been this year an extremely slow process, and something in consequence still remains to be done to it.

Towards the end of November, 1881, the contractor was enabled, by throwing a coffer-dam across the canal entrance, to begin his winter work on the widening of that, with a force of from 400 to 500 men.

The excavation was largely composed of a clay slate rock, which was not only unfit for anything in itself, but presented no foundation on which to found the retaining walls, and the cut had therefore to be taken out to a width extending from rear to rear of these walls, making a serious increase to both the quantities of excavation and masonry. In consequence of the impossibility, the difficulty and expense, of getting stone fit for such masonry near the place, and the difficulty and expense of transporting it from any distance during the winter season, it was decided to form the foundations of these walls of crib work, brought to within a foot of the surface of lowest water and filled with stone from the excavation. In no other way could a timely completion of them have been made.

*Section No. 2.*

Only a little widening was done on this section, chiefly with a view to obtaining stone fit for the entrance walls, but the attempt failed.

None of the rock through which the Grenville Canal is cut affords stone fit for building purposes.

*Section No. 3.*

Nothing done.

CULBUTE WORKS.

These are now reduced to the completion of the Rocher Fendu dam, a consummation which the loss of a closing crib towards the end of last season then prevented.

D. STARK,
*Superintending Engineer O. R. C.*

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CORNWALL CANAL.

CORNWALL, 22nd July, 1882.

SIR,—I have the honor to submit the following Annual Report on the works under my charge for the fiscal year ended on June 30th, 1882:—

The Cornwall Canal has been maintained in an efficient state, and no accident occurred during the year.

The canal was closed by ice on December 10th, 1881, and opened again for traffic on April 25th, 1882.

The works in progress during the past year will come under the head of repairs and construction.

Rebuilding one pair of lower gates and general repairs to all lock gates, making eight new sheaves and a new scow (fifty-five feet long, fourteen feet wide and three and a-half feet deep) for general use in making repairs. Repairing lock-houses. The supply weirs at Locks No. 18 and 19 were in a leaky condition. A leak had found its way around the wing wall. The plank floor above the breast wall was taken up, and the spaces between the timbers well filled with puddle and concrete. A double floor of two-inch plank was then laid down, the embankment excavated from top to bottom and refilled with good puddle. Putting in twelve pieces of new segments. Pointing lock walls. Raising embankment, cleaning side drains and culverts, &c., &c.

I have the honor to be, Sir,
Your obedient servant,

D. A. McDONELL,
*Superintendent.*

STATEMENT showing the depth of river water on the mitre sills of Lock No. 15 at lower entrance, and Lock No. 21 at upper entrance, during the fiscal year ended 30th June, 1882:

| | Lock No. 15, Lower Sill. | | Lock No. 21, Lower Sill. | |
|---|---|---|---|---|
| | Highest. | Lowest. | Highest. | Lowest. |
| 1881—July | 10·7 | 10·4 | 10·6 | 10·2 |
| August | 10·5 | 9·11 | 10·4 | 9·8 |
| September | 10·3 | 9·6 | 10·2 | 8·11 |
| October | 9·9 | 9·0 | 9·9 | 8·8 |
| November | 9·9 | 9·1 | 9·10 | 8·11 |
| December | 9·9 | 9·3 | 10·10 | 9·0 |
| 1882—January | 23·9 | 9·10 | 10·4 | 9·1 |
| February | 26·3 | 13·4 | 9·11 | 8·9 |
| March | 16·4 | 10·9 | 10·10 | 9·7 |
| April | 11·8 | 10·8 | 11·1 | 10·2 |
| May | 11·2 | 10·8 | 11·5 | 10·2 |
| June | 11·7 | 10·11 | 11·7 | 11·0 |

D. A. McDONELL,
*Superintendent.*

## WILLIAMSBURGH CANAL.

MORRISBURG, July, 1882.

SIR,—I have the honor to submit my Report on the working and condition of the Williamsburgh Canals (embracing Farren's Point, Rapide du Plat, Iroquois Junction and Gallops Canals) for the year ending the 30th June, 1882.

These canals, closing for the winter season on the 10th December, 1881, and re-opening for traffic on the 24th April, 1882, have been kept in good repair, and no interruption or delay from any accident has occurred during the season of navigation.

### Farran's Point Canal.

Repairs were made to lock gates, two new sheaves were placed in chain holes, d chains to lock gates renewed; lock gates, bumping and snubbing posts were painted, three hundred and twenty feet of the pier or dock at the lower entrance is rebuilt, an additional portion of this pier, as well as a portion of the ice-breaker the lower entrance is to be rebuilt during the current year; the banks are well )ned and in good repair.

### Rapide du Plat Canal.

The upper gates of Lock No. 23 were taken out and rebuilt; new rollers were aced in the upper gate of Lock No. 24; lock gates, bumping and snubbing posts at )cks Nos. 23 and 24 were re-painted; new fences were erected on the premises cupied by lock laborers; the inside dock at the foot, and the piers and ice-breaker the head of this canal were repaired, and some repairs by stoning were done to the nks.

This canal requires dredging in several places, and dredging the slip on the side of the dock or wharf at the lower entrance, so that boats could load and unload the dock on the inside of this slip, would be of much advantage, both to shippers id vesselmen.

### Point Iroquois Junction and Gallops Canal.

The gates of Locks Nos. 25, 26 and 27 were raised and adjusted, new rollers were laced in the lower gate of Lock No. 27; lock gates, bumping and snubbing posts at ie several locks were re-painted, repairs were done to the swing bridges, and a ortion of the track of bridge over Lock No. 26 was renewed; timber for rebuilding iese bridges in case of accident to them has been procured and placed under safe overing; the banks are well protected with stone, and the booms in Point Iroquois 'anal were properly repaired this spring. The buoys under my charge between )ickinson's Landing and Johnstown were replaced.

From the low water in the river St. Lawrence during last fall, and consequently n the canal, some detention of vessels occurred, viz.:—

| | | | | | |
|---|---|---|---|---|---|
| In September, 1881— | Lock 23, | Rapide du Plat, | one vessel | detained | 5 hours. |
| " | " | " | " | " | 3 " |
| " | Lock 24 | " | " | " | 9 " |
| " | " | " | " | " | 7 " |
| " | " | " | " | " | 6 " |
| " | " | " | " | " | 3 " |
| " | " | " | " | " | 2 " |
| In October, 1881— | " | " | " | " | 7 " |
| " | " | " | " | " | 4 " |

Since the opening of the navigation this spring the water has been high in the river, and a full depth in the canal.

I annex a statement showing the extreme depth of water on the sills of the locks for the year ending the 30th June, 1882.

All of which is respectfully submitted.

I have the honor to be, Sir,
Your most obedient servant,

A. G. MACDONELL,
*Superintendent Williamsburgh Canals.*

A. P. Bradley, Esq.,
Secretary, Department of Railways and Canals,
Ottawa.

## Williamsburgh Canals.

Statement showing extreme depth of water on the mitre sills of the several locks during the year ending 30th June, 1882:

### FARRAN'S POINT CANAL.

| Months. | Lower Sill, Lock No. 22. | | Months. | Lower Sill, Lock No. 22. | |
|---|---|---|---|---|---|
| | Highest. | Lowest | | Highest. | Lowest. |
| | Ft. In. | Ft. In. | | Ft. In. | Ft. In. |
| 1881—July | 9 6 | 9 0 | 1882—January | 8 2 | 7 6 |
| August | 9 10 | 8 9 | February | 7 8 | 7 5 |
| September | 8 10 | 8 4 | March | 9 3 | 7 8 |
| October | 8 9 | 8 0 | April | 10 0 | 9 2 |
| November | 8 8 | 7 6 | May | 9 10 | 8 9 |
| December | 8 6 | 8 0 | June | 11 0 | 10 6 |

### RAPIDE DU PLAT CANAL.

| Months. | Lock No. 23, Lower Sill. Foot. | | Lock No. 24, Upper Sill. Head. | |
|---|---|---|---|---|
| | Highest. | Lowest. | Highest. | Lowest. |
| | Ft. In. | Ft. In. | Ft. In. | Ft. In. |
| 1881—July | 9 7 | 9 4 | 9 9 | 9 4 |
| August | 9 7 | 8 9 | 9 9 | 8 9 |
| September | 9 3 | 8 3 | 9 0 | 7 9 |
| October | 8 7 | 7 7 | 8 6 | 7 0 |
| November | 8 10 | 7 0 | 8 9 | 7 0 |
| December | 9 6 | 7 0 | 9 3 | 7 3 |
| 1882—January | 9 6 | 8 0 | 9 0 | 7 9 |
| February | 9 6 | 8 0 | 9 3 | 8 0 |
| March | 10 3 | 9 3 | 10 0 | 8 0 |
| April | 10 4 | 9 4 | 10 6 | 8 9 |
| May | 10 9 | 9 0 | 10 9 | 9 4 |
| June | 11 3 | 10 9 | 11 3 | 10 3 |

POINT IROQUOIS JUNCTION AND GALLOPS CANAL.

| Months. | Point Iroquois Lock No. 25, Lower Sill, Foot of Canal. | | Gallops Lock No. 27, Upper Sill, Head of Canal. | |
|---|---|---|---|---|
| | Highest. | Lowest. | Highest. | Lowest. |
| | Ft. In. | Ft. In. | Ft. In. | Ft. In. |
| 1881—July | 12 5 | 11 9 | 10 4 | 9 8 |
| August | 12 6 | 11 4 | 10 3 | 9 3 |
| September | 11 8 | 10 8 | 9 10 | 8 10 |
| October | 11 0 | 9 10 | 9 3 | 8 4 |
| November | 11 6 | 9 2 | 9 9 | 8 0 |
| December | 12 8 | 9 0 | 10 2 | 7 10 |
| 1882—January | 12 8 | 10 8 | 10 3 | 8 5 |
| February | 11 10 | 10 5 | 9 3 | 7 8 |
| March | 13 8 | 11 0 | 10 10 | 8 11 |
| April | 13 8 | 11 10 | 11 5 | 9 6 |
| May | 14 0 | 12 8 | 11 8 | 9 9 |
| June | 14 2 | 13 0 | 11 7 | 10 0 |

A. G. MACDONELL,
*Superintendent Williamsburgh Canals.*

Morrisburgh, 13th July, 1882.

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St. Catharines, 22nd September, 1882.

Sir,—Accompanying this you will receive my Annual Reports of the works done under my charge on the Welland and Burlington Bay Canals for the year ending 30th June last.

Your obedient servant,

WILLIAM ELLIS,
*Superintendent.*

A. P. Bradley, Esq.,
Secretary, Department of Railways and Canals.
Ottawa.

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## BURLINGTON BAY CANAL.

Superintendent's Office,
St. Catharines, 22nd September, 1882.

Sir,—I have the honor to submit my report on the working and condition of the Burlington Bay Canal for the year ending 30th June, 1882.

The canal was closed on the 19th December last and opened on the 20th April.

No serious interruption to the passage of vessels has occurred during the season.

The rebuilding of the piers has been at a stand-still since the contractors ceased work last fall, and a considerable stretch of the lake end of the east side pier was left by them partially taken down, planking stripped, &c. The storms have since washed

out some of the stone filling from the old cribs into the canal, reducing the draft of water alongside in those places to about eight feet only at low water. This portion of the pier is now in an insecure state from violent storms.

The repairs have been very light.

Your obedient servant,

WILLIAM ELLIS,
*Superintendent.*

A. P. Bradley, Esq.,
Secretary, Department of Railways and Canals
Ottawa.

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## WELLAND CANAL.

Superintendent's Office,
St. Catharines, 22nd September, 1882.

Sir,—I have the honor to submit my Report on the condition and working of the two canals—the Old and the New—for the year ending 30th June, 1882.

### The New Canal.

This canal was put in my charge on the opening of navigation, April 20th, 1882 since which date no serious detention to navigation through it has occurred, except in one instance, at Lock No. 6, when a stoppage of four days was unavoidable to enable us to unship the foot gates, lower the track, &c., which would not admit of the gates being opened, and while this was being done, I sent all the vessels through the old canal—that were not drawing over 10 feet—so the inconvenience was very slight, and should detentions in future occur, the old canal would be found available for a similar purpose.

The canal has been operated with great satisfaction to all that have used it. The banks have proved so far quite up to their requirements. Considerable subsidence of course took place after they had been well saturated, and a strong force of men and teams has been employed to bring them up to their proper height again. This I hope to have completed by the end of this season.

Some of the slope wing walls at the ends of some of the locks are already settling to some extent. These may have to be rebuilt and strengthened when the water is drawn off during the winter and spring.

The lock gates and valves work well throughout, except where subsidence gives us trouble. When this ceases no difficulty will be experienced. The Giant water wheels open gate valves very quickly and satisfactorily. The copper cables used to open the gates proved too soft, and I am substituting, as found necessary, soft steel cables in lieu, which work very well and are much cheaper.

The rest of the structures throughout being most substantial, answer their purpose admirably and give no trouble.

The St. Catharines and Welland Canal Gas Light Company have nearly completed the laying of the gas pipes between the harbor of Port Dalhousie and the guard lock at Thorold, as required by their contract, and have all the lamps in position, four at each lock, which have been lighted up temporarily by large coal oil burners since the 12th day of June last, and a large flood of light is afforded, satisfactory to vessel men, and all concerned.

The Company promise to make the gas connections in a very short time, when the lights of course will be even more brilliant, each gas burner being of 40 candle power.

The amount of business done through the canal has been fair up to this date, and some very large propellers have passed through, notably the "I. C. Gault" from Toledo, carrying 43,000 bushels, 15,000 of which had, in each case to be lighted or elevated at the Port Colborne Elevator and taken down by the Welland Railway Company and put into the vessel again by their elevator at Port Dalhousie. The Railway Company's charges for that service, although very moderate, proved too much to admit of the "Gault" successfully continuing the business through our canal and competing with low rates to Buffalo and through the Erie Canal.

Submarine blasting has been carried on at the lime kiln crossing, Lake Erie, for some years, and the work is so far completed that now vessels drawing 16 feet can pass between Chicago and Buffalo, and as our new canal will only admit of vessels drawing 12 feet, we are and always shall be behind in the race for the enormous business that the West and North-West will ever hereafter furnish, unless greater facilities for elevating are supplied at Port Colborne and Dalhousie, so as to lighten vessels of greater draft, and give quicker despatch to same through the canals, and I recommend the charge for that service should be included in the toll rates; were that arrangement made our business through the canal would be soon doubled.

I recommend that all the banks should be sown with suitable grass seed next spring, if not they will soon be covered with thistles, involving a heavy and perpetual annual expenditure to cut down.

I also recommend that trees be planted along the banks where vessels are much exposed to the wind storms.

The protection stone lining along the banks of the canal, and also around the basins between Port Dalhousie and the Guard Lock above Thorold, is well advanced to completion, and will soon be entirely finished.

The continuation of that work to Humberstone, the Chief Engineer informs me is to be done by contract.

*Allanburg Guard Lock to Port Colborne.*

Built tool house and cabin for the men working on Deep Cut tow path.

Formed tow path anew throughout Deep Cut. Built and laid 31 box culverts under tow path Deep Cut.

Built float bridge across canal for winter use, made out of old floats.

Built one new bridge Quaker road, 25 feet long.

Removed floats and took them to winter quarters and replaced them in spring on sections No. 34 and No. 35 where required.

New protection floats built from Lock to end of section No. 35 where necessary; repaired other portions of the floats from time to time throughout the season.

Building approaches for Air Line ferry, moving scow and fitting her up for ferry purposes. Building bridges across back ditch rear of Lock-master's house, and Air Line ferry. Built new store house and shop 28 x 20 x 14 feet, and fitted up and painted complete. Cleaned out back ditches throughout both sides of canal.

Drove cluster of protection piles at ends of rest piers G. W. Railway and Canada Southern bridges, and chained them, &c. Cleaned out Lyons Creek culvert, painted snubbing posts along harbor. Port Colborne ferry boat caulked and painted, also timbers of lifting scow; made and put down snubbing posts along New Lock. Facing worst portions of banks (where most washed out), with stone. Filled in with massive blocks of stone portions of the decayed breakwater, Port Colborne harbor.

OLD CANAL.

The Old canal reaches from Port Dalhousie to its junction with the New at Allanburg.

*From Port Dalhousie to Allanburg.*

This canal was closed on the 15th day of December last, and opened the 20th day of April, 1882.

The water was drawn off for repairs on the 10th day of April, and let in again three days afterwards.

Notice was given in my last Report that a very large amount of work was required to be done to insure the safety of the canal weirs, bridges, raceways, &c., in various places. Owing to the worn out and dilapidated, and insecure condition of many of the structures, these have been nearly all renewed, the remainder requiring attention will be similarly treated when the water is drawn off next spring, after which the canal throughout will be in a fair condition. Navigation has been interrupted twice by accidents during the year, viz:—Lock No. 1, November 24th, 1881, when the four gates were carried out owing to the propeller "Europe" running into the head gates, and at Lock No. 17, June 6th, 1882, when the barge "Oriental" also ran into the head gates, and the four gates were carried away; in each case navigation was stopped for three days only.

The Government scows have been fully employed in hauling stone and gravel to face up and raise the banks throughout, where requisite.

An unusual number of new gates have been hung during the year to replace those in a worn out and unsafe condition.

The old rotten hydraulic race aqueduct has been entirely removed and a permanent structure put up in its place, consisting of six stone piers and two abutments, which carry a light but strong wrought iron rivetted lattice superstructure of seven 50 foot spans, over which a very strong and enlarged tongued and grooved flume is carried, which will admit double the quantity of water passing through, that has heretofore passed through the old flume, should it ever become necessary.

We have a limited supply of new gates left on hand and are finishing up a few more, when I propose to stop any further manufacture of gates.

The canal has worked very satisfactorily throughout, and now it is fed entirely from Lake Erie. The manufacturers all along have a never failing supply of pure water. Only one man has been left in charge of each lock and bridge since navigation opened, the rest having been transferred to the new canal, and I recommend a further reduction in the number on the opening of navigation next spring, leaving say one man only in charge of two or three contiguous locks.

The repairs and renewals made during the year may be generally stated as follows:—

*Harbor, Port Dalhousie.*

Built two ferry landings each side harbor; 250 feet decayed pier on west side taken down and rebuilt, also renewed sidewalks, new snubbing posts put down, new large W.C. built for use of tug and vessel hands; rebuilt bridge over sluiceway; sheet piled berth for ferry boat and made passenger landing.

*Lock No. 1, and Bridge and Level.*

325 feet heavy oak railing to floats rebuilt, and 780 feet repaired. Replanked swing bridge; drove 420 feet oak piles inside floats; built new approach to upper end of floats; repaired floats sundry times.

*Lock No. 2, and Bridge and Level.*

Drove 11 protection piles at upper weir, capped same and put on fender streaks; raised swing bridge twice and put in roller; repaired bridge, Shickluna's dock; planked flume, 26x12 feet; new balance box on bridge, and planking; made patterns for ratchet roller and put on; made and put in box drain 16 feet long.

*St. Paul Street Bridge.*

Repaired damage to bridge by schooner "Mary;" drove protection piles each side and capped same; rebuilt cribs; renewed planking several times, and put new stanchions under bridges.

*Lock No. 3 and Level.*

Put new lifting rod on gate and new balance beam, and repaired plates.

*Lock No. 4 and Bridge and Level.*

Raised bridge several times and repaired pivot beams, &c.; hung 2 new gates, removed old ones to gate yard, and stripped and cut up; drove 10 protection piles in front of weir, and capped same and put on fender streak; repaired shutes from race way, and put one new bulk head to shute; put up 325 feet barb wire fence around lot; drove 19 piles to sustain heel path floats, and fendered and capped, repaired floats; made and laid box drain 20 feet long.

*Lock No. 5 and Bridge and Level.*

Built bridge, tow path side, 18 x 20 feet; new timbers under crab, and rest same; made and put on new foot boards to gates; made and put on storm door and steps.

*Lock No. 6 and Level.*

Repaired culvert and bridge; new balance beam on head gates.

*Hydraulic Race and Aqueduct.*

Several new bents and braces put in at various times to sustain old aqueducts, and others spliced; made and put in box drains; built temporary sheds and W.C. for workmen; made levels, plumb rules, templates, and mixing boxes for masons; raised bridge over race, near hospital, 25x12 feet, and put railing on same; kept ice clear all winter; puddled and sheet piled old overflow weir shute; widened end of bridge; took down old aqueduct in spring; excavated foundations and concreted same, and built 6 stone piers and 2 abutments afterwards; erected wrought iron rivetted lattice superstructure, consisting of seven 50 foot spans, and enlarged, substantial wooden flume across same; painted the whole 3 coats; built wing walls and bulkheads each end; put in sheet piling and timbers each end and faced up wall with puddle, dry walling, &c.; levelled all underneath and cleared away.

*Gate Yard, Merriton, and Shop at Thorold.*

Finished and laid away four low lift gates, built enclosure fence, made eight gate foot-boards, made numerous snubbing posts, and put caps on same, framed six new balance beams, made four ladders for new canal bridge, caulked and repaired crane scow, partly built new gates for Lock No. 1; put new leader ladders and braces to floating pile driver, repaired the hull, put in two stiffening arches, and built cabin on deck; repaired gravel scows, built small punt for gravel scow, made and put new frame to horse-power of derrick, and new mast; commenced work on three new low-lift gates, built two pigeon hole desks for office. eased doors and windows, repaired desks, &c., at canal office, made new monkey and strip for pile driver.

*Lock No. 7 and Bridge and Level.*

Raised swing bridge, and repaired floor; put on new balance box, &c.; rebuilt heel approach.

*Lock No. 8 and Level.*

Repaired floats; drove 13 guide piles foot of lock, and capped same; put timber backing behind piles, to receive stone facing, &c., 125 feet over all; built one new lock house, in place of one burnt.

*Lock No.* 9 *and Level.*

Built new bridge, 70 ft. x 12 ft. across race, with hand-rails; hung new lock gate; drove 35 protection piles at weir and fendered them; put float bridge across head of lock for winter travel.

*Lock No.* 10 *and Level.*

Repaired heel path bridge; put new bands on balance beam; repaired house door; removed two old gates, and replaced with two new ones; and one new balance beam.

*Lock No.* 11 *and Level.*

Built bridge over race, 40 ft. x 12 ft.; hung one new gate, and put on new balance beam; made and hung two gates in fence; coped cellar entrances, and hung new door.

*Lock No.* 12 *and Level.*

Put on new balance beam, and reset crab; repaired floats; put new door on house.

*Lock No.* 13 *and Level.*

Removed decayed lock gate, and hung new one in place; repaired lock house.

*Lock No.* 14 *and Level.*

Waste weir walls taken down and rebuilt, new puddling put in, banks raised, &c., pointed all other weir masonry.

*Lock* 15 *and Bridge and Level.*

Finished coping of lock walls; put new timbers head of lock.
Waste weir walls taken down and rebuilt, new puddling put in, adjoining banks raised, pointed all other weir masonry; 325 lineal yards of embankment raised and faced with stone; built new gate with back gear and screw attachments to waste weir put on two new balance beams.

*Lock No.* 16 *and Level.*

Finished coping on lock walls; raised tow path 175 lineal yards in length.

*Lock No.* 17 *and Level.*

Finished coping on lock walls; waste weir walls taken down and rebuilt and
Quarried a large amount of stone, and teamed to canal bank for scows, also gravel extended; new puddling put in; banks raised, &c., &c.; removed four old gates, and other *debris*, and hung four new gates, after accident by barge "Oriental," and repaired float bridge.

*Lock No.* 18 *and Level.*

Framed and put on new balance beam; removed injured coping and ashlar work and rebuilt with new.

*Lock No.* 19 *and Level.*

Damaged coping removed and replaced with new; 290 yards of dry stone slope wall foot of lock, and tow path widened and raised.
and stripping.

*Lock No. 20 and Level and Quarry.*

Quarried a large amount of stone and teamed same to Canal bank for scows, also avel and stripping.

Put four new collar hole covers and crab block, caps and sheaves.

Made one new float, 14 x 4; one long rake, four new foot boards to head and foot tes; put on four hollow quoin stop blocks; put new frame protection fender to mp post; put two new valve screws in head and foot gates.

*Lock No. 21 and Level.*

Put in four iron collar hole covers and crab blocks, caps and sheaves, renewed ank-walk; put on new foot boards to gates; put on hollow quoin blocks; two new alve screws in foot gates.

Put iron hold back fastening to foot gates, drove 180 feet protection piles each de of lock at foot, put waling streaks on same; put old timbers behind piles for foot- ng for stone filling; put mud sills in bank, each side; framed and put tie timbers cross; opened 200 feet ditches, tow path side; raised 300 feet lineal tow path, nd 90 feet heel path; built cement walls and bridge over raceway; faced up slope t west side of lower entrance to lock with dry wall.

*Lock No. 22 and Level.*

Put on two crab block caps and sheaves, four hollow quoin blocks and one new ootboard on foot gate, reshingled storehouse, raised and shingled part of lock- naster's house.

Loaded up spare store-house for new air line ferry on raft.

Drove 320 lineal feet piling west side Keefer bridge, dug trenches, formed sills n bank; built new west side approach 180 feet long; faced behind piles with timber and stone, filled up gravel and macadamized road-bed on to bridge; rebuilt wall under towpath bridge across mill race.

Raised 500 feet lineal of tow path; built new bridge, bulkhead and head gates and cement walls on tow path, &c.; sheet piled same; sixty feet oak capping on head of bumping cribs, head of lock.

*Lock No. 23 and Level.*

Finished platform; one new float 14ft. by 4ft.; one new long rake; put new footboards to gates; four water stop blocks to gates.

Drove 250 feet protection piling across waste weir.

Opened 200 feet ditching; one iron regulating gate put in waste weir with screw attachments.

*Lock No. 24 and Bridge and Level.*

Put on four new collar hole covers and crab block caps and sheaves; new foot- boards to gates; renewed platform; four water-stop blocks put on, one crab block, &c.

*Lock No. 25 and Three-Mile Level.*

Put on new anchor to head gate, two new footboards to gate, four collar hole covers, one crab block cap and sheave; 46 feet oak coping to bumping cribs, four water stop blocks put on, one float 14ft. by 4ft., 14 feet new iron track plate under Hurt's Bridge, and put 35 feet waling, south-west side; put four new struts to hold up masonry head of Beaver Dam and Davis Culvert; rebuilt 14 feet culvert ice rack; took down and rebuilt west approach to Allanburg bridge, drove 12 guide piles Mar- latt's Pond.

*Allanburg Lift Lock.*

Took out old sill for gauging vessels and took off one course of masonry from breast wall.

*Allanburg Guard Lock.*

Cleaned out bottom of guard lock, put new steps and brasses under gates and relaid part of track; put new double suspension or adjusting bars to gates, with cross head and nuts to hold up toes of same.

*Welland Lock and Weir.*

Removed breast timbers from head of lock to give increased water way, drove 450 feet lineal protection piles front of weir, put double oak walings to same, removed the old waste weir bridge and built a new one in line, 12 feet wide, 79 feet long; put up dressed railing on one side and 12 by 12 fender along the other; rebuilt 20 feet of waggon track over aqueducts and reset valve screws.

*Feeder Junction to Dunnville and Port Maitland.*

This division extends from Dunnville to Port Maitland and to the junction with the main canal at Welland, a distance of 22⅔ miles, consisting of four stone waste weirs, one dam, one toll bridge, with 26 flood gates for wasting water over and through dam, one toll-keeper's house, 14 stationary bridges, of an aggregate length of 2,400 feet, 6 swing bridges, 3 locks, 2 lock-tenders' houses, 3 shanties, 2 sluiceways, 8 culverts, 1 fish-ladder, 2 piers and breakwater at Port Maitland, 1 lighthouse and a harbor 500 feet in width, admitting a vessel drawing 18 feet of water, also 600 feet of boom timber to protect waste weirs from ice jams during the spring freshets.

All gates on waste weirs and dam have been put in good working order.

All bridges have been put in good repair throughout.

A new and efficient swing bridge with two new approaches has been completed to carry roadway across canal in front of Canal street, Dunnville, and has proved to be a great convenience to the public.

The mitre sills of Dunnville Guard Lock, as well as those of Port Maitland Lock, have been cleaned out.

The old top timbers on Marshville and Cranberry Creek culverts have been cut down to water line and built up with new timbers five courses above said water line, and covered over with new timber.

The east pier at Port Maitland, under contract to R. F. Lattimore, has been rebuilt from low water line in a substantial and workmanlike manner.

The repair scow has been caulked and painted as well as a number of the bridges.

The rut holes on towpath and berm banks have been filled, and the banks widened and strengthened in many places; sunken logs and other debris have been removed out of bottom of canal, and the culverts cleaned out.

About 200 feet of the embankment across Grand River has been covered over with lake gravel approaching the Fall Bridge.

All the thistles and obnoxious weeds on the Government lands have been cut and all brush and rubbish that accumulated in drains have been cleaned out.

Up to the present date of the season there has been no scarcity in the supply of water for navigation and manufacturing and milling purposes, and the water in Grand River stands 4 inches below the level of 1842.

Owing to the mildness of last winter, coupled with the great scarcity of snow, the supply of wood brought out to the canal this season has been greatly diminished and consequently the traffic on the Feeder up to the present date has been much less than that of the corresponding period of last season.

*Generally.*

Scows removing earth and stone for raising and widening banks throughout; drains cleaned out and deepened; repaired barrows and scows, made several ladders, repaired and renewed chains, valves, wrist pins, brasses and screws in locks throughout; made 25 pike poles.

Put down snubbing posts throughout where necessary.
Renewed slash boards and face and fender planking to lock gates throughout.
nined and repaired valve pins and gearing to all gates, cut up and stripped
ry old gates.
Thistles cut on all Government lands throughout.
Blocked all bridges for winter and took all out again in spring.

## Fines, Damages, &c.

I have collected during the year from masters and owners of vessels the sum of 11.44 in fines for violation of canal regulations, and for damages to works, which ount I have handed H. H. Collier, Esq., collector for this port, and I append a ement of the above marked A. I also append a statement marked B, showing the atest and least depth of water on the mitre sills at Port Dalhousie and Port borne locks in each month during the year, also a comparative statement of the rage depth for the months of June, 1881 and 1882, which shows the water has n higher by 5 inches at Port Dalhousie, and 1 foot higher at Port Colborne than the same month in the year 1881.

### A.

ATEMENT of Fines and Damages collected from Vessels contravening Canal Regulations, for fiscal year ended 30th June, 1882.

| Date. | Name of Vessel. | Fine. | Damages. | Total. |
|---|---|---|---|---|
| 1881. | | $ cts. | $ cts. | $ cts. |
| y 20... | Schooner "Edward Blake"..... | 20 00 | ..... | 20 00 |
| pt. 12... | do "Albatross"..... | ..... | 11 44 | 11 44 |
| t. 7... | do "Guelph"..... | ..... | 10 00 | 10 00 |
| 1882. | | | | |
| ay 2 | do "St. Louis" (*new Canal)..... | ..... | 150 00 | 150 00 |
| o 5 | do do do ..... | ..... | 20 00 | 20 00 |
| ne 7 | Barge "Oriental"..... | ..... | 1,500 00 | 1,500 00 |
| | | ..... | ..... | 1,711 44 |

* Handed to W. H. Collier, Esq., Collector, St. Catharines.

### B.

STATEMENT showing the Depth of Water on the Lower Sill of Lock No. 1, Welland Canal, Port Dalhousie, for fiscal year ended 30th June, 1882.

| Months. | Lower Sill. Highest. | Lower Sill. Lowest. | Months. | Lower Sill. Highest. | Lower Sill. Lowest. |
|---|---|---|---|---|---|
| 1881. | Ft. in. | Ft. in. | 1882. | Ft. in. | Ft. in. |
| July..... | 13 3 | 12 8 | January..... | 12 7 | 11 10 |
| August..... | 12 11 | 12 5 | February..... | 13 0 | 11 11 |
| September..... | 12 8 | 11 10 | March..... | 13 8 | 12 5 |
| October..... | 12 1 | 11 8 | April..... | 13 11 | 13 2 |
| November..... | 12 4 | 11 9 | May..... | 14 8 | 13 5 |
| December..... | 12 2 | 11 10 | June..... | 14 8 | 13 11 |

| | Ft. in. |
|---|---|
| Average depth, June, 1881..... | 13 9 |
| do do 1882..... | 14 2 |

STATEMENT showing the Depth of Water on the Upper Sill of Lock No. 27, Welland Canal, Port Colborne, for fiscal year ended 30th June, 1882.

| Months. | Upper Sill. | | Months. | Upper Sill. | |
|---|---|---|---|---|---|
| | Highest. | Lowest. | | Highest. | Lowest. |
| 1881. | Ft. in. | Ft. in. | 1882. | Ft. in. | Ft. in. |
| July | 13 3 | 12 4 | January | 15 3 | 11 [illegible] |
| August | 13 3 | 11 9 | February | 14 7 | 11 [illegible] |
| September | 12 6 | 11 4 | March | 14 4 | 12 [illegible] |
| October | 13 2 | 11 5 | April | 13 11 | 11 1 |
| November | 13 7 | 11 4 | May | 13 11 | 11 1 |
| December | 14 4 | 11 4 | June | 14 4 | 13 [illegible] |

| | Ft. in. |
|---|---|
| Average depth, June, 1881 | 12 7 |
| do do 1882 | 13 7 |

## RIDEAU CANAL.

RIDEAU CANAL OFFICE,
OTTAWA, 25th September, 1882.

SIR,—I have the honor to submit the Annual Report on the state of the work under my charge for the fiscal year ending the 30th June, 1882.

Navigation closed at Kingston Mills and Ottawa on November 30th and 23rd respectively, and opened on 1st May, 1882, at Ottawa and Kingston Mills.

The season of 1881 opening with a good supply of water on all the reaches, the levels were fairly maintained until the close of navigation. The descending level to Kingston only fell 6 inches below navigation, and the summit level Little Rideau Lake kept its level to a few inches all through the season.

On the long reach between Burritt's and Long Island the water fell nearly a foot and we had in consequence to close down the Mills at Manotick; an attempt will be made this fall to stop the leakage of water at the Long Island Locks and the bulk heads.

Considerable expenditure was incurred in putting a dam across the head of the locks at Kingston Mills, in order to make repairs to sill and sluice ways to stop a heavy leakage.

The wing walls and sills were thoroughly overhauled, and the waste of water which at this point is entirely lost to the canal was prevented.

The Narrows Station will also require heavy repairs as soon as there is low water again in the Rideau Lake.

The season of 1882 opened with high water on all the reaches, and so far the levels are all fully up to navigable height.

A good many complaints are made by the owners of low lands adjoining the canal that reaches are maintained too high, but it is necessary if navigation is to be maintained that the spring height of the water should be kept up as long as possible; as evaporation during the summer months rapidly pulls them down.

A preliminary survey for the Tay Canal to connect Perth with the Rideau navigation was made last fall, a more detailed one is now in progress.

The principal repairs to the works were as follows:—

*Kingston Mills.*

New swing bridge, coffer dam at head of lock, repairs to masonry work. New bottom in recess, new stone house, and two long coping blocks.

*Chaffeys.*

epairs to lower gates, and four chain blocks.

*Narrows.*

ew storehouse.

*Smith's Falls.*

lasted rock in basin to stop leakage.

*Edmonds.*

ockmaster's house shingled.

*Merrickville.*

air of new gates framed and put in, and two approaches to basin.

*Burritt's Rapids.*

Repairs to lock gates, 15 yards of gravel on them, new pier at bulkhead to keep
l on dam.

*Black Rapids.*

Renewed Bulkhead on west side, and furnished stone to build wing wall.

*Ottawa.*

Pair of new gates framed and put in, eight new ladders for stations on line, one
e box for station, pointing locks, &c.

*Canal Basin.*

Raising and replanking wharves.
The works are in good working order, and the traffic both in passengers and
ht is showing a material increase.

I have the honor to be, Sir,
Your obedient servant,

FREDERICK A. WISE,
*Superintending Engineer.*

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## TRENT CANAL.

ENGINEER'S OFFICE,
PETERBOROUGH, 8th November, 1882.

SIR,—I have the honor to submit my Annual Report on the works under my
rge for the fiscal year ended 30th June, 1882.

The water on the several navigable stretches composing this inland navigation
m July 1st to close of navigation, could not be maintained at its standard level,
. 5 feet on the lock sills, owing in a great measure to the irregular manner in
ich the supply on the main feeder was regulated. The reservoir dams which are
oo limited dimensions of these feeders were erected partly by the lumberers of
district and partly by the Ontario Government, and are therefore chiefly used to

facilitate the descent of timber, and consequently the water is run off the reservoirs at a period not in accord with the requirements of the demand on the main line of navigation. This I venture to bring to the notice of the Hon. the Minister, especially at this time, when the improvements of this inland navigation are being prosecuted.

Navigation closed on November 25th and opened March 15th.

The traffic through the locks was carried on unceasingly. The total number of lockages was 1,819, the greatest at a single lock being 1,427.

*Lindsay.*

The works at this station, which is situated on the River Scugog, a branch of the main line of navigation, consists of a dam 280 feet long, 30 feet base and 9 feet high; a composite lock 134 feet between the gates, 33 feet wide with 5 feet water on lower mitre sill when water is level with apex of Bobcaygeon Dam.

No repairs to these works have been executed by the Department during the past year. The dam requires to be kept tight so as to retain the water at a navigable height on the stretch to Port Perry, at head of Lake Scugog, on which a considerable business is done, in towing saw-logs to the mills.

*Scugog River.*

The removal of the snags and sunken logs that remained in the river after the date of my last annual report, was completed, and has benefitted the navigation of the river very materially.

*Bobcaygeon.*

The works at this station consist of a lock 134 x 33 feet, built of ashlar masonry, with 5 feet water on lower mitre sill.

A canal 973 feet in length.

A dam 1,262 feet in length, 12 feet base and 6 feet high, 794 feet of which is crib work, the remainder being truss work and 13 feet wide.

The lock received new upper gates during the past year. The dam was temporarily repaired, a glance constructed below the lock, and a breach that occurred in north bank of canal built up.

A new dam is absolutely necessary as it is impossible to hold up the level of Sturgeon Lake with present old one. The canal and lock require new flooring the leakage being very great, so much so that the current in the canal impedes to a great extent the passage of "Tows."

The lock requires new lower gates. The traffic through this canal for the past year has exceeded that of any year since its erection.

*Buckhorn.*

The works at this station consist of a dam 387 feet long in the clear, 28 feet base and 5 feet 3 inches high.

A slide 85 feet long, 33 feet wide, 2 feet draught with guide booms, piers, &c.

The slide and booms are under the control of the Department of Public Works.

The repairs executed here during the past year, consisted in rebuilding the dam from big sluice to sluice, a length of 186 feet from west pier of sluice to east pier of large slide, a continuous line of crib work was constructed on down stream side of dam 186 x 5 feet. The portion of dam between west pier of slide and east pier of little sluice rebuilt, size 23 x 12 feet, and the portion of dam between the west pier of little sluice, and the portion of main dam, constructed of stone work, was also rebuilt and 700 yards of gravel laid on dam.

The slide, booms, &c., are undergoing extensive repairs under the Department of Public Works, and when those are completed the works at this station will present a very creditable appearance, and will compare favorably with any of their kind in the country.

*Burleigh.*

The works at this station, consisting of dam, slide and waste way, were erected usively for the descent of timber, and in the interest of the lumber trade are not er the control of this Department, but the contemplated improvements to the gation at this point, consisting in the construction of locks and dams for which contract has been awarded, will come under its control.

*Young's Point.*

The works here consist of a lock 134 x 33 and 5 feet water on lower mitre sill, m, slide, and guide booms. The lock was erected by the Government of the vince, and the dam &c., by private enterprise. As this is a station on the main of navigation, and one at which the water level can be controlled to no small ent, I would respectfully suggest the advisability of the Department assuming trol thereof, so that there may be no division of jurisdiction as at present. It be impossible to manage the water levels satisfactorily on the reach between e and Burleigh, when the improvements at Burleigh are completed, unless they under one controlling power.

*Lakefield.*

The dam here is the property of private individuals, it retains the water in tchiwannoe Lake at a navigable height up to Young's Point Lock, a distance of out 6 miles, on which there are two steamboats constantly employed in towing nber, grain, &c. The navigation of this stretch is entirely dependent on the dam, d the owners having control thereof, they can at any time lower the water level d stop navigation, it is therefore advisable, in the public interest, that this dam ould become the property of the Department.

*Peterborough.*

The banks of sawdust and slabs that accumulated in the river and formed structions to the steamboat navigation are being raked into deeper water. This ork is being carried out under the direction of the Department of Public Works r which an appropriation was granted last session of Parliament.

*Little Lake.*

The piers and booms at this station, being exclusively for the benefit of the mber trade, are under the control of the Department of Public Works.

*Whitlaw's Rapids.*

The works at this station consist of a lock 134 x 33.

Wing dam 323 feet 6 inches long, 12 feet 6 inches high. Cross dam 160 feet long feet high, with slide, waste ways, and guide booms. The repairs executed consisted n extending the approach to lock from below a distance of 50 feet, and completing epairs to mitre sill.

Enlarging sluice area in gates to double their former capacity, this enables a ockage to be made in four minutes, and clearing lock chamber.

*Hastings.*

The works at this station consist of a lock 134 x 33 feet, 5 feet water at lowest stage and 6 feet 9 inches lift.

A dam 253 feet long 7 feet 6 inches high.

A slide 95 feet long 33 feet wide.

A swing bridge across lock chamber 68 feet long 13 feet wide.

The lower mitre sill of lock which leaked badly was repaired, this necessitated the employment of a diver. The guide booms and slide are under the control of the Department of Public Works. The swing bridge received new braces and the turning gear refixed. The tail gates of lock worked hard and were repaired.

The guard leading to the lock in the upper level is in a decayed condition, and requires entire renewal.

The approaches to the swing in the railway bridge across the river are being carried out by the Company, all the piers required on the south side are placed in position and the fenders are about being erected.

*Heeley's Falls.*

The works consist of a dam 488 feet long, 33 base and 8 feet high, slide 300 feet in length 33 feet wide, with guide booms &c. This dam maintains the navigation up to Hastings, a distance of 12 miles. The slide and guide booms are under the control of the Department of Public Works.

*Middle Falls.*

The works here consisting of two dams, slides, booms, &c., being entirely for the benefit of the lumber trade, are under the control of the Department of Public Works. In the year 1855 they were transferred to a committee of lumbermen who were authorized to collect tolls on timber, logs &c., descending the river, and make annual statements to Government of the amounts collected and expended on repairs to the works; these conditions were carried out until the year 1871, when they failed to comply with the terms of the transfer, and since then they have made no returns whatever, in fact the committee has ceased to exist, and whatever repairs have been executed on these works have been done by the Government.

*Campbellford.*

The piers and guide booms here are under the control of the Department of Public Works.

*Chisholm's Rapids.*

The works erected here consist of a canal, one-half mile long, 60 feet wide. Lock 134 ft. x 33 ft., 4 ft. 8 in. water, on lower mitre sill at lowest stage of water. A dam 715 feet long, 6 feet high, slide 50 feet wide, with guide booms. The slide and booms are under the control of the Department of Public Works. The new lock gates are being stepped and gearing erected for working them.

The lower mitre sill is being repaired, and also the flooring of lock; to do this effectually, it will be necessary to employ a diver. A new steam barge has been placed on this navigable stretch, viz.: from Chisholm's to Myersburg, and Frankford; and, I am informed, is constantly engaged in towing.

The Central Ontario Railway has applied to the Department of Public Works, and obtained permission, to erect a bridge across the river at this point. This railway has also to cross the canal; it will, therefore, be necessary for the Company to make application to this Department for authority to do so, and submit plans of bridge for approval.

I would here remark before concluding, that new life and energy has sprung up all along the line of the waters, business has increased on all the stretches, with, perhaps, one exception, and the contemplated improvement in extending the navigation

s imbued the boat owners with a certain confidence, that did not exist before. The tal number of lockages made this year, being 1,819, against 1,420 last year.

I have the honor to be, Sir,
Your obedient servant,

THOMAS D. BELCHER,
*Superintending Engineer.*

. P. Bradley, Esq.,
Secretary Department of Railways and Canals,
Ottawa.

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Cornwall, 15th November, 1882.

. P. Bradley, Esq.,
Secretary Department Railways and Canals,
Ottawa.

Sir,— have the honor to report upon the canal works and surveys under my harge for the fiscal year 1881-82, and up to this date.

## Murray Canal.

This work is situated in the County of East Northumberland, about 75 miles vest of Kingston, and is designed, by opening a navigable channel through the Isthmus f Murray, to connect the head waters of the Bay of Quinté with Presqu'ile Bay on the orth shore of Lake Ontario, to which point it will in effect prolong the navigation f the River St. Lawrence, by affording means of avoiding the circuitous and danger- us route south of the Peninsula of Prince Edward.

The construction of the canal was authorized by Parliament in the session of 881, and location surveys, commenced in June following, were completed early in he present year, *vide* my report to the Chief Engineer appended hereto, in which ll the routes examined or located are fully described and that having its westerly ntrance in Presqu'ile Harbor recommended for construction.

Further surveys were afterwards made (March, 1882) to test the alleged advan- ages of certain short lines near the carrying place between Weller's Bay and the Bay of Quinté, these surveys resulting in the report previously submitted being confirmed.

The Presqu'ile route, as located, was adopted by Order in Council in May last, and tenders for a canal 80 feet wide on bottom were received by the Department to the 22nd June, the work being subsequently (24th August) awarded to Messrs. Silcox & Co., contractors, of Welland, Ont., and Syracuse, N. Y., to be completed on the 1st July, 1885. Valuators were also appointed on the 24th August, and the greater portion of the lands required for the canal have since been expropriated. Excavation was commenced on the 1st September, and has since been vigorously prosecuted.

## Trent Valley Canal.

This work, as originally projected in 1835, extends from the Bay of Quinté on Lake Ontario to the Georgian Bay, Lake Huron; and in its course of over 200 miles skirts or intersects portions of the Counties of Hastings, Northumberland, Peterborough, Victoria, Ontario, Simcoe and Muskoka.

A preliminary survey, and examination of the rivers and lakes lying along the main line of water communication as recommended by Mr. N. H. Baird, C. E., in 1833-35, was commenced last year, under the appropriation voted by Parliament in the session of 1881, and definite information obtained as to the alleged advantages

which the new lines from time to time suggested would present over the original scheme of Mr. Baird, *vide* my Progress Report to the Honorable the Minister, which I beg to append hereto.

Location surveys were commenced in the month of August last at Lakefield, and they are now being continued south towards Percy Landing *viâ* Hastings, and location surveys were at the same time commenced at Balsam Lake, the summit, and continued north by the valley of the Talbot River to Lake Simcoe, and from thence *via* Lake Couchiching a survey is now in progress to Matchidash Bay on the overland route examined in 1881. An exploratory survey of the northern lakes and tributaries, as connected with the question of future water supply, has been commenced.

### Trent Navigation.

During the last session of Parliament it was decided by the Government that, pending the completion of the surveys, an early commencement of the work of construction would be desirable; and, inasmuch as the information obtained during the preliminary examinations of last season was considered sufficiently comprehensive and accurate to warrant the opinion that the main line of water communication recommended by Mr. Baird was the most practicable, an appropriation was accordingly voted during the session towards the construction of the Burleigh, the Buckhorn, and the Fenelon Falls Canals, all which works are situated on the main line above mentioned, and are also links in the chain of lakes (known as the Back Lakes) and necessary to render their navigation continuous. The preliminary surveys at these points were only commenced in May last, and although rapidly completed the various works were with much difficulty located by the 10th August, the time named in the advertisement for exhibiting the plans, &c.

The tenders were received by the Department up to the 24th August, and the contracts were subsequently awarded as under, viz:—

Burleigh Canal—George Goodwin, Contractor, of Grenville, P.Q., 27th September, 1882; to be completed 1st July, 1885.

Buckhorn Canal—George Goodwin, Contractor, of Grenville, P.Q., 27th September, 1882; to be completed 1st September, 1884.

Fenelon Falls Canal—A. F. Manning & Co., Contractors, Toronto, 14th October, 1882; to be completed 1st July, 1885.

The Land Valuators were appointed 7th October, and have since fully entered upon their duties.

Work was commenced at Fenelon Falls on the 16th October.

In connection with the canalization of the Back Lakes the Department has taken preliminary steps to expropriate the Lakefield Dam, situated at the head of the Otonabee River, and by means of which the level of Lake Katchiwannoe, or the reach next below Youngs' Point Lock, is regulated and the navigation to Lakefield maintained.

The works of construction (on the Back Lakes) now under contract may be thus briefly described.

### Burleigh Canal.

This canal, the first in the new series, is situated in the County of Peterborough, on the southern limits of the Laurentian formation, and in a comparatively unsettled part of the country. The works extend over a distance of about two and a-quarter miles, *i.e.*, from Deer Bay to Stony Lake, including the Burleigh River and Lovesick Lake and Rapids, and are designed by means of locks and dams to create slack water between those points, and thereby complete the navigation downwards *viâ* the existing lock at Young's Point to the village of Lakefield, and upwards through Deer Bay Lake to Buckhorn Rapids, the site of the next works in ascending order.

### Buckhorn Canal.

As at Burleigh, these works are also situated in the County of Peterborough, on southern limits of the Laurentian formation, and on the north side of Buckhorn ids, in the settlement known as Hall's Mills, and extend over a distance of about uarter of a mile, connecting Deer Bay with the waters of Buckhorn, Pigeon and l Lakes, and by means of the locks at Bobcaygeon and Lindsay with Sturgeon Scugog Lakes, and the proposed works at Fenelon Falls, the last in ascending er.

### Fenelon Falls Canal.

This canal, the last in the new series, is located on the north side of the Fenelon er, near the centre of the village of Fenelon Falls, in the County of Victoria, and ends over a distance of about one-third of a mile, connecting Sturgeon Lake with neron's Lake, and by means of the existing lock at Rosedale with Balsam Lake l the Village of Coboconk, on Gull River.

The works consist of the execavation of the lock pits and canal, chiefly through ıtified lime stone rock, the masonry and foundations of two locks, the formation of )roaches thereto, the construction of landing piers at the lower, and of a rock wing n at the upper, entrances; widening and strengthening the existing mill dams .h rock from the excavation, and building the requisite piers, &c., for swing dges at the central span of the Victoria Railway Bridge, and also at the upper lock line of Colborne Street.

The general dimensions of the new lock are: length between hollow quoins, 134 t; width between chamber walls on floor, 33 feet; depth on mitre sills—lowest .ter, 5 feet.

The existing structures to be utilized hereafter in completing the Back Lake vigation, comprise :—

1. The Lakefield dam,
2. A Lock and Dam at Young's Point,
3. The Buckhorn Dam,
4. A Lock and two Dams at Bobcaygeon,
5. A Lock and Dam at Lindsay,
6. The Fenelon Falls Dam,
7. A Lock and Dam at Rosedale (Balsam River).

The general dimensions of the locks approximate closely to those adopted for e new works.

The locks at Young's Point, Lindsay and Rosedale, were constructed by, and are ıder the control of, the Provincial Government.

## UPPER ST. LAWRENCE.

### Galops Rapid Improvements.

This work is situated near the head of the Galops Canal, about seven miles east Prescott, and consists in the formation by submarine excavation of a straight ıannel 3,300 feet long, and 200 feet wide, through the rapid, and adapting it to a 14 ot navigation. To accomplish this, certain shoals are crossed which are principally f limestone rock, and are of the aggregate width, in line of channel, of 1,800 feet.

These shoals are required to be reduced to such an extent as will afford at low ater, the respective depths of 16 and 17 feet.

The following description of the proposed new channel is taken from my Report ) the Chief Engineer, 26th December, 1876.

Commencing in the deep water below Flat Rock, and proceeding downwards, he first obstruction encountered is a ledge of rock called the Upper Bar, which xtends across the main channel, from the pier-head of the canal to the foot of ıdam's Island. The current over it is about seven miles an hour.

Its general level is six feet below the sill of lock 27, *i. e.*, there is, in low water, a depth of 15 feet on it, but in mid-channel and at other points, the ledge is elevated from three to four feet above its general level, which would have to be removed.

The operations with the chain vessel at this point, and also at the North Shoal next below, would be subject to frequent interruptions by the passage of vessels. This is also the only practicable route for rafts, which, when passing (unless towed by steamers) nearly block up the channel.

The "North" Shoal lies about 1,300 feet below the Upper Bar, and abreast of the guard lock; it is of rock, and extends across the main channel from the canal bank, facing the upper bar and is the cause of the current, which sweeps the north shore of Adam's Island, dividing and setting strongly south to Capstan Point, and north towards the Chute.

The point of this shoal seems to be the limit of the eddy below Adam's Island.

The least depth of water on it is 10 feet 3 inches, or relatively 1 foot 3 inches below the sill.

It is feared that drilling operations here will be very difficult, owing to the strong eddy and opposing current.

Next in order is the South or Caledonia Shoal, lying 150 feet south of the point of North Shoal. Its northern edge merely skirts the southern limits of the proposed channel.

South Shoal lies in front of the "Gut" Channel, and, together with the North Shoal, is doubtless the cause of the strong eddy below the Island. A dam across the Gut would destroy this eddy, and greatly facilitate the operations of the chain vessel.

The "Island" Shoal is 600 feet below North Shoal, and over-laps the deep water between it and South Shoal. A strong current, both from the "Main" and Gut Channels, sets south over it.

Like the other shoals it is of solid rock. A sounding of 9 feet 9 inches was obtained at one point on it, but its general surface has a depth of 12 feet over it, and is 3 feet below the sill of lock 27. Owing to the steady current across this shoal, drilling operations will be not difficult.

The "Lower Bar," 750 feet below the Island Shoal, is a ledge of rock extending from the canal bank to Capstan Point.

Here the current in the pitch exceeds 10 miles per hour.

The edge of the north channel is distinctly marked by a large breaker, called the "Chute," on the rock immediately above which the depth of water is only 6 feet, and north of it, in the channel, 10 feet.

In the southern channel, or that near Capstan Point, the deep water is marked on the north side by a succession of smooth, heavy swells, the first of which is known as the "Cave" on the northern edge of which a depth of 7 feet 6 inches was found, whilst south, between it and Capstan Point, the least depth was 11 feet 6 inches.

The space between the "Chute" and the "Cave" is shallow, varying from 7 feet to 9 feet, below which the bar is covered here and there with boulders.

On the bar the water is turbulent in low stages of the river, and although drilling operations with the chain vessel have succeeded here, they are attended with much difficulty and danger, owing to the swiftness of the current both above and below the pitch, particularly above.

In connection with this work a chain tug was constructed in the spring of 1876, with a view to test the practicability of a system of submerged chain towing in the rapids, and also for the purpose of examining and sounding, and of subsequently being utilized in drilling or dredging operations in the rapids of the St. Lawrence. The chain tug arrived at the Galops on the 23rd August, 1876, and was engaged in experimental operations until the close of the season, when she was towed to winter quarters at Prescott.

## 1879.

The work of improvement of the channel through the Galops Rapid was let to

srs. William Davis & Sons, of Ottawa, 5th August, to be completed 1st June, 1881, on the 7th November following, in accordance with the conditions of their con- t, the chain tug was delivered to them, to be taken to Montreal, for alterations repairs.

A caretaker appointed by the Department accompanied the vessel, and has ained on board ever since.

1880.

A great part of this season was occupied by the contractors in making the essary alterations and repairs to the chain vessel.

Drilling and blasting operations were, however, commenced on 28th September, on Island Shoal, and the dredging machinery tested at intervals until the season ed, when the chain vessel and plant were laid up in the Galops Canal, 23rd vember.

1881.

At the commencement of the season the chain vessel was again taken to Mon- al for alterations and additions to her machinery, work therefore was not com- nced until 22nd June; satisfactory progress was made during the remainder of the son. The vessel and plant were laid up for the winter in the eddy at the foot of am's Island, 28th November.

1882.

Operations were commenced this season at an earlier date (April 26th), owing the chain vessel having been wintered on the work.

On the 30th June with the sanction of the Government, Messrs. Davis & Sons trans- red the contract for the Galops works to Messrs. E. E. Gilbert & Sons of Mon- al. The Messrs. Gilbert had initiated and conducted the sub-marine blasting and other operations for the contractor from the inception of the work.

They also designed and constructed the chain tug for the Department. In gust the torpedo boat (or drill scow) was added to the plant employed, and further provements made in the machinery of the chain vessel, specially adapting her for edging, for which purpose she is now chiefly employed.

The contractors force is now well organized, and after many and great difficulties ve been overcome by them, it may here be stated that they have the work in per- ct control. A cutting or gullet through the "Island Shoal," 100 feet wide and of e full depth specified, will be completed this season, representing a total quantity say 6,500 cubic yards of rock blasted and dredged since the work was commenced 1880.

It may safely be assumed, therefore, that the practicability of the undertaking as been satisfactorily established.

## Williamsburgh Canals.

In consequence of an increased supply of water to the Rapide Plat Canal having ecome necessary, as well for purposes of navigation as to maintain or augment the xisting water-power at the Village of Morrisburg, an examination and survey aving this object in view was ordered by the Department, and subsequently a report, ogether with an estimate based thereon, was submitted by me in March, 1880.

An appropriation for the construction of new weirs, &c., was voted at the last ession of Parliament in connection with the above.

The work has not yet been commenced.

## Cornwall Canal.

The contract for Section No. 1 of the enlargement was let August 23rd, 1876, to Messrs. Gordon, Woodward & Chamberlin, of Sherbrooke, P.Q., to be completed 25th

April, 1879. This work was fully reported upon November 30th, 1879, at which date the works remaining to be done to complete the contract consisted of:

Raising the walls of Lock No. 17 and the adjoining supply weir, and the banks of the head race to the mills;

Raising the north bank and the towing path of the old canal;

Removing the old culvert or tunnel, and the waste weir, and that portion of the old towing-path included in the upper basin, and connecting the new and old parts of the sewer under the canal. Also of the undermentioned unfinished work on the enlargement, viz.:

The coping of both locks; superstructure of south pier of entrance channel; extensions of wings of both locks, slope wall and culvert north side of basin, and rip rap walls in discharge race. Also excavation in north slope of basin and towing-path in cuttings, discharge race from weir, levelling north side of lower entrance, the removal of coffer-dam and old spoil bank in upper basin.

The building of five cribs of various lengths at lower entrance, and the towing path and foot bridges connected with regulating weirs; also sluice gates and fixtures for weir, and the mooring posts for locks, basin and lower entrance.

The whole of the above mentioned work has been completed with the exception of the following items ordered to be left in abeyance, viz:—

Raising the walls of Lock No. 17; stone for the purpose has been delivered and dressed.

Removing the old culvert or tunnel; this has only been partially effected.

Removing the old towing path in upper basin—a portion lying to the east of old culvert has not been removed.

Raising the banks of the head race to the mills; these banks are to be raised by the mill owners interested. The gates and fixtures for the enlarged locks, (the subject of a separate contract) have been hung, and one pair of spare gates built and moored in the upper basin.

The enlarged canal was first used October 20th, whilst Lock No. 15, the old entrance lock, was disabled, the steamers "Corsican" upward, and "Passport" downward bound were locked through.

The work on Section No. 1, of the enlargement may now be considered as completed. The construction of a sewer extending from Marlborough Street (originally the eastern limits of the Town of Cornwall) westerly along the canal limits to the old culvert, was authorized at the last Session of Parliament. This work will, it is said, be commenced and carried on during the ensuing winter. Water-power from the canal has recently been granted by the Department to the Toronto Paper Manufacturing Company for their new works situated on the north side of the canal opposite Lock No. 18, and outside the limits of land required for the proposed enlargement.

The water will be taken from the reach above the lock, and returned into that below (the Cornwall Reach) through the existing By-wash.

I have the honor to be, Sir,
Your obedient servant,

TOM S. RUBIDGE,
*Engineer-in-charge.*

# APPENDIX No. 6.

RIDEAU CANAL OFFICE,
OTTAWA, 10th November, 1882.

SIR,—As requested by your letter No. 79,277, I have the honor to report upon the progress of the Tay Canal survey up to the end of the fiscal year ending June 30th, 1882.

By letter No. 55,811, May 31st, 1881, I was authorized to have a survey made with a view to the construction of a branch canal from the Town of Perth to the Rideau Canal.

The Town of Perth in 1834 was connected with the Rideau Lake by a canal constructed on the line of the River Tay, which flows from Perth and empties into the east end of the Rideau Lake, a distance of about ten miles.

This Canal was built by the "Tay Navigation Company," who were incorporated by the Legislature of Upper Canada in 1831, Sec. 1, Wm. IV., Chap. II, Local and Private Acts of U. C.

The works consisted of five separate locks, lifting in all 28 feet, the levels of the different reaches being maintained on the same principle as on the Rideau Canal, by flat dams built across the river at different points, causing the flooding of a considerable amount of low lands.

The total length of the canal proper from Perth to Port Elmsley, where the level of the Rideau Lake is reached, being 8½ miles.

The locks were constructed of rubble masonry faced with stone, 100 feet between quoins and 20 feet in width, with 4 feet water on their sills; amount expended being about $17,000, I understand.

The canal has long since been abandoned for any boat traffic, and hardly a vestige of the locks remain; the dams, however, with the exception of one, are still serving the purpose of keeping up sufficient water to run logs down.

There are at present, at the Port Elmsley end of the canal, a cloth factory, grist mill and two saw mills worked by water power.

On commencing operations, no plans of the original canal could be found, neither could I obtain any reliable plan of the river. It was, therefore, necessary to go over the whole ground, and make a survey from Perth to Port Elmsley.

By reason of the tortuous character of the river, the dense swamps (formerly drowned lands), coming down on either side to the edge of the river, and extending back for more than a mile in places, involved a large amount of labor in cutting out the lines, before any plan of the river and the locality of the different works could be ascertained.

From the survey the following information as regards the original canal was obtained:

Taking zero as the level of low water in the Rideau Canal, the levels of the several reaches ascending from Port Elmsley towards Perth were as follows:—

| | LIFT. Ft. In |
|---|---|
| Lock No. 1, Port Elmsley | 6 0 |
| " " 2, Gemmel's | 8 0 |
| " " 3, Weatherhead's | 9 0 |
| " " 4, McTavish's | 3 0 |
| " " 5, Tebbs' Cut | 2 0 |
| Total Lift | 28 0 |

The distances on the line of canal and river were :

| | Miles. |
|---|---|
| From the Rideau Lake to Port Elmsley | 1½ |
| " No. 1 to No. 2 Lock | ½ |
| " " 2 " " 3 " | 1½ |
| " " 3 " " 4 " | 1½ |
| " " 4 " " 5 " | 3½ |
| " " 5 " Perth | 3½ |
| | 10 |

Giving 10 miles of river and canal navigation with five locks, lifting 28 feet.

From Lock No. 1 to Lock No. 4, the banks of the river being rock and comparatively high, no difficulty would be met in reconstructing on the old line of the canal, so as to give 5 feet water on the sills of the new locks.

The mills at Locks 1, 2 and 3, drawing their water direct from such short and narrow reaches, would not be admissible on a new canal, they would, therefore, require to be bought out, if they have any rights to a constant supply.

Between Locks Nos. 4 and 5 a large quantity of low land occurs. This land was permanently drowned by the old dams at No. 4 Lock (now down).

These low lands were, at the time of the construction of the canal, mostly owned by absentees who never made any claim on the Company for compensation

The patents for most of the lots along the canal being issued twenty years before the charter was given, the deeds were given after the land was flooded by the canal.

It is, therefore, a legal question whether the Company, having thus enjoyed the easement and privileges of overflowing these lands for so many years they could now be sustained in the right to do so again.

These lands, even now the dam is down, are so low that they have not been improved, and are worthless, being in the spring impassable.

There can, therefore, be no serious objection in holding the same water on this reach as formerly, and re-drowning these lands, thus reducing the work to a minimum to get the required depth.

Between Lock No. 5 and Perth the level of this reach was kept up by a dam at Tebb's Creek to the level of 28 feet above Port Elmsley.

This level could not now be maintained, as it would, in spring floods, overflow a large amount of lands adjacent to and in the Town of Perth, which, from the improvements now made on them would be out of the question.

It is, therefore, proposed to lower the bed of the river where necessary, to obtain the required depth.

This will involve a considerable amount of rock excavation. It is, however, of a shaly character, and easily quarried. To restore the canal on the former line of the Tay, suitable to navigate boats which now run on the Rideau navigation, would involve the following works :

1. Rebuilding four stone locks of increased dimensions, not less than 126 feet in length between quoins 26 feet wide, and with 5 feet water on their sills.
2. The rebuilding of four dams and weirs.
3. Excavating a channel in rock between Locks Nos. 3 and 4.
4. Excavating a channel in rock and clay between Lock No. 4 and Perth.
5. The purchase of the rights of the mill-owners at Locks Nos. 1, 2 and 3.
6. The purchase of any legitimate claims for re drowning the lands.

My attention, on the other hand, was drawn to an alternative route by leaving the river about a mile and a-quarter above the fourth lock, and making an artificial canal of about a mile in length to Beveridge's Bay on the Rideau Lake.

This shortens the route very considerably, and the elevation is overcome by two lift locks of 13 feet each, within half a mile of one another.

A survey was made with results that shows the route is perfectly feasible, not more costly, and, as far as navigation is concerned, unquestionably the best.

The works required on the deviation will be as follows:—

1. Dredging an entrance from the Bay to Lock No. 1 (new route), and building trance piers.
2. The construction of two locks of 13 feet lift each, with 5 feet water on the sills.
3. The excavation of a channel 30 feet wide at bottom, with slopes of 2½ to 1, out 6 feet deep, for a distance of 1,400 feet to Lock No. 2 part clay and rock.
4. The excavation of a channel, average depth of 5 feet of clay and rock to the ay River, a distance of over 4,000 feet.
5. The construction of a dam on flat rock a short distance below where the pro- osed deviation leaves the river, in order to raise the level to the same height as rmerly.
6. From the Tay River to Perth the deepening of the channel is common to both outes.

The length of the canal and river navigation by this route will be about seven iles from Perth to the Rideau Lake, a further reduction as regards distance of early two miles can be made by making cuts across the worst bends in the river.

The surplus water not required for navigation will be discharged over the flat am and furnish the power to drive the present mills below it.

The supply of water coming down the "Tay" to meet the losses from evaporation, aste and lockage has not been questioned.

The source of the Tay rises in lakes some thirty miles west of Perth, and the otal area drained by the Tay is over 200 square miles.

There are, however, several private mills, one at Perth and five or six above, which have dams across the river, their mill ponds not being large. I do not think heir shutting down at night or for repairs would affect the level of the canal. Nevertheless, it would be expedient that the Government should have command of he whole river, controlling, as they do now, the outlet of some of the larger lakes the Tay is fed from.

So much time being taken up in making the survey of the river, running the necessary line of levels, and getting the approximate extent of the drowned land, the work of cross-sectioning the river and other necessary details had to be postponed until this year.

The estimate must necessarily, be an approximate one, but I do not anticipate it will exceed $150,000.

The Town of Perth is the centre of a very large mineral country, which is just commencing to be developed, and it is urged that the construction of this canal will be a great benefit to that industry, bringing back as return freight from Kingston, coal and other heavy freight, which can be brought cheaper by water than rail. A freight and passenger boat will also be put on the route when completed.

I have the honor to be, Sir,
Your obedient servant,

FRED. A. WISE,
*Superintending Engineer.*

A. P. Bradley. Esq.,
Secretary, Railways and Canals,
Ottawa.

OTTAWA, 17th October, 1882.

SIR,—Traffic through the St. Peter's Canal for the season of 1881, terminated on the 31st December, and that of the season of 1882 commenced on the 5th May.

The following is a statement of the number and tonnage of vessels which passed through the canal during the fiscal year ended 30th June, 1882:—

| Month. | No. of Vessels bound North. | Tonnage. | Amount collected for Tolls. | No. of Vessels bound South. | Tonnage. | Amount collected for Tolls. |
|---|---|---|---|---|---|---|
| 1881. | | | $ cts. | | | $ cts. |
| July | 66 | 3,262 | 75 30 | 52 | 2,861 | 74 29 |
| August | 63 | 2,224 | 74 15 | 43 | 3,212 | 47 25 |
| September | 71 | 2,914 | 44 00 | 59 | 3,220 | 83 00 |
| October | 95 | 2,122 | 65 15 | 78 | 4,231 | 56 25 |
| November | 55 | 2,641 | 61 12 | 48 | 1,840 | 60 13 |
| December | 38 | 2,027 | 35 42 | 21 | 1,841 | 43 55 |
| 1882. | | | | | | |
| May | 18 | 1,090 | 26 00 | 15 | 874 | 17 00 |
| June | 72 | 2,812 | 43 30 | 54 | 1,841 | 42 30 |
| Totals | 478 | 19,092 | 424 44 | 370 | 19,920 | 423 71 |

*Recapitulation.*

| | |
|---|---|
| Total number of vessels | 848 |
| Total tonnage | 39,012 |
| Total collected | $848 21 |

I have to report that the canal has been in good working order during the year. To facilitate the passage of vessels during the night, lights have been placed at the entrances and at points on the canal where most required. Mooring buoys have been placed in St. Peter's Bay and the Bras d'Or for the convenience of vessels entering or leaving the canal during rough weather. A small expenditure has been made in making a road from the lock to the haul over road.

I have the honor to be, Sir,
Your obedient servant,

HENRY F. PERLEY,
*Engineer in charge.*

A. P. BRADLEY, Esq.,
Secretary Department of Railways and Canals.

# APPENDIX No. 7

## STATEMENT of Contracts entered into between 1st July, 1881, and 30th June, 1882.

| Railways and Canals. | No. of C. P. R. Contract. | Deed, Letter or otherwise under which contract was made. | Name of Contractor. | Date of Contract. | General Description. |
|---|---|---|---|---|---|
| Canadian Pacific Railway..... | 89 | Deed No. 6,639..... | John Patterson..... ..... | Aug. 22, 1881 | To construct station houses and freight buildings on line from Emory's Bar to Savona's Ferry, British Columbia. |
| do do ..... | 90 | do 6,472..... | Ferris, Paul & Milwarg ..... | May 17, 1880 | For freight of Engineers' supplies from end of track on Section 15 to Contract 42. |
| do do ..... | 92 | do 6,623..... | Andrew Onderdonk & Co..... | Feb. 22, 1882 | To construct road from Emory's Bar to Port Moody. |
| do do ..... | 93 | do 6,635..... | do ..... | do | To supply and erect iron bridge over the Fraser at Lytton, B.C. |
| Intercolonial Railway..... | ..... | do 6,584..... | James Crossen..... | Nov. 21, 1881 | To construct and deliver at Chaudière Junction 3 first class passenger cars. |
| do ..... | ..... | do 6.585..... | Dubs & Co..... | do | To construct and deliver on the track at Halifax 10 locomotive engines. |
| do ..... | ..... | do 6,602..... | James Harris & Co..... | Dec. 16, 1881 | do 100 gondola cars and 50 box freight cars. |
| do ..... | ..... | do 6,608..... | Barrows & Co..... | Jan. 9, 1882 | do 100 do of 40,000 lbs. capacity. |
| do ..... | ..... | do 6,645..... | Ontario Car Co..... | March 4, 1882 | do 3 second class passenger cars. |
| do ..... | ..... | do 6,657..... | Carrier, Lainé & Co..... | Jan. 16, 1882 | do 100 box freight cars, 33 ft. long, and 50 box freight cars, 29 ft. long. |
| do ..... | ..... | do 6,808..... | Charles Powell ..... | May 23, 1882 | To convey freight by Packet between Point du Chêne, Shediac, and Richibucto, N.B. |
| do ..... | ..... | do 6 809..... | Henry O'Leary..... | do | do do do |
| do ..... | ..... | do 6,859..... | George Fleming & Son ..... | June 26, 1882 | To construct and deliver at St. John, N.B., 3 four wheel coupled locomotive engines to burn bituminous coal. |
| Prince Edward Island Railway. ..... | ..... | do 6,671..... | Canadian Locomotive and Engine Co. (Limited)..... | April 21, 1882 | To construct 2 locomotives. |
| do do ..... | ..... | do 6,810..... | Chignecto Marine Transport Railway Co..... | ..... | To construct a ship railway across the Isthmus of Chignecto to connect Baie Verte with Bay of Fundy. |
| Lachine Canal..... ..... | ..... | do 6,637..... | D. & W. Gaherty & Co..... | March 16, 1882 | For extension of the Grand Trunk Railway pier, Lachine. |
| ,..... ..... ..... | ..... | do 6,567..... | H. J. Beemer ..... ..... | Nov. 3, 1881 | To complete work remaining to be done on Section 27. |

STATEMENT of Contracts entered into between 1st July, 1881, and 30th June, 1882.—*Continued.*

| Railways and Canals. | Deed, Letter or otherwise under which contract was made. | Name of Contractor. | Date of Contract. | General Description. |
|---|---|---|---|---|
| Ottawa River Works | Deed No. 6,485 | Poupore & Charlton | Aug. 3, 1881 | To construct submerged Dams at Grand Calumet Reef, Flat Rapids and Rocher Fendu, and to excavate Shoals, &c., on the Upper Ottawa River between Grand Calumet Falls and Culbute Locks. |
| Cornwall Canal | do 6,488 | James A. Gordon | do 10 | To construct 5 sets of gates for the new locks at the lower end of the canal. |
| Grenville Canal | Letter 56,184 | James Goodwin | do 1 | To widen the upper entrance of the Grenville Canal. (Extension of contract No. 4,612.) |
| do | do 92,214 | do | do 2 | |
| do | do 6,629 | Brecken & Co | Feb. 7, 1882 | To complete works at Greece's Point and to enlarge lower entrance of Grenville Canal. |
| Rideau Canal | do 6,491 | Z. E. Askwith | Aug. 8, 1881 | To dredge channel through sawdust bank at foot of the locks, Ottawa. |
| General | Under O.C. 28,658, 28,851 | St. Lawrence Steamboat Navigation Co | April 8 and May 9 | To provide steamboat service in connection with the Baie des Chaleurs. |

# APPENDIX No. 8.

DEPARTMENT OF RAILWAYS AND CANALS,

OTTAWA, 28th October, 1882.

SIR,—I beg to transmit herewith a statement of the claims referred to and arbitrated or reported upon, by the Official Arbitrators in connection with the Department of Railways and Canals, during the fiscal year ended 30th June, 1882.

I am, Sir,

Your obedient servant,

CHS. THIBAULT,

*Sec. to the Official Arbitrators*

A. P. BRADLEY, Esq.,
Secretary of Railways and Canals,
Ottawa.

STATEMENT of claims referred to and arbitrated or reported upon by the Official Arbitrators in connection with the Department of Railways and Canals, during the Fiscal Year ended 30th June, 1882.

| Claimant. | Nature of Claim. | When referred. | To whom referred. | Whether for Award or Report. | Amount claimed. | Amount awarded or recommended. | Date of Award or Report. | Remarks. |
|---|---|---|---|---|---|---|---|---|
| | | 1881 | | | $ cts. | $ cts. | | |
| William Fraser..... | Intercolonial R'y—Damages by fire from Engine..... | Aug. 11.. | One arbitrator. | Report.. | 106 00 | ..... ..... | ..... | Referred *de novo* |
| John Gunn ..... | do do .... | do 11... | do | do ... | 63 25 | 22 56 | July 12, '82 | |
| M. J. Anderson..... | Cornwall Canal—Land expropriated for..... | do 22... | Full Board..... | Award.. | 1,600 00 | 1,095 00 | June 1, '82 | |
| Tullys or Darbys Wharf | Intercolonial Railway—Land expropriated for..... | do 26... | do ..... | do ... | ..... | ..... ... | Withdrawn. | Case settled amicably. |
| John Hoschke ..... | Welland Canal—Damage to potatoes by flooding..... ..... ..... | Sept. 1... | One arbitrator. | Report.. | 577 50 | Nil. | July 19, '82 | |
| Rev. Matthew Smith.... | Intercolonial Railway—Destruction of a mill privilege..... ..... | do 1... | do | do ... | 400 00 | do | Sept. 5, '81 | |
| Thomas Nixon..... ..... | Welland Canal—Damage caused by hydraulic race ..... | Oct. 22... | do | do ... | Not stated... | 100 00 | Nov. 9, '81 | |
| St. Catharines Thorold and Macadamizing Co. | Welland Canal—Damage by cutting of their property thereby lessening receipts of tolls..... ..... | do 22 .. | do | do ... | ..... ..... | 1,000 00 | Aug. 7, '82 | |
| Robert Pugsley..... | Eastern & N. A. R'y—Land taken for and damage by water..... | do 22... | do | do ... | Not stated... | Nil. | Oct. | |
| Chas. D. Fillmore..... | Intercolonial Railway—Two horses killed ..... ..... | Dec. 13... | do | do ... | 200 00 | 200 00 | July 21, '82 | |
| Indians, Certain No. of. | Welland Canal—Damage to land flooded by Dunnville Dam..... | do 23... | do | do ... | ..... ..... | 8,433 14 with 40 yr's. interest | Aug. 5, '82 | Amounting in all to $28,672.67. |
| | | 1882. | | | | | | |
| T. T. Landry..... ..... | Intercolonial R'y—Damage by flooding through a culvert..... ..... | Jan. 12... | Full Board..... | do ... | 384 00 | 150 00 | May 9, '82 | |
| David Pescod ..... ..... | Cornwall Canal—Damage by cutting his land..... ..... ..... | do 17... | One arbitrator. | do ... | Not stated... | Nil. | June 20, '82 | |
| Mrs. Helena Amsden... | Grand River, W. C.—Damage to land by raising level..... ..... ..... | Feb. 6... | do | do ... | do ... | ..... | ..... | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| John Jessemer | Cornwall Canal—Damages for personal injuries and horse killed | Mar. | 18... | do | do ... | do ... | Nil. | June 22, '82 | | | |
| Chas. Bertrand | Intercolonial R'y—Damage to grain crop by fire | do | 23... | do | do ... | 357 00 | 209 40 | Aug. 2, '82 | | | |
| Martin Dooling | Intercolonial R'y—Damage to hay crops by flooding by the breaking of the Dyke at Moncton | do | 23... | do | do ... | Not stated... | 500 00 | Mar. 30, '82 | | | |
| J. B. Foster | Intercolonial R'y—Value of a cask of molasses destroyed | April | 13... | do | do ... | 352 32 | 79 85 | May 1, '82 | | | |
| Thos. Giles | Intercolonial R'y—Value of two oxen killed | do | 19... | do | do ... | 80 00 | 80 00 | June 17, '82 | | | |
| John White | Carillon Canal—Damage by flooding through raising of the Dam on North River | do | 21... | do | do ... | 480 00 | 300 00 | Aug. 2, '82 | | | |
| John Morran, *alias* Morin | do | do | 21... | do | do ... | Not stated... | 50 00 | do 2, '82 | | | |
| Patrick Farrel | do | do | 21... | do | do ... | 150 00 | 150 00 | do | | | |
| John Veitch | do | do | 21.. | do | do ... | 250 00 | 250 00 | do | | | |
| David Gauthier | do | do | 21... | do | do ... | Not stated... | 200 00 | do | | | |
| James N. Cogswell | Intercolonial R'y—Damage for land expropriated | do | 22... | do | do ... | 300 00 | 225 00 | July 7, '82 | | | |
| D. C. Hyslop | do Damage to land by water | May | 4... | do | do ... | ..... | ..... | ..... | | | |
| John E. Baldwin | do Damage by delay cargo of potatoes | do | 4... | do | do ... | 488 83 | Nil. | Aug. 5, '82 | | | |
| Walter Lang | do Damage for wood burned by sparks | do | 4... | do | do ... | 31 60 | ..... | ..... | Referred back. | | |
| | do do | do | 4... | do | do ... | 12 50 | ..... | ..... | do | | |
| J. B. Fraser | C.P.R., Pemb. Br.—Land taken for | do | 12... | Full Board | Award | 23,950 00 | 65 60* | Oct. 14, '82 | *With interest. | | |
| Thos. Carney | do | do | 12... | do ..... | do ... | Not stated... | 75 60* | do | *With interest. | | |
| W. N. Fairbanks | do | do | 12... | do ..... | Report | do ... | 3 50 | do | Absent. | | |
| Robt. Morrison | do | do | 12... | do ..... | do ... | do ... | 1 33 | do | do | | |
| Geo. Mervin | do | do | 12... | do ..... | do ... | do ... | 4 00 | do | do | | |
| Jno. W. Nelson | do | do | 12... | do ..... | Award | do ... | 800 00 | do | | | |
| Geo. B. Spencer | do | do and damages | 12... | do ..... | do ... | 5,568 00 | 1,246 66 | do | | | |
| Fred. T. Bradley | do | do | 12... | do ..... | Report | Not stated... | 41 40 | do | do | | |
| Duncan Campbell | do | do | 12... | do ..... | Award | ..... | ..... | Withdrawn. | Settled. | | |
| Saml. Sullivan | do | do | 12... | do ..... | Report | Not stated... | 0 86 | Oct. 14, '82 | Absent. | | |
| Thos. B. Whitley | do | do | 12... | do ..... | do ... | do ... | 4 76 | do | | | |
| Hugh Carmichael | do | do | 12... | do ..... | Award | ..... | ..... | hdrawn. | Settled. | | |
| Rev. G. Young and J. H. Ashdown | do | do | 12... | do ..... | do ... | ..... | ..... | do | do | | |
| J. B. Legimonière | do | do | 12... | do ..... | do ... | ..... | ..... | do | do | | |
| E. L. Drewry for Major Brown | do | do | 12... | do ..... | do ... | ..... | ..... | do | do | | |
| Christopher Mackintosh | do | do | 12... | do ..... | do ... | ..... | ..... | do | do | | |
| Duncan Arthur *et al* as Exrs. Est. of Dr. Bird | do | do | 12... | do ..... | do ... | ..... | ..... | do | do | | |
| do do | do | do | 12... | do ..... | Report | 15 00 | 15 00 | Oct. 14, '82 | | | |
| M. H. Bird (Mrs. Gunn) | do | do | | | | | | | | | |

STATEMENT of claims referred to and arbitrated or reported upon by the Official Arbitrators, &c.—*Concluded.*

| Claimant. | Nature of Claim. | When referred. | To whom referred. | Whether for Award or Report. | Amount claimed. | Amount awarded or recommended. | Date of Award or Report. | Remarks. |
|---|---|---|---|---|---|---|---|---|
| | | | | | $ cts. | $ cts. | | |
| John Gunn | C.P.R., Pemb Br.—Land taken for. | May 12... | Full Board..... | Award . | 617 60 | 41 40 | Oct. 14, '82 | |
| W. R. Sutherland | do do ... | do 12... | do ..... | Report.. | ..... | 2 00 | do | |
| E. Metcalfe | do do ... | do 12... | do ..... | do ... | ..... | 3 20 | do | Absent. |
| Napoléon Rioux | Intercolonial R'y—Damage by flooding and cow killed..... ..... | do 30... | One arbitrator. | do ... | 267 20 | Nil. | Aug. 2, '82 | |
| Hugh McDonald | Cornwall Canal—Over flowing of land..... ..... ..... | June 3... | do | do ... | ..... | do | June 23, '82 | |
| Fred. Hardy | Intercolonial R'y—Damage for two horses killed by. | July 8... | do | do ... | 220 00 | do | July 31, '82 | |
| J. R. White | do Damage by erection of snow fence | do 10... | do | do ... | ..... | ..... | ..... | |
| W. M. Richardson | do Damage by delay cargo of potatoes | do 10... | do | do ... | ..... | ..... | ..... | |
| Jos. Black | do Damage for two steers killed..... | do 11... | do | do ... | Not stated... | 40 00 | Aug. 3, '82 | |
| Thos. R. Schurman | P. E. I. Railway—Damage for horse killed ..... ..... ..... | do 11... | do | do ... | do ... | Nil. | do | |
| William Mattheson | Intercolonial R'y—Damage for horse killed..... ..... ..... | do 11... | do | do ... | do ... | ..... | ..... | |

CHAS. THIBAULT,
*Secretary to the Official Arbitrators.*

OTTAWA, 27th October, 1882.

# APPENDIX No. 9

## GENERAL STATEMENT SHEWING.

1st. Water Power and other Public Property leased on Canals and Railways, during the Fiscal Year ending 30th June, 1882.

2nd. Property purchased by the Department of Railways and Canals, for the Dominion Railways and Canals, and Property sold by the same Department, as not being required for said Railway and Canals during the Fiscal Year ending 30th June, 1882.

## GENERAL STATE

### 1st. Water Power and other Public Property leased on Canals

| Date of Signature. | Term of Lease. | Lessees. | Property Leased. | For what purpose used. |
|---|---|---|---|---|
| | | | *Beauharnois Canal.* | |
| July 6, 1881 | 21 years, (renewable.) | Jas. McDonald..... | Cadastral lot 830, above Guard Lock, at Valleyfield. | Grist Mill..... ..... |
| Jan. 11, 1882 | Dur. pleasure of Government | Isidore Larocque..... | N. part of S.W. ½ lot No. 21, 1st Concession, Catherinestown. | Farming..... ..... |
| May 23, 1882 | do | Robt. Steel..... ..... | Lot at Valleyfield, in river basin, above dam and above lock. | Coal Shed..... ..... |
| do | do | Wm. Hood..... | Cadastral lot 98A Ste. Cécile, at east end of dam, on Grande Isle. | Farming..... ..... |
| | | | *Canadian Pacific Railway.* | |
| Dec. 23, 1881 | do | Portage, Westbourne and North Western Railway Co. | The locomotive "Countess of Dufferin" and 20 platform cars. | ..... ..... |
| | | | *Fort Frances Canal.* | |
| Aug. 1, 1881 | do | S. H. Fowler..... | Land at Alberton, District of Lac La Pluie, and right to build a dam at head of canal, and a bridge across the lock. | Lumber yard..... |
| | | | *Intercolonial Railway.* | |
| July 1, 1881 | 10 years..... | John Miller *et al*..... | Lot along Railway and S. bank of Richibucto River, Kent Co., N.B. | Factory for bark extract. |
| Dec. 12, 1881 | 2 years & 2 yrs. extension. | Archd. Nelson, (to Government.) | Front shop of International Hotel, Halifax, N.S. | Ticket Office..... |
| July 19, 1882 | On 30 days notice. | Wm. Cunard, (to Government.) | Lot at Richmond, N.S., on which signal post stands. | Signal posts, &c ... |
| | | | *Lachine Canal.* | |
| Sept. 3, 1881 | Dur. pleasure of Government | John Costigan..... | Lot on west side of St. Gabriel basins, Montreal. | Coal yard..... ..... |
| do 2, 1881 | do | G. H. Grier..... ..... | do do ... | Lumber yard..... |
| do 8, 1881 | do | D. H. Henderson..... | do do ... | do ..... |
| Aug. 31, 1881 | 21 years, (renewable.) | Merchants Manufacturing Co. | Water through a 10 in. pipe to their mill, town of St. Henry. | Cotton Mill and Bleachery. |
| Nov. 18, 1881 | Dur. pleasure of Government | Dominion Abattoir & Stock Yard Co. | Water through a 6 in. pipe to their abattoir, &c., town of St. Henry. | Abattoir, &c..... |
| Feb. 3, 1882 | do | Vital Paradis..... | Wharf lot at inner end of St. Gabriel basin No. 2, Montreal. | Elevators and Bins for coal. |
| May 18, 1882 | do | do ..... | Wharf lot at entrance to St. Gabriel basin No. 2, Montreal. | do ... |
| Aug. 22, 1882 | do | City of Montreal ..... | Site of a floating bath in canal, N. W. side, between Wellington Street bridge and Grand Trunk Railway bridge. | Floating Bath..... |
| | | | *Rideau Canal.* | |
| Sept. 8, 1881 | 21 years, (renewable.) | Geo. Merrick..... | Water lots on Nos. 21 & 22 Junction Gore of Gloucester, Hogsback. | Cotton Factory..... |
| Nov. 28, 1881 | Pleasure of Government | Francis Abbott..... | Part of lot 40 in 1st Concession of Nepean, near Dow's swamp. | Farming..... ..... |

## MENT SHOWING:

### and Railways, during the Fiscal Year ended 30th June, 1882.

| Amount of water power leased. | Area of Property leased. | Date from which lease is reckoned. | Annual rental. | Terms of Payment. | | | Remarks. |
|---|---|---|---|---|---|---|---|
| | | | | Amount of each instalment. | When payable each year. | When first instalment was payable. | |
| | | | $ cts. | $ cts. | | | |
| 4 runs... | 15,800 ft. | July 1, 1881 | 20 00 | 10 00 | Jan. 1 & July 1 | Jan. 1, 1882 | On road to Grand Isle. |
| ..... | 9.93 acres. | Aug. 20, 1881 | 10 00 | 10 00 | Sept. 1..... | On delivery of lease. | Above the canal. |
| ..... | 150x30 ft. | May 1, 1882 | 40 00 | 40 00 | May 1..... | do | |
| ..... | 2 acres. | April 1, 1882 | 4 00 | 4 00 | April 1..... | do | |
| ..... | ..... | ..... | 5 00 | ..... | ..... | ..... | Per day for locomotive |
| ..... | ..... | ..... | 0 50 | ..... | ..... | ..... | do for the cars. |
| ..... | 120x350 / 40x350 | May 1, 1881 | 20 00 | 20 00 | May 1..... | On delivery of lease. | |
| ..... | 3.55 acres. | July 1, 1881 | 3 55 | 3 55 | July 1..... | July 1, 1881 | At $1 per acre per year. |
| ..... | ..... | Dec 12, 1881 | 275 00 | 68 75 | Quarterly..... | | |
| ..... | ..... | ..... | 1 00 | ..... | July 1..... | | |
| ..... | 3.00 acres. | Date of lease | 170 00 | 170 00 | May 1..... | May 1, 1881 | These leases cancel No. 2,468.—Notices to quit given 19th May, 1882. |
| ..... | 6⅔ do | do | 230 00 | 230 00 | do ..... | do | |
| ..... | 5 do | do | 200 00 | 200 00 | Jan. 1..... | do | |
| 10 in. pipe. | ..... | Aug. 6, 1881 | 200 00 | 100 00 | Jan. 1 & July 1 | Jan. 1, 1883 | |
| 6 in. pipe | ..... | Sept. 7, 1881 | 25 00 | 25 00 | July 1..... | July 1, 1882 | |
| ..... | ..... | Jan. 1, 1882 | 180 00 | 180 00 | Jan. 1..... | Jan. 1, 1883 | Cancelled by following lease; site changed. |
| ..... | 300x36 ft. | do | 180 00 | 180 00 | do ..... | do | |
| ..... | 120x25 ft. | July 1, 1882 | 1 00 | 1 00 | July 1..... | On delivery of lease. | |
| All the surplus water. | 4 acres. | Aug. 13, 1881 | 50 00 | 25 00 | Jan. 1 & July 1 | Jan. 1, 1881 | 4 months more to build factory by O.C. of 7th March, 1882. |
| ..... | 1 do | Nov. 1, 1881 | 3 00 | 3 00 | Nov. 1..... | Nov. 1, 1881 | This cancels lease 5,435 granted to J. Burgess. |

GENERAL STATEMENT showing: 1st. Water Power and other

| Date of Signature. | Term of Lease. | Lessees. | Property leased. | For what purpose used. |
|---|---|---|---|---|
| | | | *Trent River.* | |
| May 17, 1882 | 21 years, (renewable.) | H. J. B. Williams..... | Water power for his mill on lot No. 27, in 18th Con. township of Smith, at Buckhorn Rapids, near Hall's bridge. | Grist Mill..... |
| | | | *Welland Canal.* | |
| Sept 21, 1881 | 1 year..... | John Thompson (to Government.) | Buildings on lot 29 in 2nd Con. Humberstone, near section 34, and land. | Storing dualine.... |
| Aug. 8, 1881 | 21 years, (renewable.) | James Wilson..... | Surplus water through flume to be built by lessee, from level 16 to level 15, Merritton. | Foundry and Machine shop. |
| July 1, 1881 | do | Gordon & Mackay.... | Surplus water near locks 12, 13, 14, Merritton, and part of lot 12 in 9th Concession, Grantham, | Cotton Factory. .. |
| Dec. 28, 1881 | Dur. pleasure of Government | Geo. Wallace..... | Lot south of Canal Street, east, near Tamarack St., Dunnville. | Tannery..... |
| July 11, 1882 | 21 years, (renewable.) | King & Dolan (or Merriton Cotton Mills.) | Lots 11, 12, in 10th Con., Grantham, Merritton. | Cotton Mills, &c... |
| May 27, 1882 | Dur. pleasure of Government | F. O. White..... | Part of lot 247, township of Thorold, in town of Welland, east of canal. | Pasturage..... |
| June 5, 1882 | do | John F. Rees. ..... | Part of lot 11, in 7th Concession, Grantham. | do ..... |

## Public Property leased on Canals and Railways, etc.—*Concluded.*

| Amount of water power leased. | Area of Property leased. | Date from which lease is reckoned. | Annual rental. | Terms of Payment. | | | Remarks. |
|---|---|---|---|---|---|---|---|
| | | | | Amount of each instalment. | When payable each year. | When first instalment was payable. | |
| | | | $ cts. | | | | |
| 3 runs or 30 horse power. | ..... | Oct. 1, 1880 | 120 00 | 60 00 | Jan. 1 & July 1 | July 1, 1882 | |
| ..... ..... | 2 acres. | May 1, 1881 | 75 00 | 75 00 | May 1..... | May 1, 1881 | |
| 25 horse power. | ..... | July 12, 1881 | 60 00<br>5 00 | For first 10 h.p<br>each further h.p. | Jan. 1 & Jul. 1 | Jan. 1, 1882 | |
| All the surplus water. | 7 acres. | do 1, 1881 | 240 00 | 120 00 | do do | do | This is a renewal of lease No. 2,320A of 12th May, 1862. |
| To be run by steam. | ..... | Oct. 25, 1881 | 20 00 | 20 00 | Nov. 1..... | Nov. 1, 1881 | |
| 200 horse power. | 3 acres. | April 1, 1882 | 400 00 | 200 00 | Jan. 1 & July 1 | July 1, 1882 | Cancels lease 2,499 of 27th Dec., 1853, to J. Brown. |
| ..... | 4 do | Mar. 6, 1881 | 20 00 | 20 00 | April 1..... | April 1, 1882 | |
| ..... ..... | 16¾ do | do 1, 1881 | 50 25 | 50 25 | March 1 ..... | Mar. 1, 1882 | |

## 2nd. PROPERTY purchased by the Department of Railways and Canals, and Property sold by the same Department as not being required for the Railways and Canals, during the fiscal year ending 30th June, 1882.

| Date of signature. | Vendors. | Purchasers. | Property Purchased or Sold. | For what purpose used. | Area of land. | Price of sale. | Remarks. |
|---|---|---|---|---|---|---|---|
| | | | | | A. R. P. | $ cts. | |
| Oct. 17, 1881 | Hugh McDonald..... | Her Majesty. | Lot No. 5, in Town of Cornwall, on Potash Point | Cornwall Canal.... | 4 1 15 | 1,954 68 | |
| Oct. 27, 1881 | D.W. Macdonell *et ux.* | do ... | do 3 and 4, do do ... | do ..... | 11 2 18 | 7,736 88 | |
| Dec. 16, 1881 | Matthew Orr..... | do ... | Rule absolute of Court of Queen's Bench, to pay him for lot 2, on Potash Point..... | do ..... | 6 3 11 | 491 63 | |
| do | Executors of Wm. Mattice..... | do ... | Rule absolute of Court of Queen's Bench, to pay him for lot 7, on Potash Point..... | do ..... | 1 1 36 | 103 00 | |
| | | | *Carillon and Grenville Canals.* | | | | |
| Dec. 19, 1881 | E. H. Parent..... | do ... | A brick house built by him on Government land, lot 8, 1st range, Grenville ..... | Grenville Canal.... | 26x36 feet. | 4,000 00 | |
| Mar. 21, 1879 | James Weldon..... | do ... | A lot of land in Township of Grenville ..... | do ... | 0·3614 acre. | 350 00 | |
| Nov. 27, 1878 | T. & W. Owens *et al.* | do ... | do at Stonefield..... | do ... | 2·403 do | 240 30 | |
| June 17, 1878 | do ... | do ... | do do ..... | do ... | 2·439 do | 243 90 | |
| do | do ... | do ... | do do Lockhouse lot given in exchange for this one..... | do ... | 3·533 do | 300 00 | |
| Mar. 4, 1882 | Allan Cameron *et al.* | do ... | Lot No. 9 in 1st Concession, Chatham..... | do ... | 0·0463 do | 4 63 | |
| do | D. McMillan *et al*..... | do ... | do 6 and 7, do Grenville ..... | do ... | 0·2140 do | 21 40 | |
| | | | *Chambly Canal.* | | | | |
| Nov. 19, 1881 | J. C. Pierce & Son,.. | do ... | A building near Partition St., St. John's, P.Q., on Canal land..... | Chambly Canal.... | ..... ..... | 1,000 00 | |
| July 25, 1882 | Joseph Malo..... ..... | do ... | House and official lot 130, St. Joseph de Chambly..... ..... ..... | do ..... | 3,780 feet fr. | 1,450 00 | For Lock Master. |
| | | | *Intercolonial Railway.* | | | | |
| Jan. 4, 1882 | Her Majesty ..... ..... | John Smith. | Lot on corner of Albion and Clarence Streets, St. John, N.B..... ..... ..... | Intercolonial R'y... | ..... ..... | Free. | Not required for |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Feb. 12, 1881 | Wm. Morice & Sir Albert J. Smith..... | Her Majesty. | Land at Sackville, for Siding from Intercolonial Railway, from J. D. Dixon's lot to a private wharf on Tantramar River..... ..... | do ... | 0·82 acre. | 302 00 | is granted free, as compensation for earth taken from a hill on his land, for ballast, &c. |
| April 28, 1882 | Government of Nova Scotia..... ..... | Government of Canada. | Water lots in Halifax Harbour, N.S., in front of new deep water terminus to project wharves..... ..... ..... ..... | do ... | 16½ acres.. | Free. | |
| | | | *Lachine Canal.* | | | | |
| June 23, 1881 | Estate of Louis Bernier..... ..... | Her Majesty. | Cadastral lot 3719, Côte St. Paul..... ..... | Lachine Canal..... | 14,100 feet | { 1,410 00<br>313 96 | |
| Dec. 17, 1878 | City of Montreal ..... | do ... | do { 2287, Town St. Henry.<br>2512, Village St. Gabriel. } ..... | do ..... | 3,246 do | 1,758 12 | |
| Feb. 14, 1877 | Montreal Transportation Co..... ..... | do ... | do 2444, Town St. Henry..... ..... | do ..... | 8,415 do | 5,890 50 | |
| Feb. 26, 1877 | do ... | do ... | Improvements on lot 2509, Town of St. Henry | do ... | 90,500 do<br>Less materi'l | 25,260 00<br>4,500 00 | Lease No. 3277, surrendered. |
| April 11, 1877 | J. L. Thompson *et ux.* | do ... | Cadastral lots 3716 and 3717, Village of Côte St. Paul..... ..... ..... | do ..... | 5,248 feet | 524 80 | |
| do | F. Blegnier *dit* Jarry *et ux*..... ..... | do ... | Cadastral lot 1009, Parish of Lachine..... | do ..... | 19,836 do | 632 08 | |
| Jan. 9, 1877 | Mrs. J. B Auger..... | do ... | do 2443, Town of St. Henry. ..... | do ... | 17,252 do | { 11,645 10<br>100 00 | Interest. |
| Jan. 20, 1877 | Auger Shipping Co... | do ... | Ratifying deed of 2443, Town of St. Henry..... | do ..... | 19,070 do | 10,488 50 | |
| Dec. 6, 1877 | O. W. Stanton ..... | do ... | Cadastral lot 2308, Town of St. Henry. ..... | do ..... | 1,899 do | 1,383 50 | |
| Nov. 27, 1877 | Mosely & Ricker..... | do ... | do 2152, Town of St. Henry. ..... | do ..... | 1,889 do | 1,369 53 | |
| Feb. 19, 1877 | Montreal Rolling Mills Co..... | do ... | do 2444, do ..... | do ..... | 42,574 do | 9,744 10 | |
| Jan. 5, 1877 | W. B. Davidson *et ux* | do ... | do 3609, Village of Côte St. Paul ... | do ..... | 52,113 do | 1,744 29 | |
| Jan. 2, 1877 | H. Hadley, tutor to D. J. Hadley..... | do ... | do 1012, Parish of Lachine..... ..... | do ..... | 10,492 do | 724 76 | |
| Feb. 27, 1877 | P. Vallière *et ux*..... | do ... | do 1008, do ..... ..... | do ..... | 2,011 do | 2,212 10 | |
| April 18, 1877 | P. Donovan *et ux*..... | do ... | do 1413, St. Ann's Ward, Montreal. | do ..... | 4,418 do | 1,435 85 | |
| Feb. 13, 1877 | H Brownrigg *et ux*... | do ... | do 2513, sub-lot 4, Village St. Gabriel | do ..... | 7,536 do | 2,449 20 | |
| Feb. 17, 1877 | P. Ryan *et ux*. ..... | do ... | do 2513, 2 and 3 do | do ..... | 5,808 do | 7,260 00 | |
| Feb. 21, 1877 | J. H. Joseph..... | do ... | do 1411, St. Ann's Ward, Montreal. | do ..... | 3,113 do | 2,101 28 | |
| Jan. 22, 1877 | H. Hogan ..... ..... | do ... | do 2443, Town St. Henry..... | do ..... | 8,734 do | 9,607 40 | |
| Aug 30, 1877 | Wm. Brennan *et ux*... | do ... | do 1412, St. Ann's Ward, Montreal. | | | | |
| Dec. 7, 1876 | J. Lemieux, tutor to M. A. Lemieux..... | do ... | do 1194, do do . | do ..... | 5,008 do | 3,500 00 | |
| Oct. 15, 1877 | J. S. Evans. ... ..... | do ... | A lot in Parish of Lachine..... ..... | do ..... | 1,822 do | 54 66 | |
| Jan. 12, 1877 | T. Gariépy and his children..... ..... | do ... | do Town of Lachine ..... ..... | do ..... | 16,410 do | { 7,444 00<br>186 10 | Interest. |
| June 18, 1877 | B. Furniss & Jetté *et al*..... ..... | do ... | Cadastral lot 3413, sub-lots 3, 4, 5, 6, Town of St. Henry..... ..... | do ..... | 35,170 do | 7,034 00 | |
| Dec. 5, 1876 | Thos. Henrichon..... | do ... | do 3615, Village Côte St. Paul..... | do ..... | 7,296 do | 460 76 | |

## 2nd. PROPERTY purchased or sold by the Department of Railways and Canals, &c.—*Continued.*

| Date of Signature. | Vendors. | Purchasers. | Property Purchased or Sold. | For what purpose used. | Area of land. | Price of sale. | Remarks. |
|---|---|---|---|---|---|---|---|
| | | | *Lachine Canal*—Continued. | | | $ cts. | |
| Mar. 26, 1877 | John Jackson. ..... | Her Majesty. | Cadastral lot 1003, Parish of Lachine..... ..... | Lachine Canal..... | 37,395 | 2,983 97 | |
| Oct. 5, 1877 | C. McArthur *et ux*.... | do ... | do 1006, do ..... ..... | do ..... | 39,649 do | 1,239 47<br>84 91 | Interest. |
| April 26, 1878 | P. A. Fauteux *et al*... | do ... | do 3928A, Village Côte St. Paul.... | do ..... | 1,600 do | 240 00 | |
| Jan. 5, 1877 | A. Aubertin..... ..... | do ... | do 3614, do ..... | do ..... | 7,899 do | 632 94 | |
| April 26, 1878 | L. Fauteux *et ux* ..... | do ... | do 3928A, do ..... | do ..... | 26,238 do<br>4,025 do | 5,000 00<br>550 00 | Interest. |
| Dec. 6, 1877 | Seminary of Montreal | do ... | do 3410, 3411, do ..... | do ..... | 62,883 do | 9,500 00<br>699 83 | Interest. |
| June 11, 1878 | Wm. Evans *et ux, et al* | do ... | do 3607, do ..... | do ..... | 118,194 do | 3,767 00<br>1,883 50<br>100 00 | Deed of land.<br>Receipt from R. & T. W. Evans.<br>Damages. |
| June 7, 1877 | Executors of late Wm. Dow ..... ..... | do ... | do 1022, Parish of Lachine..... ..... | do ..... | 48,430 do | 2,322 00<br>90 00<br>100 00 | Deed of land.<br>Receipt for tenant.<br>Arbitration costs. |
| April 12, 1877 | V. Jarry *dit* Henrichon *et al*..... ..... | do ... | do 1019 do ..... ..... | do . .... | 22,684 do | 1,834 52<br>7 00 | Land.<br>Receipt for fencing. |
| Mar. 11, 1878 | Moisic Iron Co., per Wm. Rhind. ..... | do ... | do 2511, 2512, Village St. Gabriel... | do ..... | 11,039 do | 3,913 45<br>50 00 | Land.<br>Fences. |
| Dec. 31, 1877 | C. Gareau *et ux*. ..... | do ... | do 3720, 3721, Village Côte St. Paul | do ..... | 608 do | 60 80 | |
| Feb. 11, 1878 | L. Dupuy, assignee of J.McNaughton *et al* | do ... | do 968, Parish of Lachine..... ..... | do ..... | 53,556 do | 4,040 18 | |
| Mar. 7, 1878 | M. & A. Latour, per D.Belanger, curator. | do ... | do 1021, do ..... | do ..... | 37,576<br>24,246 ... | 3,359 00 | |
| Jan. 9, 1877 | C. S. Watson, executors of the wife of.. | do ... | do 2176, 2177, Town of St. Henry.... | do ..... | 3,517 ft. | 1,336 46 | |
| Feb. 2, 1878 | M. Thiery & *ux*.. ..... | do ... | do 1017, 1020, Parish of Lachine..... | do ..... | 76,467 | 4,629 00 | |
| Mar. 24, 1877 | J. B. Désève & *al*. ... | do ... | do 3912, 3601, Village Côte St. Paul | do ..... | 23,845<br>14,600 | 4,055 00 | |
| do 20, 1877 | H. Pigeon & *ux*..... | do ... | do 1007, Parish of Lachine..... | do ..... | 37,094 | 1,258 32<br>50 00 | For land.<br>To remove a well. |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Sept. 17, 1876 | John McDougall .... | do ... | Building ... Ann's Ward, Montreal..... | do ..... | | { 2,000 00 | Deducted for materials retained by him.—Part of lease 1976 is cancelled. |
| Feb. 15, 1878 | D. & L. Turcot & mother..... | do ... | Cadastral lot 1016, Parish of Lachine..... | do ..... | 35,240 | { 3,062 70<br>276 24 | Land.<br>Interest receipt enclosed. |
| Mar. 20, 1877 | Sir A. T. Galt..... | do ... | do 3913, 3914, 3915, 3916, a Street, 3927, 3928, Village Côte St. Paul | do ..... | 32,100 | 4,012 50 | |
| April 17, 1877 | R. Allen & *al*..... | do ... | do 2885, 2886, Town of St. Henry... | do ..... | 6,255 | 2,376 90 | |
| Aug. 17, 1876 | Morland, Watson & Co., and Montreal Saw Works ..... | do ... | do 1068, St. Joseph Suburbs, Montreal..... | do ..... | 6,400 | 21,993 15 | With buildings, wharfage, flume, &c. — Part of lease 1976 is cancelled. |
| Feb. 8, 1877 | The Mechanics Bank. | do ... | do subdiv. 15 & 16 of 2513, Village St. Gabriel..... | do ..... | 10,099 | 3,282 17 | |
| Dec. 17, 1877 | Heirs J. Frothingham | do ... | do 3409, Village Côte St. Paul ..... | do ..... | 39,894 | 5,385 69 | |
| Feb. 7, 1877 | Rooney & Dolan..... | do ... | do subdiv. 1, 8, 9, 10, 11, 12, 13, 14, 17, 18, 19, of 2513, Village St. Gabriel..... | do ..... | { 3,026<br>38,066<br>9,732<br>4,747 } | 18,179 26 | |
| | | | | do ..... | 19,810 | 646 30 | |
| do 17, 1877 | J. B. Vincent & *al*... | do ... | do 1010, Parish of Lachine..... | do ..... | 6,170 | 5,018 80 | |
| Sept. 27, 1876 | P. Kennedy..... | do ... | do 1197, St. Ann's Ward, Montreal. | do ..... | 23,820 | { 7,750 00<br>266 67 | Land.<br>Rent of buildings. |
| Nov. 29, 1876 | Mrs. A. Bissett..... | do ... | A lot in Town of Lachine..... | do ..... | 2,916 | 5,000 00 | |
| Aug 16, 1876 | Ant. Danis & *ux*..... | do ... | Cadastral lot 1196, St. Ann's Ward, Montreal.. | do ..... | 78,376 | 2,234 00 | |
| May 7, 1877 | C. Esplin & *ux*..... | do ... | A lot in Parish of Lachine..... | do ..... | 14,930 | 4,852 25 | Ratification of this deed, April 11, '77. |
| Mar. 19, 1877 | Miss C. C. Cameron. | do ... | Subdiv. 5, 6, 7, of 2513, Village St. Gabriel.... | do ..... | 2,804 | 4,500 00 | |
| Sept. 2, 1876 | Alfred Trudel & *ux*... | do ... | Part of lot 1196, St. Ann's Ward, Montreal.... | do ..... | 8,760 | 5,440 00 | |
| Oct. 20, 1876 | Mrs. John Connors... | do ... | A lot in Town of Lachine..... | do ..... | 2,722 | 694 00 | |
| do 19, 1876 | T. McLaughlin & *ux*. | do ... | do do ..... | do ..... | 14,900 | 4,140 00 | |
| Mar. 29, 1877 | J. Chalifoux & *al*..... | do ... | Off lot No. 1193, St. Ann's Ward, Montreal.... | do ..... | 54,533 | 26,135 00 | |
| Jan. 14, 1878 | J. K. Ward & *ux* ..... | do ... | do 2287, 2287a, 2307, Town of St. Henry | | | | |
| Nov. 16, 1876 | A. Robertson.. ..... | do ... | do 2171, 2170, 2167, 2166, 2163, 2162, 2159, 2158, 2155, 2154, Town of St. Henry..... | do ..... | { 805<br>303 } | 387 80 | |
| Feb. 18, 1878 | D. J. Craig, assignee of Insolvent, estate of Wm. M. Molson. | do ... | do 2443, Town of St. Henry..... | do ..... | 19,618 | 10,789 00 | |
| Dec. 20, 1877 | E. Hudon, fils..... | do ... | 2 streets in Village of Côte St. Paul..... | do ..... | { 2,725<br>1,595 } | 432 00 | Enclosed, Judgment of Confirmation of title. |
| Sept. 8, 1876 | F. L. Béique & *al*..... | do ... | Subdiv. 4, 5, 6, 7 of 3412 in Town of St. Henry | do ..... | 45,438 | 6,815 17 | |
| Oct. 12, 1876 | E. Z. Paradis & *al* ... | do ... | do 10 to 22 of 3413 do ... | do ..... | 137,684 | 20,652 60 | Enclosed, Evans' discharge. |

## 2nd. PROPERTY purchased or sold by Department of Railways and Canals, &c.—*Continued.*

| Date of signature. | Vendors. | Purchasers | Property Purchased or Sold. | For what purpose used. | Area of land. | Price of sale. | Remarks. |
|---|---|---|---|---|---|---|---|
| | | | | | | $ cts. | |
| | | | *Lachine Canal*—Continued. | | | | |
| Sept. 6, 1876 | Desmarteau & Béique *& al* | Her Majesty. | Subdiv. 1 to 7 of 3415, in Town of St. Henry | Lachine Canal | 53,821 | 8,073 15 | |
| Oct. 14, 1876 | V. Hudon & *al* | do | do {1 to 6 of 1913, 9 & 10 of 3412, 1, 2, 7, of 3413} do | do | {28,358, 19,746, 20,720} | 16,033 44 | Two discharges enclosed. |
| Nov. 27, 1876 | P. Carreau & *al* | do | do 8 of 3412 do | do | 10,890 | 2,178 00 | One discharge enclosed. |
| May 16, 1877 | E. Z. Paradis *et al* | do | Sub-div. {13 of 1913, 2 of 3412} Town of St. Henry | do | 11,186 | 2,572 78 | |
| Dec. 30, 1876 | L. A. Jetté *et al* | do | do 3 of 3412 do | do | | 2,325 99 | |
| April 11, 1877 | do | do | do {7 to 12 of 1913, 1 of 3412} do | do | 54,360 | 12,502 80 | |
| Nov. 24, 1877 | Montreal Land Co. *et al* | do | do 8 of 3413 do | do | 10,825 | 2,165 00 | Land. |
| | | | | | | 384 58 | Interest. |
| do | do | do | do 9 of 3413 do | do | 10,875 | 2,175 00 | |
| Dec. 27, 1876 | F. L. Beïque *et al* | do | Buildings and fences on sub-div. 1 to 7 of 3415, Town of St. Henry | do | | 1,828 78 | Described in deed of 6th Sept., 1876, from Desmarteau & Beïque. |
| Feb. 7, 1881 | Ed. Wilgress and his children | do | Cadastral lot 736, at Town of Lachine | do | 80,300 | 8,180 00 | |
| | | | | | | 2,298 58 | |
| | | | | | | 10,478 58 | |
| Feb. 8, 1881 | F. Blégnier *dit* Jarry *et ux* | do | do 3616, Village Côte St. Paul. | do | 15,772 | 2,981 76 | Land. |
| | | | | | | | Interest. |
| | | | | | | 3,710 80 | In all. |
| Feb. 10, 1881 | Peter Jackson *et al* | do | do 3617, do | do | 27,289 | 2,320 33 | Land. |
| | | | | | | 4,035 10 | Interest. |
| | | | | | | 6,922 75 | In all. |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Nov. 19, 1880 | Rev. D. F. McDonald | do ... | Part of lot or township 45, on Souris River Road | | | Souris Extension ... | 0·33 acr. | 200 56 | Sale. |
| do | A. Paquet *et al* | do ... | do | do | do ... | do ... | ..... | 1 00 | Release of dower. |
| Nov. 27, 1881 | M. Paquet *et ux* | do ... | do | do | do ... | do ... | 1·16 acr. | 984 49 | Sale. |
| do | Gardians of estate of Wm. Dettrick | do ... | do | do | do ... | do ... | ..... | 1 00 | Release of judgm't. |
| Feb. 8, 1881 | Flora McDonald *et al* | do ... | do | do | do ... | do ... | 0·35 acr. | 388 98 | Sale. |
| | | | *Rideau Canal.* | | | | | | |
| Mar. 8, 1880 | John Branigan *et ux* | do ... | Quarry lot No. 35 in 4th C. Kingston | | | Rideau Canal. | 1·00 acr. | 300 00 | |
| April 3, 1882 | Order in Council | Departement of the Interior. | Retransfers them, lands at Rideauville, South of Canal | | | do | | | Not required for Canal. |
| | | | *Canadian Pacific Railway.* | | | | | | |
| Mar. 5, 1881 | J. E. Cooper | Her Majesty. | NE¼ sect. 32, Tp. 1 R 3 E, County of Provencher | | | Pembina Branch ... | 1·41 acr. | 1 41 | |
| April 25, 1881 | John Schultz *et ux* | do ... | Lot 91, St. Paul, County of Selkirk | | | do ... | 1·02 | 50 20 | |
| April 15, 1881 | J. H. Gunn | do ... | 117, 116, do | do | ..... | do ... | {1·51 / 1·53} | 12 16 | |
| Mar. 31, 1881 | Bishop of Rupert's Land | do ... | 104, | do | do ..... | do ... | 0·75 | 3 00 | |
| do | do | do ... | 90, | do | do ..... | do ... | 1·00 | 40 00 | |
| Mar. 12, 1881 | Jacob McNab | do ... | 47, St. John, | do | do ..... | do ... | 0·80 | 4 00 | |
| Mar. 26, 1881 | A. G. B. Bannatyne | do ... | (Park) O. and N. St. Clement, County of Lisgar | | | do ... | {0·78 / 0·76} | {10 02 / 20 20} | |
| | | | | | | do ... | 2·06 | 26 46 | |
| Mar. 11, 1881 | Donald Gunn | do ... | 58, Kildonan, County of Selkirk | | | do ... | 5 feet. | 25 70 | For off-take drain. |
| May 1881 | Robt. McBeth | do ... | 84, St. Paul, | do | ..... | do ... | {0·82 / 0·82} ac. | 8 20 | |
| Jan. 7, 1882 | Alex. Logan | do ... | 65 & 64, St. Boniface, do | | ..... | do ... | ..... | 50 00 | |
| Mar. 8, 1882 | B. W. Hughes | do ... | 6, Block 54, Emerson, in Ste. Agathe, County of Manchester | | | do ... | 2·63 acr. | 39 45 | |
| Feb. 20, 1882 | E. B. Tatchell & A. R. Irwin | do ... | 44, Ste. Agathe, do | | ..... | | | | |
| | | | *St. Ann's Canal.* | | | | | | |
| May 6, 1881 | D. Lebeau | do ... | Mortgage and transfer by him to the "Credit-Foncier Franco-Canadien," Montreal, of $5,000 due him by the Government for part of lot 112, at St. Ann, taken for canal by the Government and signification thereof to Her Majesty | | | Ste. Anne Canal... | | | |

## 2nd. PROPERTY purchased or sold by Department of Railways and Canals, &c.—*Continued.*

| Date of signature. | Vendors. | Purchasers. | Property Purchased or Sold. | For what purpose used. | Area of land. | Price of Sale. | Remarks. |
|---|---|---|---|---|---|---|---|
| | | | *Ste. Ann's Canal*—Continued. | | | $ cts. | |
| Jan. 19, 1882 | T. Raymond..... | Her Majesty. | Receipt, damages as tenant of a Shoemaker's house, on lot 105..... | Ste. Ann's Canal... | ..... | 75 00 | |
| do | P. or H. Dunbarry.... | do ... | Receipt damages as tenant of a Butcher's shop, on lot 105..... | do ... | ..... | 6 37<br>75 00 | |
| Jan. 24, 1882 | M. Guérard..... | do ... | Receipt damages as tenant of a Blacksmith's shop, on lot 104..... | do ... | ..... | 6 37<br>100 00 | |
| Oct. 26, 1881 | Rev. G. L. Chevrefils & *al*..... | do ... | Deed of lot No. 109, official plan, Ste. Anne du Bout de l'Isle. | do ... | ..... | 6 75<br>1,000 00<br>75 00 | Principal.<br>Interest. |
| | | | | | | 75 00 | Excavation, &c. |
| Nov. 16, 1881 | J. O. Chevrefils..... | do ... | do 110 do do ... | do ... | ..... | 1,000 00<br>75 00 | |
| July 22, 1881 | L. Pelchat & *ux*..... | do ... | do 111 do do ... | do ... | ..... | 6,560 00<br>395 34 | |
| June 9, 1882 | J. O. Chevrefils..... | do ... | do 104 do do ... | do .. | ..... | 4,063 00<br>375 05 | |
| do | G. C. Tunstall & *ux*. | do ... | do 113 to 120 do do ... | do ... | ..... | 4,350 00<br>453 13 | |
| June 27, 1882 | A. St. Denis, jun. & *ux*. | do ... | do 145 do do ... | do ... | ..... | 250 00<br>27 50 | |
| July 7, 1882 | do ... | do ... | do 146 do do ... | do ... | ..... | 1,000 00<br>110 00 | |
| June 27, 1882 | Curatrix to her husband P. Lamarche. | do ... | do 146*a* do do ... | do ... | ..... | 75 00<br>8 25 | Right of way. |
| July 7, 1882 | T. deRepentigny & *ux* | do ... | do 147 do do ... | do ... | ..... | 1,250 00<br>140 50 | |
| May 17, 1882 | J. Tremblay & *ux*. ... | do ... | do 148 do do ... | do ... | ..... | 5,000 00 | |
| July 8, 1882 | do ... | do ... | Hypothecary Guarantee on lot No. 148, official plan, Ste. Anne du Bout de l'Isle..... ..... | do ... | ..... | 570 38 | Against claims of J. E. Petit dit Lamarche. |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| do 20, 1881 | Wm. H. Brouse..... | do ... | Release, damages by flood to lot 29, 1st. Con. Matilda..... | Galops or Iroquois. ..... | ..... | 75 00 | | |
| | | | *Welland Canal.* | | | | | |
| do 2, 1881 | N. A. Tenbroeck & *ux* & *al*..... | do ... | Lots 22 and 23 in 3rd Concession, Grantham | Welland Canal..... | 3·00 acres. | 1,880 00 | Taken for canal. | |
| do 2, 1881 | do ... | do ... | Release, damages to do do ... | do ..... | ..... | ..... | Flooded. | |
| June 30, 1881 | Trust & Loan Co. of Canada ..... ..... | do ... | Release of Mortgage $800, on do ... | do ..... | ..... ..... | ..... | Mortgage of 1st May, 1865. | |
| July 2, 1881 | Geo. May & *ux*..... .... | do ... | Lot 22 in 2nd Concession, Grantham..... | do ..... | 4·00 acres. | 2,360 00 | Taken for canal. | |
| do 2, 1881 | do ..... | do ... | Release, damages to do do ..... | do ..... | ..... ..... | ..... | Flooded. | |
| Sept. 9, 1881 | Geo. Walker & *ux*.... | do ... | Lot 15, Township of Thorold..... ..... | do ..... | 0 07 acres. | 40 00 | | |
| do 21, 1881 | Wm. Mellanly ..... ... | do ... | Lot 27, in 2nd Concession, Humberstone.. ..... | do ..... | 4·22 do | 2,500 00 | Taken for canal. | |
| do 21, 1881 | do ..... | do ... | Release, damages to do do ..... | do ..... | ..... ..... | ..... | Damages. | |
| do 9, 1881 | Estate Wm. H. Merritt | do ... | Lot 119, Thorold (Allanburg Village lots 256 to 265, and 267 to 274, and 276 to 285..... | do ..... | 0·29 acres.<br>2·61 do<br>0·84 do<br>1·86 do<br>0·24 do | 1,800 00 | | |
| | | | | do ..... | 0·04 do | 30 00 | To change line of Welland Railway. | |
| Nov. 3, 1881 | Wm. Wilson & *ux*..... | do ... | Lot 15, Thorold..... ..... | do ..... | 0 92 do | 25 00 | | |
| Dec. 6, 1881 | Jos. Simpson & *ux*..... | do ... | Lot 21, in 3rd Con., Wainfleet..... | do ..... | 0·83 do | 791 00 | | |
| Feb. 21, 1882 | T. & P. Nihan & wives | do ... | Lot 17, in 4th do Grantham..... ..... | | | | | |
| Mar. 8, 1882 | Mary R. McRae, administratrix of Estate John McRae... | do ... | Lot B, east of canal, Port Colborne, part of 27 in 2nd Con., Humberstone..... ..... | do ..... | 0·03 do | 5,364 61 | | |
| May 2, 1882 | Geo. M. Clarke & *al*... | do ... | Lot at Petersburgh, part of 28, 2nd Con., Humberstone.... | do ..... | 5·00 do | 3,990 00 | | |
| April 19, 1882 | Eliz. Hannaford..... | G. M. Clarke *et al*..... | Quit claim deed, &c. do do ... | do ..... | ..... | 50 00 | Right of way. | |
| Mar. 17, 1882 | John Simes & *ux*..... | do ... | do do do ... | do ..... | ..... | 5 00 | do | |
| Feb. 21, 1882 | John Landgraff & *ux*. | do ... | do do do ... | do ..... | ..... | 25 00 | do | |
| Aug. 7, 1882 | E. McArdle ..... ..... | Her Majesty. | Lots 23 in 2nd Con. and 23 in 3rd Con., Grantham, and 1 & 2 in 1st Con., and broken front of Louth ..... ..... | do ..... | 3·00 acres. | 2,575 00 | | |
| do 7, 1882 | do ..... | do ... | Release, damages do do ... | do ..... | ..... ..... | ..... | | |
| May 16, 1882 | Joseph Upper. ..... | do ... | Order of Court of Chancery, *re*-lot 96, Thorold | do ..... | 1·44 acres. | 2,000 00<br>60 00 | Principal.<br>Interest. | |

H. A. FISSIAULT.

OTTAWA, 4th November, 1882.

# APPENDIX No. 10.

LIST of Contracts entered into in connection with the Canadian Pacific Railway.

| No. of contract. | Names of Contractors. | No. of contract. | Names of Contractors. |
|---|---|---|---|
| 1 | Sifton, Glass & Co. | 23 | Sifton & Ward. |
| 2 | Richard Fuller. | 24 | Oliver, Davidson & Co. |
| 3 | F. J. Barnard. | 25 | Purcell & Ryan. |
| 4 | Oliver, Davidson & Co. | 26 | James Isbester. |
| 5 | Joseph Whitehead. | 27 | Merchants Lake and River Steamship Co. |
| 5*a* | Joseph Whitehead. | 28 | Red River Transportation Co. |
| 6 | Guest & Co. | 29 | Cooper, Fairman & Co. |
| 7 | Ebbw Vale Steel, Iron and Coal Co. | 30 | Robb & Co. |
| 8 | Mersey Steel and Iron Co. | 31 | Patent Bolt and Nut Co. |
| 9 | West Cumberland Iron and Steel Co. | 32 | Cooper, Fairman & Co. |
| 10 | West Cumberland Iron and Steel Co. | 32*a* | LeMay & Blair. |
| 11 | Naylor, Benzon & Co. | 33 | Kavanagh, Murphy & Upper. |
| 12 | Hon. A. B. Foster. | 34 | North West Transportation Co. |
| 13 | Sifton & Ward.<br>Purcell & Ryan. | 35 | Cooper, Fairman & Co. |
| | | 36 | William Robinson. |
| 14 | Sifton & Ward.<br>Jos. Whitehead (completing contract No. 14). | 37 | Heney, Charlebois & Flood. |
| | | 38 | Edmond Ingalls. |
| 15 | Joseph Whitehead. | 39 | John Irving. |
| 16 | Canada Central Railway Co. | 40 | Gouin, Murphy & Upper. |
| 17 | Anderson, Anderson & Co. | 41 | Purcell & Co. |
| 18 | Red River Transportation Co. | 42 | Manning, Macdonald, McLaren & Co. |
| 19 | Moses Chevrette. | 43 | Joseph Upper & Co. |
| 20 | Merchants Lake and River Steamship Co. | 44 | West Cumberland Iron and Steel Co. |
| 21 | Patrick Kenny. | 45 | Barrow Hœmatite Steel Co. |
| 22 | Holcomb & Stewart. | 46 | Ebbw Vale Steel, Iron and Coal Co. |

List of Contracts, &c.—*Continued.*

| Names of Contractors. | No. of contract. | Names of Contractors. |
|---|---|---|
| Patent Bolt and Nut Co. | 71 | Toronto Bridge Co. |
| John Ryan. | 72 | Ontario Car Co. |
| Richard Dickson. | 73 | Toronto Bridge Co. |
| Miller Brothers & Mitchell. | 74 | Wm. Gooderham, Jr. |
| Dominion Bolt Co. | 75 | Pillow, Hersey & Co. |
| North-West Transportation Co. | 76 | Cooper, Fairman & Co. |
| Barrow Hœmatite Steel Co. | 77 | Stubbs & Co. |
| Guest & Co. | 78 | Skead & Haycock. |
| West Cumberland Iron and Steel Co. | 79 | The Truro Patent Frog Co. |
| The Kellogg Bridge Co. | 80 | James Crossen. |
| The Truro Patent Frog Co. | 81 | Dunlop & Rannie. |
| W. Hazelhurst. | 82 | Ontario Car Co. |
| Whitehead, Ruttan & Ryan. | 83 | James Crossen. |
| D. O. Mills. | 84 | Ontario Car Co. |
| D. O. Mills. | 85 | Nobles & Follis. |
| D. O. Mills. | 86 | Fairbanks, Morse & Co. |
| D. O. Mills. | 87 | James Crossen. |
| Ryan, Whitehead & Ruttan. | 88 | Walter Oliver. |
| James Crossen. | 89 | J. Patterson. |
| Bowie & McNaughton. | 90 | Ferris, Paul & Milwar. |
| Moncton Car Co. | 91 | Canadian Pacific Railway Company. |
| Ontario Car Co. | 92 | Andrew Onderdonk. |
| North-West Transportation Co. | 93 | Andrew Onderdonk. |
| North-West Transportation Co. | | |

# APPENDIX No. 11.

TABLE of distances of stations between the Cities of Ottawa and Kingston :—

| No. of station. | Name of Station. | Distances from Ottawa. | Locks. | | Dams. | | | Length of Artificial Canal at each Station, in miles. |
|---|---|---|---|---|---|---|---|---|
| | | | No. | Lift at Low Water. | No. | Length. | Height. | |
| | | Miles. | | Rise Ft. In. | | Feet. | Feet. | |
| 1 | Ottawa | 0 | 8 | 82 0 | 3 | 230<br>1,320<br>1,616 | 18<br>33<br>14 | |
| 2 | Hartwell's | 4¼ | 2 | 22 0 | ..... | 100 | 28 | 4·00 |
| 3 | Hogsback | 5½ | 2 | 13 6 | 1 | 320 | 60 | |
| 4 | Black Rapids | 9½ | 1 | 10 0 | 1 | 300 | 12 | 0·13 |
| 5 | Long Island | 14¾ | 3 | 27 0 | 3 | 850 | 68 | 0·13 |
| 6 | Burritt's | 40¾ | 1 | 10 6 | 1 | 240 | 14 | 1·50 |
| 7 | Nicholson | 43¾ | 2 | 15 2 | 1 | 500 | 9 | 0·50 |
| 8 | Clowes | 44½ | 1 | 10 6 | 1 | 481 | 16 | 0·05 |
| 9 | Merrickville | 46¾ | 3 | 25 0 | 1 | 150 | 6 | 0·33 |
| 10 | Maitland | 55 | 1 | 4 9 | 1 | 270 | 8 | 0·13 |
| 11 | Edmunds | 59½ | 1 | 10 10 | 1 | 343 | 8 | 0·06 |
| 12 | Old Slys | 60½ | 2 | 15 6 | 1 | 250 | 20 | 0·25 |
| 13 | Smith's Falls | 61½ | 4 | 33 9 | 2 | 600 | 24 | 0·13 |
| 14 | First Rapids or Poonamalie | 64 | 1 | 7 9 | 1 | 260 | 5 | 1·25 |
| 15 | Narrows | 83¼ | 1 | 4 0 | 1 | 600 | 9 | 0·06 |
| | Total rise at low water | ..... | ..... | 292 3 | | | | |
| | | | | Fall. | | | | |
| 16 | Isthmus | 87½ | 1 | 4 0 | ..... | ..... | ..... | 1·25 |
| 17 | Chaffey's | 92 | 1 | 12 6 | ..... | ..... | ..... | 0·13 |
| 18 | Davis | 94¼ | 1 | 9 0 | 1 | 300 | 15 | 0·06 |
| 19 | Jones' Falls | 97¾ | 4 | 60 0 | 1 | 300 | 60 | 0·25 |
| 20 | Brewer's Upper Mills | 108½ | 2 | 19 0 | 1 | 200 | 20 | 1·75 |
| 21 | do Lower Mills | 110 | 1 | 14 2 | 1 | 200 | 12 | 4·25 |
| 22 | Kingston Mills | 120¼ | 4 | 46 8 | 1 | 6,042 | 14 | 0·25 |
| 23 | Kingston | 126¼ | ..... | ..... | ..... | ..... | ..... | ..... |
| | Total fall at low water | ..... | ..... | 165 4 | ..... | ..... | ..... | ..... |
| | Total | ..... | 47 | ..... | 24 | 15,472 | ..... | 16·26 |

# APPENDIX No. 12

BLE showing the dates of the closing of the Canals in the Autumn of 1881 and of the opening in the Spring of 1882.

| Canals. | Closing. | Opening. |
|---|---|---|
| achine Canal | December 1, 1881. | April 25, 1882. |
| auharnois Canal | November 28, | do 25, |
| ornwall Canal | December 10, | do 25, |
| illiamsburg Canals | do 10, | do 24, |
| elland Canal— | | |
| New Canal | December 15, | do 20, |
| Old Canal | do 19, | do 20, |
| urlington Bay Canal | November 20, | do 20, |
| t. Anne's Lock and Dam | do 26, | do 11, |
| arillon Canal | do 26, | do 28, |
| renville Canal | | May 1, |
| ulbute Lock and Dam | November 26, | May 1, |
| hute à Blondeau | do 30, | do 1, |
| ideau { Kingston Mills | do 23, | do 1, |
| ideau { Ottawa | do 25, | April 13, |
| t. Ours' Lock | do 28, | May 2, |
| hambly Canal | December 8, | April 11, |
| rie Canal (New York) | do 31, | May 5, |
| t. Peter's Canal (Cape Breton) | November 25, | March 15, |
| rent Canal Works | | |

# APPENDIX No. 13.

## ST. LAWRENCE NAVIGATION.—TABLE OF DISTANCES.—A.

FROM STRAITS OF BELLE-ILE TO DULUTH, AT HEAD OF LAKE SUPERIOR, BY WATER.

| From | To | Sections of Navigation. | Statute Miles. Intermediate. | Statute Miles. Total to Straits of Belle-Ile. |
|---|---|---|---|---|
| Straits of Belle-Ile | Cape Whittle | Gulf of St. Lawrence | 240 | 240 |
| Cape Whittle | West Light, Anticosti | do do | 201 | 441 |
| West Light, Anticosti | Father Point | River St. Lawrence | 202 | 643 |
| Father Point | Rimouski | do | 6 | 649 |
| Rimouski | Bic | do | 12 | 661 |
| Bic | Isle Verte | do | 39 | 700 |
| Isle Verte (opp. Saguenay) | Quebec | do | 126 | 826 |
| Quebec | Three Rivers | do to Tide water | 74 | 900 |
| Three Rivers | Montreal | do | 86 | 986 |
| Montreal | Lachine | Lachine Canal | 8½ | 994½ |
| Lachine | Beauharnois | Lake St. Louis | 15½ | 1,009¾ |
| Beauharnois | Ste. Cécile | Beauharnois Canal | 11¼ | 1,021 |
| Ste. Cécile | Cornwall | Lake St Francis | 32¾ | 1,053¾ |
| Cornwall | Dickinson's Landing | Cornwall Canal | 11½ | 1,065¼ |
| Dickinson's Landing | Farran's Point | River St. Lawrence | 5 | 1,070¼ |
| Farran's Point | Upper end of Croyle's Island | Farran's Point Canal | ¾ | 1,071 |
| Upper end Croyle's Island | Williamsburg or Morrisburg | River St. Lawrence | 10½ | 1,081¾ |
| Williamsburg | Rapid Plat | Rapid Plat Canal | 4 | 1,085¾ |
| Rapid Plat | Point Iroquois Village | River St. Lawrence | 4½ | 1,090 |
| Point Iroquois Village | Upper end Presqu'Ile | Point Iroquois Canal | 3 | 1,093 |
| Presqu'Ile | Point Cardinal, Edwardsburgh | Junction Canal | 2⅝ | 1,095⅝ |
| Point Cardinal | Head of Galops Rapids | Galops Canal | 2 | 1,097⅝ |
| Galops Rapids | Prescott | River St. Lawrence | 7⅜ | 1,105 |
| Prescott | Kingston | do | 59 | 1,164 |
| Kingston | Port Dalhousie | Lake Ontario | 170 | 1,334 |
| Port Dalhousie | Port Colborne | Welland Canal | 27 | 1,361 |
| Port Colborne | Amherstburgh | Lake Erie | 232 | 1,593 |
| Amherstburgh | Windsor | River Detroit | 18 | 1,611 |
| Windsor | Foot of St. Mary's Island | Lake St. Clair | 25 | 1,636 |
| Foot of St. Mary's Island | Sarnia | River St. Clair | 33 | 1,669 |
| Sarnia | Foot of St. Joseph's Island | Lake Huron | 270 | 1,939 |
| Foot of St. Joseph's Island | Foot of Sault St. Mary | River St. Mary | 47 | 1,986 |
| Sault St. Mary | Head of Sault St. Mary | Sault St. Mary Canal | 1 | 1,987 |
| Head of Sault St. Mary | Pointe aux Pins | River St. Mary | 7 | 1,994 |
| Pointe aux Pins | Duluth | Lake Superior | 390 | 2,384 |
| Prince Arthur Landing to Lake Shebandowan | | | 45 | 45 |
| Lake Shebandowan to North West Angle | | | 312 | 357 |
| North West Angle to Fort Garry (Winnipeg) | | | 95 | 452 |

Of the 2,384 miles from the Straits of Belle-Ile to the Head of Lake Superior, 71 miles are artificial navigation, and 2,312¼ open navigation.

Straits of Belle-Ile to Liverpool, 1,942 geographical or 2,234 statute miles.

The total fall from Lake Superior to Tide-water is about 600 feet.

The Steamboat voyage from Collingwood to Prince Arthur Landing is 532 miles.

# APPENDIX No. 14

## TOLLS—WELLAND AND ST. LAWRENCE CANALS.

GOVERNMENT HOUSE, OTTAWA,
Thursday, 21st day of April, 1881.

*Present:*

HIS EXCELLENCY THE GOVERNOR GENERAL IN COUNCIL.

His Excellency, on the recommendation of the Honorable the Acting Minister ilways and Canals, has been pleased to amend the Orders in Council now in and to make the following alterations in the existing rates of tolls on the ınd and St. Lawrence Canals, namely:

. All through freight westwards, from Montreal to Lake Erie, shall continue y the existing tolls for passage through the St. Lawrence Canals, but shall pass igh the Welland Canal free

2. All through freight, eastwards from Lake Erie to Montreal, shall continue to he existing tolls for passage through the Welland Canal, but shall pass through t. Lawrence Canals free.

3. Goods shipped to any port west of the St. Lawrence canals, tolls upon h have already been paid for passage through such canals, may be re-shipped such ports and be passed through the Welland Canal free of tolls in the same as if they had been shipped through direct in the first instance.

4. Whereas, at present, articles coming under the heading "Class No. 4," which prises all articles not enumerated in the remaining classes, pay at the rate of 40 s a ton for passage through the Welland Canal, and 20 cents a ton for passage ugh the St. Lawrence Canals, henceforward, these unenumerated articles shall, transit westwards, pay 20 cents a ton for passage through the St. Lawrence als, and be permitted to pass through the Welland Canal free; and if in transit wards shall pay 20 cents a ton for passage through the Welland Canal, passing ugh the St. Lawrence Canals free.

5. All classes of goods not otherwise provided for comprised in classes "3" and with the exception of coal, shall, if using the Welland Canal only, in transit twards, pay 15 cents a ton. Coal, however, shall continue to pay, as at present, cents a ton for passage either way.

6. Rye, buckwheat, and any other grains not enumerated, shall be classed as onging to class *three* of the existing Schedule of Canal tolls.

J. O. COTÉ,
*Clerk, Privy Council.*